superintendent of the "Nautical Almanack" and secretary of the Board of Longitude, and in 1827, on the resignation of Sir Humphry Davy, was spoken of as a probable successor to his office of President of the Royal Society, Davies Gilbert, however, being chosen. He died in 1829, at the age of 56, and his character was thus drawn by his intimate friend Sir Humphry Davy :—"A man of universal erudition and almost universal accomplishments. Had he limited himself to any one department of knowledge, he must have been first in that department. But as a mathematician, a scholar, and a hieroglyphist, he was eminent; and he knew so much that it was difficult to say what he did not know."

Sir Humphry Davy's brilliant career, and especially that portion of it which contributed so greatly to the fame and success of the Institution with which he was connected, is drawn in detail by his biographer; and the failings in his character and in his life which obscured its lustre to his contemporaries are in no way concealed. The following contrast of the characters of Davy and of his pupil and successor, Faraday, will be read with interest: —"Whenever a true comparison between these two nobles of the Institution can be made, it will probably be seen that the genius of Davy has been hid by the perfection of Faraday. Incomparably superior as Faraday was in unselfishness, exactness, and perseverance, and in many other respects also, yet certainly in originality and in eloquence he was inferior to Davy, and in love of research he was by no means his superior." As early as 1804, when Davy was only twenty-six, Dr. Dalton consulted him as to the best mode of preparing his lectures, and described him as "a very agreeable and intelligent young man, the principal failing in whose character as a philosopher is that he does not smoke;" and within two or three years from that time he had made the discoveries which have immortalised his name.

Dr. Bence Jones does not carry down the history of the Royal Institution beyond 1814, when it became as closely associated with Faraday's career as it had previously been with Davy's. We have seen what were the primary objects for the promotion of which the Institution was founded; and we know also the great work which it effected during the first ten years of its existence. These special purposes soon gave way to the effort, as our author expresses it, after striving to be fashionable; and the fashionable element has continued to be the most prominent feature in its subsequent life to the present day. Something is, no doubt, gained by making scientific subjects one of the ordinary topics of conversation in West End *salons;* the continuation of the History of the Royal Institution, which will have to be written twenty years hence, will show whether this object is compatible with the carrying on of original investigations which will add to the sum of our knowledge of the laws of Nature.

OUR BOOK SHELF

Une Expérience relative à la Question de la Vapeur Vésiculaire. Par M. J. Plateau. (Brussels: F. Hayez.)

THE elder Saussure, and after him De Luc, considered it to be an established fact that clouds are formed of little hollow globules, which Saussure designated vesicular vapours, or vesicles. These vesicles, having a structure similar to the soap bubble, were assumed to be capable of floating in the atmosphere and of remaining suspended in it so long as their physical condition was unaltered. When they became resolved into drops of water they formed rain. The same structure was assigned to the cloud formed by the condensation of the vapour of boiling water in air colder than itself. M. Plateau has endeavoured to put this view of the vesicular constitution of vapour to the test of experiment. With this view he has taken advantage of a method devised by M. Duprez, for inverting a wide tube (20mm. in diameter) full of water, so that the water may remain suspended in the tube. By means of a narrow tube drawn out at one end, so as to present an orifice of 0·4mm. in diameter, he succeeded in obtaining small hollow globules of water of less than a millimetre in diameter, and transporting them under the free surface of the water, suspended in the wide tube. As soon as contact was established with that surface, the little bubble became detached, and the air which it contained penetrating into the liquid, mounted through it. The experiment, on being several times repeated, gave always the same result. M. Plateau has applied this method to the cloud formed when water is boiled in free air. "Let us imagine," he says, "that at a certain distance from the surface of the water suspended in the wide tube, a current of visible vapour of water arises. If this vapour is composed of vesicles, each of them which comes into contact with the liquid surface must introduce into the water a microscopic bubble of air, which will immediately begin to ascend, so that the whole will form in the water of the tube a cloud which will rise slowly in it, and alter its transparency." In making the experiment, no cloud was produced, and M. Plateau concludes, in conformity with the view now generally held by physicists, that the vesicular state of vapour has no real existence. He discusses objections which may be raised to his experiment, such as the possible solution of the bubbles of air in the water, the bursting of the bubbles at the surface of the water and the escape of the air contained in them, or their rolling under the surface of the water till they reach the margin of the tube and thus get away; and shows satisfactorily that these objections do not invalidate the result at which he has arrived.

Chemical Notes for the Lecture Room, on Heat, Laws of Chemical Combination, and Chemistry of non-Metallic Elements. By Thomas Wood, Ph.D., F.C.S. Pp. 181. (London: Longmans, Green, and Co.)

ON reading this volume the author's intention is plainly manifest; the book has been written principally for the use of students preparing for the matriculation examination at the University of London. It has been written as concisely as possible, rendering the task of "cramming" the subject more easy of attainment. For such a purpose we certainly can recommend this book; but for beginners who wish to study chemistry we think it has several faults. One of them is that such a comparatively large amount of the book is devoted to the subsidiary subject, Heat, almost a quarter of the text being thus occupied. The article on thermometers, for instance, occupies no less than nine pages, which strikes us as being rather out of proportion to the remainder of the book. A second fault is the almost complete absence of any such details as would enable a student to repeat the experiments mentioned in the text. This we think is a fault which would tend to make the beginner get up his subject parrot-like, a method which is certainly not to be desired. The chemistry of the non-metallic elements only occupies eighty-five pages of this volume; the definitions and laws of chemical combination occupy another thirty-eight pages. The explanations, in the majority of instances, are clearly expressed, the facts of the case being stated in as few words as possible. A few of the definitions can scarcely be considered good; one, in particular, is "that