

extent of the corrosion. The effect of humidity and of the formation of deliquescent products is clearly brought out, and the results are of undoubted value. In practice, local attack due to the concentration of the effects on a small portion of the exposed surface must play a large part in determining the life of a material, general corrosion having little effect.

*La diffusion moléculaire de la lumière.* Par Jean Cabannes, avec la collaboration d'Yves Rocard. (Recueil des Conférences-Rapports de Documentation sur la Physique, Vol. 16.) Pp. viii + 326. (Paris: Les Presses Universitaires de France, 1929.) 65 francs.

THE scattering of light by small particles observed by Tyndall was studied exhaustively by Lord Rayleigh, who showed in 1871 that each particle, assuming its dimensions small in comparison with the wave-length, sets up a secondary disturbance which travels in all directions. In 1899, Rayleigh concluded that the blue colour of the sky could be accounted for by the scattering of light by molecules of the atmosphere. In the book under notice, the author seeks to establish a coherent theory of the diffusion of light in the interior of a fluid on the assumption that the incident wave excites in each molecule a movement proportional to the field; these little induced doublets vibrate with the frequency of the exciting wave and in their turn radiate diffused light.

Although the idea of such molecular diffusion is comparatively modern, we are confronted to-day with an immense field of experimental and theoretical investigation. The author has accordingly confined his attention almost entirely to the diffusion of ordinary light in the interior of pure transparent fluids, and only in an appendix does he refer to the Raman effect. He has carried out a critical examination of the experimental results and also of the theoretical formulæ. In the latter part of this work he has had the assistance of M. Rocard, who contributes two chapters dealing with the character of the diffused light as the critical point is approached, and with the study of the 'critical opalescence'. The volume should be of great service to future investigators.

*Discoveries and Inventions of the Twentieth Century.*

By Edward Cressy. Third edition, revised and enlarged. Pp. xxi + 476 + 177 plates. (London: George Routledge and Sons, Ltd.; New York: E. P. Dutton and Co., 1930.) 12s. 6d. net.

As the successor to Routledge's "Discoveries and Inventions of the Nineteenth Century", Mr. Cressy's book has enjoyed considerable popularity. First published in 1914, a second edition appeared in 1922, and to this further matter has now been added, and the number of illustrations has been increased. No one, perhaps, realises the difficulty of attempting to deal with modern discoveries and inventions in one volume, or of keeping such a volume up-to-date, more than the author himself.

Mr. Cressy's book is written in the first place for the non-technical reader, but we imagine many

engaged in scientific work and engineering will find its chapters of great interest. The ground covered is mainly that of power generation and transmission; transport by land and sea and air; communication by electricity, and such developments of chemistry and physics as may be included under the titles—soils and crops; the borderland of modern chemistry; applications of photography; radium, electricity, and matter. Other subjects to which chapters are devoted are the electric furnace and refrigeration.

Included in the text are many diagrams and photographs, the former being by far the more valuable to those wishing to know the why and wherefore. Whether the non-technical reader can understand the principle of the gyroscopic compass or the Ljungström steam turbine from the drawings given we are doubtful. In the chapter on gas, petrol and oil engines, the Fullagar engine is unfortunately shown upside down, while the statement that the internal combustion engine used in ships is not reversible needs correcting.

*The Conduction of Electricity through Gases.* By Dr. K. G. Emeléus. (Methuen's Monographs on Physical Subjects.) Pp. x + 94. (London: Methuen and Co., Ltd., 1929.) 2s. 6d. net.

THE phenomena of the electric discharge in gases are very striking in character and appeal strongly to those interested in physics. Besides, they have received numerous technical applications. But the subject is in reality complicated from an experimental point of view and is one which from a theoretical point of view is incompletely understood. The nature of the discharge is due to the occurrence of many elementary processes (the most important of which are ion formation and the excitation of light) linked together in a way which is obscure. Dr. Emeléus has presented fairly the present stage of development of the subject, and, therefore, we welcome his little work even though we may regret that he has not had more space to develop his views; for then the book would have been more readable as well as more informative. But in compensation it is very cheap, and since, within its limits, it is extremely well written, we have no hesitation in recommending it.

H. W. B. SKINNER.

*The National Benzole Association. Standard Specifications for Benzole and Allied Products, 1929.*

Pp. xiii + 145. (London: National Benzole Association, 1929.) 6s. net.

MULTIPLICITY of standard processes has been avoided by the whole-hearted adoption by the National Benzole Association of those portions of the "Standard Methods for Testing Tar and its Products" (see NATURE, April 26, p. 631) appropriate to the examination of benzene, toluene, xylene, and naphtha. In addition, there are given for various commercial grades of these materials, fourteen specifications, applicable only when the particular methods described are used. Allowance is made for the addition of any further specifications or methods that may be made from time to time.

B. A. E.