

and also to those who attack "Darwinism" in educational circles in America.

*The Jubilee Book of the Girls' Public Day School Trust, 1873-1923.* By Laurie Magnus. Pp. x+204+4 plates. (Cambridge: At the University Press, 1923.) 5s. net.

THE Girls' Public Day School Trust is to be congratulated on the excellence of the book in which Mr. Laurie Magnus has commemorated the jubilee of its foundation. It recalls, as did the recent Cambridge Local Lectures jubilee celebrations, the lofty educational aims and the strenuous and efficient endeavours to embody them in practical measures that marked the early seventies of the nineteenth century. About the middle of the century began a revolt against the false ideals and incompetence of the girls' schools (the "select establishments for young ladies") of the period, and an insistent demand for a return to more robust and honest standards. This movement, under the guidance of Mrs. William Grey and others, led to the formation of the "Women's Educational Union," the G.P.D.S. Trust, and the Teachers' Training and Registration Society. The Trust stood for "the training of the individual girl, by the development of her mental and moral faculties, to understand her relation to the physical world around her, her fellow-beings, and God, and to know and perform the duties which arose out of those relations." "The chief object of education should be," they held, "while fitting boys and girls for the tasks and duties of practical life, to preserve intact for them . . . as much as may be of childlike faith, of intellectual reverence and homage, and of gaiety and truthfulness of mind." The story of the several schools is full of interest. Thirty-eight in all, each with its own special features, they became nurseries of genuine culture; and this was due alike to the well-directed initial impetus given by the founders, to the discrimination exercised in the choice of the heads, and to the large measure of freedom from interference and red-tape which they enjoyed.

*Dynamics.* By Prof. Horace Lamb. Second edition. Pp. xi+351. (Cambridge: At the University Press, 1923.) 12s. 6d. net.

THE first edition of Prof. Horace Lamb's "Dynamics" was issued in 1914, and reprinted with additional examples in 1920. The fact that a new edition is now called for can be well understood by all teachers and students who have had occasion to use the book. Little change has been made in this second edition, except for the substitution of different examples in the polar co-ordinate section of the chapter dealing with central forces, and for the introduction of more than forty additional "miscellaneous" examples at the end of the book.

Perhaps we may use this opportunity to remark that Prof. Lamb's order of treatment would be changed by some teachers. The interpolation of the chapters on rigid dynamics in the midst of the particle dynamics course does not seem to be advantageous. Further, while agreeing with the author's remarks on pp. 152-3, we nevertheless think that d'Alembert's principle possesses one great advantage: it makes clear that in the case of a rigid body there are just sufficient equations of motion to deal with the six degrees of

freedom. Prof. Lamb's book will remain a favourite text-book at British universities for many years to come.

S. B.

*Fluorescenz und Phosphorescenz im Lichte der neueren Atomtheorie.* Von P. Pringsheim. Zweite verbesserte Auflage. Pp. viii+228. (Berlin: Julius Springer, 1923.) 7s. 1d.

THE first edition of this book appeared two years ago. It was written during the author's internment in Australia on account of the War, and its object was to collect together the known facts of fluorescence and phosphorescence and to show to what extent Lenard's theory agreed with and explained those facts. In this present edition, many new observations are cited which support that theory. According to it, when radiation of frequency  $n_1$  falls on a phosphorescent molecule, it is absorbed by a "resonator" having the same frequency, which in turn gives its energy up to a "photoelectron," and this is driven from its atom. It is immediately captured by another atom of the same molecule, with which it remains associated for a more or less lengthy period before the thermal oscillations of the molecules bring it into a configuration from which it can return to its original atom. In doing so it sets free radiation of frequency  $n_2$ , which is in turn absorbed by a resonator of that frequency and given out as phosphorescent light. It does not appear possible at this stage to specify what parts of the nuclear atom furnish the resonators and photo-electrons of Lenard's theory.

*Practical Control of Electrical Energy.* By A. G. Collis. (Oxford Technical Publications.) Pp. xii+160. (London: Henry Frowde and Hodder and Stoughton, 1923.) 10s. 6d. net.

THIS book contains technical data which will be useful in the design of electric machines and apparatus. The requisite mathematical reasoning has been simplified so far as possible. We have noticed, however, several misprints in the equations (p. 23). In discussing the measurement of potentials by instruments based on the hot-wire principle, it is stated that owing to their low inductance the current is in phase with the potential difference. In making this inference it is assumed that the resistance of the hot-wire instrument is practically constant over the half-period of the applied potential difference. It would be well to mention this. The chapter on protective gear is useful, but the notes on lightning arresters are too brief to be of much value.

*Practical Physical Chemistry.* By Prof. Alexander Findlay. Fourth edition, revised and enlarged. Pp. xvi+298. (London: Longmans, Green and Co., Ltd., 1923.) 7s. 6d. net.

THE principal features of the new edition of Prof. Findlay's "Practical Physical Chemistry" are the introduction of additional experiments on hydrogen-ion concentration and of a number of experiments on colloids. Although the figure of the Pulfrich refractometer by Zeiss is retained in the text, the improved instrument of English manufacture (which formed the subject of a recent article in the new *Journal of Scientific Instruments*) is referred to in a footnote.