

"The Old Light and the New."

YOUR reviewer expressed an opinion, and makes two statements, and the six lines comprise his review of my book. The opinion, being on a matter of business, may be right or may be wrong. The statements are supposed to relate to fact; but they must be the outcome of hasty reading, for the "large portion of the book, dealing with theories of the natural colours of bodies," cannot surely be spoken of as "padding" in a work whose sub-title is "The Chemistry of Colour," and one of whose objects is to show that the Röntgen rays and matter yield "invisible" colour which conforms to the same laws as "visible" colour. Nor do I think it correct to call information on the X-rays "sketchy" because it happens to be concise.

WILLIAM ACKROYD.

IN my brief criticism of Mr. Ackroyd's book, I did not intend to suggest that the *whole* of the section on natural colours was "padding." My meaning would, perhaps, have been clearer had I written, "a large portion of that part of the book which deals with theories of the natural colour of bodies is nothing more than padding." The forty pages which comprise the chapter on "The Chemistry of Colour," contain the substance of a lecture delivered before the Society of Dyers and Colourists, and is so full of tabular details, while the remainder of the book is of a very elementary character, that it certainly gives the impression of having been included more to increase the bulk than on account of suitability.

YOUR REVIEWER.

"The Reminiscences of a Yorkshire Naturalist."

THE brevity of the reference, on page 205 of "The Reminiscences of a Yorkshire Naturalist," by Dr. W. C. Williamson, to the memoir in the *Annales des Sciences Naturelles*, may give rise to misconception. Prof. Hartog's share in this work was by no means that of a mere translator, although his exceptional ability as a French scholar was of essential service. His collaboration extended to the substance as well as the form of the memoir, and he was always fully recognised by Dr. Williamson as its joint author.

A. C. WILLIAMSON.

Post-Graduate Study in London.

COULD you inform a graduate in science of London University whether there is any place in London where he could attend post-graduate and research courses of study in botany? He is engaged as science master in a large public day-school, but is anxious to study botany in his spare time. Any information will greatly oblige.

"PUTHOS."

June 14.

LORD KELVIN'S JUBILEE.

OUR summary in last week's issue of the proceedings at Lord Kelvin's jubilee celebration gives only a faint idea of the completeness and success with which every part of the festival was carried out, or of the enthusiasm which characterised what was the world's tribute of admiration to the achievements and personal qualities of a truly great man. The list of delegates and visitors which we give on pp. 174-5 will convey some idea of the unanimity with which science and learning throughout the world have done honour to one who, besides advancing pure science in a remarkable degree by his own abstract researches, has not disdained to apply his great knowledge of scientific principles to the construction of apparatus and appliances which have promoted peace and good will among men and aided commerce by placing continents in telegraphic communication, by improving and facilitating navigation, and last but not least, diminished the perils to which those who sail the seas are exposed. A great physical mathematician, a physicist to whom physical principles are intuitive, an engineer whom engineers have united to honour as one of the greatest of themselves, Lord Kelvin has many scientific interests, and there is no department of science which is not the larger and richer for his work.

The opening meeting of the celebration was the conversazione on Monday evening at the University. The

guests were received by the Senatus Academicus, and the members of the Corporation of the City of Glasgow headed by Lord Provost Sir James Bell, in the Randolph Hall, which forms a "Fore Hall" or vestibule for the magnificent Bute Hall in which the high ceremonies of the University are held. In the Bute Hall, a little beyond the entrance and to the left, chairs were set for Lord and Lady Kelvin, who stood receiving the individual congratulations of the multitude of distinguished visitors. After thus paying their respects to the hero of the occasion, the guests passed on to meet one another, to renew acquaintanceships, to look at the treasures of the museum, and to inspect the splendid collection of instruments, diplomas, and medals which had been arranged to illustrate Lord Kelvin's researches and inventions, and the honours he has received. In this exhibition were many things of great interest, and we will not attempt even their enumeration. To give an adequate account of the instruments alone would require several numbers of NATURE, while the diplomas, mostly in Latin and of extraordinary distinction, represented the honour in which Lord Kelvin is held by the learned societies at home and abroad. Beginning with the certificate of the Bishop of Ely approving the appointment of William Thomson, B.A., as a Fellow of Peterhouse, they ended with the credentials of Sir William Thomson or Lord Kelvin's election as member of every one of the most distinguished scientific societies of the world, and included the letters of the Perpetual Secretary announcing, first, Lord Kelvin's election as Corresponding Member, next, as Foreign Associate of the Institute of France, and the announcement of his appointment as *Grand Officier* of the Legion of Honour.

The part played by the telegraph in the conversazione formed an exceedingly interesting part of the proceedings. The chief Cable Companies—the Anglo-American, the Commercial, the Eastern, and the Brazilian Submarine—sent congratulations, and instruments were arranged in the Library Hall whereby messages could be received from all parts of the world during the soirée. The Anglo-American Company's message may here be quoted, as it gives in a few words that credit for rendering by his instruments submarine telegraphy practically possible, which is Lord Kelvin's due, and that by a large portion of the commercial public that carries on business by means of cable communication is either unknown or apparently forgotten.

In 1858 Professor William Thomson took out his first patent for a system of working long cables, and for instruments (including the mirror-galvanometer) calculated for producing a high rate of transmission. In the Atlantic expedition of 1858 Professor William Thomson, at that time one of the directors of the Atlantic Telegraph Co., at the request of his brother directors, took upon himself the duties of electrician on board H.M.S. *Agamemnon*, which had been placed at the disposal of the company for the laying of the first Atlantic cable; and when the cable had been laid, it was Professor William Thomson's inventions and genius which caused a sufficient number of messages to be transmitted to demonstrate the practicability of Atlantic telegraphy, thus contributing most materially to the present success.

Our readers will remember that the theoretical solution of the problem of telegraph signalling by Lord Kelvin consisted in showing that the "retardation" of a signal increases in direct proportion to the square of the length of the cable supposed of a given pattern; and that therefore it was only possible by using receiving instruments for surpassing in delicacy the most sensitive of land instruments that intelligible signals could be obtained at all. There can be no manner of doubt that it was the tremendous battery power used to actuate the primitive receiving instruments that ruined the cable first laid, and brought temporary disaster to the promoters. The mirror-galvanometer with its needle and mirror of a grain or two hung by a single fibre of silk, and its long mass-