percentage of the sun's rays (its luminous portion, for example) would be re-transmitted. To explain electrical phenomena, M. Flammarion remarks, "It is admitted, first, that electricity is a subtle fluid capable of being amassed, condensed, and rarefied, &c.," and on p. 493, "The Saint Elmo fires are a slow manifestation of electricity, a quiet outflow, like that of the hydrogen in a gas-burner." At the present day we hardly expected to find so material a conception of electricity put forth, unguarded by a restriction of the fluid theory being merely a convenient hypothesis whereby electrical effects can be represented to the mind. And what evidence has M. Flammarion for his unqualified assertion on p. 427, that "the globe is one vast reservoir for this subtle fluid [electricity], which exists in all the worlds appertaining to our system, and of which the radiating focus is in the sun itself. . . . Its palpitations sustain the life of the universe!"

We have noticed a few other passages that have escaped the editor's attention in the present edition. The author speaks of a mist in the Grotto del Cane as "composed of carbonic acid gas, which is coloured by a small quantity of aqueous vapour." This is difficult to understand, the vapour being as invisible as the gas itself. We did not know it was necessary to use a "preparation of 'Joseph's paper,'" steeped in a solution of starch and potassic iodide, in order to detect ozone. In describing the discovery of oxygen and the chemical composition of the air, Lavoisier is the only name mentioned. It is not unlikely that a French writer should forget Priestley and Scheele, but the English editor ought hardly to have overlooked their names. We think also that a table of the analysis of air obtained from different parts of the globe should have been supplied. All that is given is one comparatively rough determination, namely, that 100 parts of air contain 23 of oxygen and 77 of nitrogen by weight. This is termed "an analysis made with every conceivable precaution." A large part of this same chapter is devoted to impurities present in the atmosphere, but Dr. Angus Smith's classical researches are not referred to, nor even is his name mentioned. And this reminds us that the volume is incomplete without an index, which it ought to possess.

We should like also to have seen some attempt at a collation of meteorological phenomena. Meteorologists in general seem to have their eyes so close to their special observations, that they accumulate a vast mass of figures without "hunting for a cycle," which has been asserted to be their first duty. There certainly appears to be some traces of an eleven-yearly cycle in the recurring period of extremely hot summers and cold winters from 1793 to the present time, cited by M. Flammarion. By collecting and tabulating these figures (given in chapters 4 and 5 of the third book), it becomes evident that extreme winters have immediately preceded or followed very hot summers. As the dates stand, they go alternately before and after, but this, no doubt, is but an accidental coincidence.

In spite of the slight defects we have pointed out, almost inseparable from a work dealing with such a variety of subjects, we can nevertheless endorse the opinion of the editor that the volume "will be found to be readable, popular, and accurate, and it covers ground not occupied by any one work in our language."

W. F. BARRETT

OUR BOOK SHELF

Mensuration of Lines, Surfaces, and Volumes. By D. Munn, F.R.S.E. (132 pp. "Chambers's Educational Course.")

THIS little work presupposes that the student has some knowledge of algebra and geometry, and we agree with the author that "it is not until a pupil has acquired this knowledge that he can take up the subject with any degree of intelligence or derive any educational advantage from its study." The number of propositions (59) is not too great; great judgment is displayed in the selection of the properties elucidated; the proofs are concise and clear, and are followed up by more than 350 examples, which appear to be clearly drawn up and to be well suited to test the student's acquaintance with the text. The book-work is accurately printed, the most important mistakes being p. 41, line 23, p. 91, lines 23, 24, and p. 110, line 22, but these are easily corrected. The work is one of a series, and the references throughout are to the edition of Euclid brought out by the same publishers; this reference to Euclid may appear objectionable in the eyes of some readers, but it is an objection easily got over in the case of those students for whom the work is intended.

Geological Stories. A series of autobiographies in chronological order. By J. E. Taylor, F.G.S. (London: Hardwicke, 1873.)

THE mere form into which Mr. Taylor has thrown his work—that of making a characteristic specimen from each geological formation tell its own story—has not, we think, added anything to its attractiveness: on the contrary, it will be apt to give many readers an uncomfortable feeling of unreality, and seems to us to have often cramped the author's freedom of description. We do not object to the autobiographical form in the abstract, but we think the direct form would have been more suited to Mr. Taylor's mental make. Notwithstanding this little drawback, Mr. Taylor tells the "old, old story," on the whole, in a manner well calculated to interest general readers, and send them to works where they may get the outline here given filled up. Anyone who reads this book carefully, will have a very fair notion indeed of what the best geologists think has been the earth's geological history. Mr. Taylor has of course wisely avoided entering upon disputed points, though one cannot but see that he has a comprehensive and very thorough knowledge of his subject. The illustrations are plentiful, though many of them seem well worn. On the whole the work is one we would recommend to be put into the hands of anyone who needs to be enticed into a knowledge of geology. "Stories" of this class are becoming more and more common every year. Not that we think or desire that they should ever supersede "stories" of another kind; but we take it as one of the most significant signs of the permeation of culture through society, that books of this class find a remunerative public.

LETTERS TO THE EDITOR

[The Editor does not hold himself responsible for opinions expressed by his correspondents. No notice is taken of anonymous communications.]

Originators of Glacial Theories

THE writer of a notice of Tyndall's "Forms of Water" (NATURE, vol. vii. p. 400) blames Tyndall for having revived in a popular work the Forbes-Rendu controversy, and for calling attention to the claims of Agassiz and Guyot.

It seems rather curious that the attempt to give credit to scientific investigators for the share they may have had in the development of a great theory should be the occasion of fault-finding. No property is as subtle as scientific property, and the care Tyndall has bestowed upon the historical facts bearing