in a handy and cheap form, as well as to discuss some simple examples of their application.

The first part—which gives an explanation of graphical methods, illustrates graphical arithmetic, and shows how to represent areas and volumes by lines—is very carefully and clearly worked out, and leads one to see that this part of the subject might well come in at a fairly early date in school-work. Our idea is that the second part, "Graphical Statics," would be improved by more fullness of detail. It comprises an account of the following matters: kinematics, forces in one plane acting at a point, the funicular polygon, resolution of forces, moments, couples, bending moment and shearing force in a simple beam, rolling loads, framed structures, effects of wind-pressure on roofs, bridge-girders, and centres of gravity.

We have noted only two or three typographical errors. The notation employed is one most frequently termed "Bow's notation" in this book, from its having "been brought into use by Robert H. Bow, Esq., C.E.," but a note states that "the method seems, however, to have been first suggested by Prof. Henrici." We presume that Prof. Henrici's notation was the one we have referred to in the opening paragraphs of this notice. The immediate object of the book is to furnish help to students preparing for the South Kensington Examinations and for those of the City and Guilds of London Institute.

The Manual Training School. By C. M. Woodward. (Boston: D. C. Heath and Co., 1887.)

MR. WOODWARD has by no means a high opinion of the results of the efforts that have hitherto been made in European countries to promote technical education. In 1885 he spent five months in examining "trade schools" on this side of the Atlantic, and all the schools visited by him, with the exception of the French Government school at Châlons, disappointed him. He admits that they have "many excellent features"; but their manual training is generally, he holds, "very narrow," and he condemns "their long daily sessions, their long terms, and the conventional nature of their curricula." Manual training, according to Mr. Woodward, is in a much more flourishing condition in America. There it has been introduced "not for a trade or a profession, but for the healthy growth and vigour of all the faculties, for general robustness of life and character"; and he is of opinion that it has been developed in a way that places it "far in advance of any model in a foreign land." Whether or not this comparative estimate is accurate, no one who reads Mr. Woodward's book will dispute that the Americans have begun to understand thoroughly the importance of technical instruction, and that the leaders of opinion on the subject have done much to diffuse enlightened ideas as to the true aims and methods of manual training. Unfortunately, Mr. Woodward has not the art of presenting facts and arguments in an attractive style. He has, however, brought together a great mass of useful information about a subject of pressing importance, and his work, although relating chiefly to institutions founded in his own country, ought to find readers in England as well as in the United States. He does not enter, in detail, into the theory and practice of manual training in primary and grammar schools. He limits himself to the training of pupils beyond the age of fourteen. The value of the work is increased by a number of good woodcuts illustrating shop exercises in woods and metals.

The Method of Creation. By Henry W. Crosskey. (London: The Sunday School Association, 1888.)

THIS little volume belongs to a series of "Biblical Manuals," edited by Prof. J. Estlin Carpenter. With the polemical parts of the book we have, of course, nothing to do. In the chapters in which Mr. Crosskey devotes himself simply to the exposition of scientific truths he writes with full knowledge of his subject and in a clear and pleasant style. "How 'dry land' was formed" is the subject of an excellent chapter, in which the writer brings together some of the more striking of the facts which prove that rocks have been formed by various agencies, that there is no single period at which any kind of rock has been specially produced, that the crust of the earth consists of rocks in ordered succession, and that there has been an unvarying order in the succession of rocks. There are also good chapters on the history of plants and animals, and on the antiquity of the human race.

LETTERS TO THE EDITOR.

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"Coral Formations."

DR. GUPPY'S letter shows that I have not been sufficiently explicit on the subject of the formation of atolls, yet I cannot well understand that I have been obscure on the subject of his first question. Surely it is a sufficient reason for rejecting the theory of subsidence as applied to the Chagos Group that I fancy myself, in conjunction with M. Spurs, to have detected evidences of elevation in Diego Garcia. Darwin laid great stress on the character of the Great Chagos Bank as affording evidence of his theory of subsidence; he considers it to be an atoll drowned by a too rapid act of subsidence; but, as I have pointed out, if this were so it is impossible to understand how two atolls such as the Great Chagos Bank and Centurion's Bank could have been thus destroyed without Six Islands or Egmont's Atoll, which lies directly between them, being involved in their destruction. Further, the raised atolls north of Madagascar are unquestionable proofs of upheaval in this region, yet in the same region are low-lying atolls, atoll-shaped reefs awash, and submerged atoll-shaped banks. Clearly the theory of subsidence does not apply to these groups, and I do not see any reason for supposing that the Laccadive and Maldive Islands have been formed differently to the other atolls in the Indian Ocean, though I am unable to bring forward any fresh arguments with regard to them.

Secondly, because I do not agree with Mr. Murray in thinking that lagoons are due largely to the solvent action of sea-water, it is no reason that I should disagree with other parts of his theory. Indeed, after Dr. Guppy's striking observations at Santa Anna and other islands, it would be idle to deny that organic deposits have formed the bases of many atolls, perhaps of all. It did not seem to me necessary to deal with this part of the subject, because as a resident on an atoll without the means of making sectional soundings I had nothing new to say on the subject.

Perhaps you will allow me space to add that before reading my paper I had not had the advantage of meeting Mr. Murray. I have since had that advantage, and on comparing notes with him I find that I am much more in accord with him than my paper would seem to show. I still maintain my point that the rate of organic growth in the lagoon of Diego Garcia is sufficient to counterbalance the solvent action of the sea-water. In other points I agree with him, and believe that my observations confirm his view that atolls tend to spread outwards like a fairy-ring. Mr. Murray has convinced me that I laid undue stress on the direct influence of currents in determining the growth of corals, and this section of my paper was in consequence omitted in the account which appeared in the columns of NATURE. Judging from the local effects which I observed at Diego Garcia, where currents often swept through narrow channels with great force, and from Prof. Moseley's account of the oceanic currents sweeping past St. Paul's rocks, I was led to an exaggerated estimate of the rate of oceanic currents. No doubt a current running at the rate of some thirty-five miles in the day would modify or retard coral growth, but such currents are only found in narrow passages. G. C. BOURNE.