

OUR BOOK SHELF.

An Attempt towards a Chemical Conception of the Ether. By Prof. D. Mendeléeff. Translated by George Kamensky. Pp. 51. (London: Longmans and Co., 1904.) Price 2s. net.

THIS tract, by the famous chemical philosopher whose seventieth birthday has recently been welcomed by the congratulations of the whole scientific world, contains the views of the author of the periodic law with regard to the classification under that law of the recently discovered inert gases. Prof. Mendeléeff places hydrogen at the head of his group i., containing the metals of the alkalis, and makes a special group zero for the inert gases. He gives his reasons for thinking that in this group there are two elements lighter than helium. One of them, of density about 0.2 compared with hydrogen, he identifies with coronium, the source of the characteristic spectrum of the solar corona. Such a gas could not, in accordance with the views first promulgated by Stoney, be retained in the earth's atmosphere, but might be prominent in the higher regions of that of the sun. The other, which he feels justified in taking of extremely low density, he proposes to identify with the ether, which cannot be held by any heavenly body, but is spread through all space. No mention is made of Maxwell's classical objection that the ether cannot be molecular, for if it were, all the energy of the universe would have been transferred into it. He notes incidentally, in connection with the uniform scale and composition of the universe, that most stars the masses of which are known are of the same order of magnitude as the sun. He thinks the condensation of ether towards the massive stars is connected with their intense radiation. He also thinks that the activity of the molecules of radium must be connected with a special condensation of ether around them; for his opinion, stated with reserve and without the certainty which he felt with regard to his views on the periodic law, is entirely against any breaking up of molecules or degradation of elements into other forms, and he therefore rejects the idea of electrons.

The obvious criticism on this is that he thus puts aside all the modern ideas as to the nature of radiation and electric action, and as to physics in general. He thinks, in fact, that the transmission of light will prove a more complex affair than the simple ideas of undulatory propagation on which it is now founded. He thinks that there is only one type of substance, and that a "working hypothesis" type of ether, by which he means a scheme of relations defining a substance with properties different from those of ordinary matter, must be ruled out. He now gives to the world these ideas which he has entertained, because he thinks that there may be little time left to him, and in the hands of others they may come to development. Though much at variance with the modes of thought of students of modern physics, one admires in reading about them the same originality and allusive suggestion that make his "Principles of Chemistry" such an attractive book. J. L.

Monographien aus der Geschichte der Chemie. Herausgegeben von Dr. Georg W. A. Kahlbaum. vii. Heft. (1) Jakob Berzelius. Von H. G. Söderbaum. Nach der wörtlichen Übersetzung von Emilie Wöhler bearbeitet von G. W. A. Kahlbaum. (2) Amedeo Avogadro und die molekulare Theorie. Von Icilio Guareschi. Deutsch von Dr. Otto Merckens. (Leipzig: Johann Ambrosius Barth, 1903.)

DR. KAHLBAUM continues to put all chemists under an obligation to him by the successive issue of his valuable monographs on the history of chemistry. The volume before us is of special interest from the fact that the

first part of it is a carefully edited translation of an autobiography of Berzelius. The statutes of the Royal Swedish Academy of Sciences require that each newly elected member shall deposit an account of his life and work at the time of his election, and that he shall add to it at stated periods so long as his membership continues. The autobiography before us is the result of that regulation.

It was translated into German, in the first instance, by Miss Emilie Wöhler, the daughter of the eminent chemist, himself a pupil and life-long friend of the great Swedish chemist, with the cooperation of Dr. Kahlbaum, and has been carefully edited and annotated by Prof. Söderbaum. No contribution to the personal history of chemistry that has appeared within recent years surpasses in interest this account by Berzelius of his own life. It is necessarily condensed from the very circumstances in which it was prepared, but all essential features of the career of its author down to 1840, a few years, therefore, before his death, are indicated.

The second monograph, on "Amedeo Avogadro und die Molekulare Theorie," is by Prof. Icilio Guareschi, and has been translated into German by Dr. Otto Merckens.

It is a concise account of the rise of molecular theories in chemical and physical science, and of Avogadro's connection with the subject. Incidentally the author deals with the attempts made by Dr. Debus to transfer the credit hitherto associated with the name of the Italian physicist of being the first to indicate the generalisation that equal volumes of gases under comparable conditions of temperature and pressure contain the same number of molecules to John Dalton.

The discussion will be of interest, especially to English chemists. At the same time, it can hardly be said to be convincing or to advance the matter much beyond what is generally recognised as its true position.

De Vi Physicâ et Imbecillitate Darwinianâ disputavit Franciscus Gulielmus Bain, Artium Magister. Pp. 103. (Oxford and London: James Parker and Co., 1903.) Price 2s. 6d. net.

WE gather from this work that its author was present as a boy at Darwin's funeral in Westminster Abbey, and had his toe trodden on by the King himself, then Prince of Wales; that the impression produced on him was such that he determined to devote himself in future years to finding out who Darwin was; and that having now succeeded in this laudable endeavour, he cannot visit the British Museum of Natural History and look up at the statue on the staircase facing the entrance without being seized by inextinguishable laughter. "It is this curious incarnation of philosophical poverty and unscientific perversity," he exclaims, "who is elevated into a scientific deity. A theory-blinded and arbitrary denier of Nature's organic and creative power is worshipped as a god in her own temple, every object in which gives the lie to his creed." "The theory of Darwin," he says in another place, "is the *ne plus ultra*, of human stupidity. It never could have occurred, except to one incapable of understanding the corollaries of organisation: but once having occurred, it never could have been retained and defended, except by one who was capable of systematically ignoring whole classes of animal organisation, and attending only to instances that prove nothing at all." But Darwin is not the only victim of the author's indignation. Of another name, scarcely less famous than Darwin's, we read that "the ravings of an old woman in a lunatic asylum would be wisdom in comparison with the latest views of this eminent philosopher." What, we may ask, is the cause of this lamentable