sulphuretted hydrogen. The white felting which gives the name "white" is formed by threads of different species of Beggiatoa, a thread-like fungus classed with the Schizomycetes by Zopf and others who have stated that bacteria forms constitute a stage of their life-cycle. Thus *Monas Okenii*, *Bacterium sulphuratum*, *Clathrocystis rosea-persicina*, and *Beggiatoa rosea-persicina* have all been described as stages of a single life-history. Dr. Engler is extremely cautious on this point, and limits himself to what he has seen. He does not agree with Warming that *Monas Mülleri*, which occurs with the Beggiatoæ, is the young stage of one of them; although he has observed one species sending off motile spherical spores. Two new genera of thread-shaped fungi are described which were found on a *Gammarus locusta* living on the white bottom. The paper is illustrated by a number of admirably executed drawings.

Thus the volume forms a very considerable contribution to the accurate scientific knowledge of the Baltic, for the attainment of which the Commission was instituted. Like all the other work published by the Commission, it exemplifies in the most convincing manner the truth that, to obtain light on marine problems, what is required is not a mass of evidence from people all equally without knowledge on the subject, but continued and elaborate research.

MASCART AND JOUBERT'S "ELECTRICITY AND MAGNETISM"

Electricity and Magnetism. By E. Mascart and J. Joubert. Translated by E. Atkinson. Vol. I. (London: Thos. de la Rue and Co., 1883.)

WE took occasion some time ago to draw the attention of the readers of NATURE to the "Leçons sur l'Électricité et le Magnétisme," by Professors Mascart and Joubert; we have now to thank Prof. Atkinson for an English translation of this valuable work. This is not the place to inquire into the necessity for an English translation of *any French* scientific work, not to speak of one which makes such demands on the culture of its readers as this does. It is enough for us to know that the publishers and translator consider the number of semi-educated Englishmen sufficiently great to justify their venture; it is our part to speak to the merits of the work and the manner of the translation.

The alterations in the matter of the book are so slight as to call for no remark. Our first duty therefore reduces itself to a simple iteration of our high opinion of its value as a scientific manual. At the present time the public is well supplied with scientific instructors. The good intentions of all of them need not be doubted; but the inactivity or modesty of some and the incompetency of others have brought it about that there are large gaps in our repertory of science text-books either not filled at all or filled very unworthily. It would not be accurate to say that vol. i. of the treatise of MM. Mascart and Joubert fills the greatest of these gaps in the department of electricity and magnetism; nevertheless it fills a place not at present wholly occupied by any English text-book of merit. It has the misfortune, no doubt, of overlapping to a large extent the great work of Maxwell; but we believe that the tyro in the mathematical theories of electricity and magnetism will find it of the greatest advantage to use Mascart and Joubert as companion and commentary to Maxwell's volumes. In all that relates to fundamental points and general theory Maxwell should be studied, even where he is hardest to follow, because his work was written, not to evade, but to meet, difficulties. On the other hand, Mascart and Joubert will be found invaluable in matters of detail. We know of no text-book in any language that contains such an abundance of elementary illustrations of electrical and magnetic theory, all arranged with an elegance peculiarly French.

The English version now before us is neatly printed and solidly got up. The translation on the whole is very well done. It would be easy to pick out small inaccuracies here and there, particularly in the early chapter. For some of these the translator is not altogether to blame; for the introductory part of the work seems to us to be less clear and carefully written than the following chapters, where the authors enter more into detail; and in that part of the book the translation leaves little to be desired. We noticed very few misprints, but one calls for correction: the name of van Troostwyk's collaborateur in the decomposition of water by the voltaic current was Deimann and not Diemann. No doubt this mistake occurs in the original; but the individual in question, though perhaps not widely known, yet deserved better than to be made quite unrecognisable. This brings to mind the only complaint of any gravity we have to bring against the editor of the English translation. Why did he not do something to remedy the one serious defect of MM. Mascart and Joubert's text-book, viz. the want of sufficient references to original sources of information? It must be remembered that the scientific student who goes the length of MM. Mascart and Joubert's leading strings is expected one day to walk alone; and some indication should be given him of the paths that lead to farther knowledge. A defect of the kind might be overlooked in a school primer, written to enable the oppressed schoolmaster to screw a Government grant on the minimum qualification from some reluctant inspector, but is to be deplored in a work of the present pretensions.

Instead however of complaining farther of what MM. Mascart, Joubert, and Atkinson *have not* done (perhaps had not the leisure to do) for us, it will be more fitting to conclude by thanking them heartily for what they *have* done, and done so well. G. C.

OUR BOOK SHELF

Energy in Nature. By William Lant Carpenter, B.A. B.Sc. (London, Paris, and New York: Cassell and Co.)

THIS book is, with some additions, the substance of a course of six lectures on the Forces of Nature, and their mutual relations, delivered under the auspices of the Gilchrist Educational Trust.

It is of the greatest importance that the general body of the people, and more especially the intelligent artisan class, should become acquainted with the leading principles of the science of energy. The series of lectures delivered with this object represents one of the best sustained efforts to bring this great subject before the minds of this class of the people, and in collecting together and publishing these lectures the author has done a work which must be regarded as a scientific boon to the artisan.