

from their student days to the high positions which they all attained, with an interest which never flags. The personal relations of those who were contemporaries are also happily stated, and the book, as a whole, gives us a living picture of the growth of chemical science which differs, most fortunately, from most of the systematic treatises on the history of chemistry.

In the controversial address, inspired by Berthelot's 'La Révolution Chimique,' in which he claimed for Lavoisier the right to the discovery and coordination of those general ideas relating to the composition of air and water, Dr. Thorpe is a sturdy and convincing defender of the claims of Priestley and Cavendish. And yet we cannot help feeling that his task would have been an easier one if the English chemists had not held on so tenaciously to the fantastical idea of phlogiston, which prevented them from grasping the true and simple relation of oxygen and nitrogen in air and oxygen and hydrogen in water. That this controversy does not blind the author to seeing Lavoisier in his true position as the founder of modern chemistry is shown in his article on Lavoisier in the *Contemporary Review* of December, 1900, in which he speaks of him as 'the dominant figure in the chemical world of the last century.'

The addresses are all of such great interest and value that it is not easy to select one or more of especial merit. And yet it is perhaps noticeable that the author is most attracted by the personality of Graham among the English chemists and of Wöhler, Kopp and Victor Meyer among the German. Admirable they all are, and well worthy of collection in the permanent form now before us.

The concluding addresses on 'The Rise and Development of Synthetic Chemistry,' 'On the Progress of Chemistry in Great Britain and Ireland during the Nineteenth Century,' and 'On the Development of the Chemical Arts during the Reign of Queen Victoria' are worthy of a place in the volume, but they lack the life of the addresses which deal with the personality of the masters of the science.

The history of chemistry is not often successfully taught in our technical schools, for

the reason, perhaps, that not many teachers are able to make it interesting. With this collection of essays as a basis for reading, the average teacher would find his students much more receptive of systematic instruction in the subject.

T. M. DROWN.

LEHIGH UNIVERSITY.

#### SCIENTIFIC JOURNALS AND ARTICLES.

CONTENTS of September, 1902, number of *Terrestrial Magnetism and Atmospheric Electricity*:

Portrait of General Sir Edward Sabine, Frontispiece; 'Ueber Die Meteorologische Natur der Variationen des Erdmagnetismus,' A. Nippoldt; 'Work in Terrestrial Magnetism and Atmospheric Electricity in South Africa,' J. C. Beattie; 'Wilson and Gibbs's Vector Analysis,' E. W. Hyde; 'Note Sur L'Amplitude de L'Oscillation Diurne de la Déclinaison Magnétique et Son Inégalité Mensuelle,' J. de Moidrey; 'Note Sur la Variation Séculaire de la Déclinaison à Zi-ka-wei (Chine), J. de Moidrey; 'Biographical Sketch of General Sir Edward Sabine, F.R.S., K.C.B.'; 'Magnetic Deflection of Long Steel Wire Plumb-lines,' W. Hallock; 'Divergence of Long Plumb-lines at the Tamarack Mine,' F. W. McNair; Notes, Abstracts and Reviews, Recent Publications.

#### DISCUSSION AND CORRESPONDENCE.

##### INVESTIGATION VERSUS ERUDITION.

TO THE EDITOR OF SCIENCE: It is very natural and desirable that scientific men of experience should give counsel upon the education of those to whom their labors, finished and unfinished, must be bequeathed. On the other hand, it will be a misfortune if they who have surrounded themselves with facilities for investigating their respective subjects forget the condition of the beginner and mislead him either with vain hopes or with unwarranted discouragement. Both these dangers seem to inhere in a proposition advanced in many of the addresses before scientific bodies, with which the columns of SCIENCE abound. Professor Thurston's able paper furnishes a recent and excellent example of the bogus educational axiom to which exception is taken.