reading. The author commences by bringing to the reader's notice the properties of the sensitive plate, the principles involved in its preparation and use, dealing further on with the several rays which influence it, namely chemical, light, electrical, mechanical, &c The Röntgen rays are, of course, elaborately dealt with, and their action on the photographic plate, as far as is known, is discussed.

Another chapter is devoted to the old experiments of Niepce de Saint-Victor, which were made in 1857 with the object of investigating whether light could be stored up in bodies apart from the phenomena of phosphorescence and fluorescence: several interesting abstracts are here made from the originals. The succeeding chapter deals with the more recent experiments made on the above lines, while the subject of the last one consists of the precautions which must be taken in the preservation and employment of photographic plates.

Luce e Raggi Röntgen. By Oreste Murani. With a preface by Prof. R. Ferrini. Pp. x + 392. (Milan: Ulrico Hoepli, 1898.)

15 *Lezioni Sperimentali su la Luce.* By A. Garbasso. Pp. iv + 259. (Milan: Office of *L'Elettricitá*, 1897).

PROF. MURANI'S volume upon light and Röntgen rays does credit to Italian science. It may be described as a work on light with special reference to Röntgen rays. The general phenomena of light—such as reflection, refraction, diffraction, decomposition, polarisation, &c., are first explained, and then the character of the electric discharge in rarefied gases and high-vacuum tubes are described. This naturally leads to Lenard's and Röntgen's investigations, and once launched in the sea of X-ray literature the author has no difficulty in finding material upon which to exercise his powers of composition. The work of English investigators is frequently referred to, and an attempt has been made to include the best of what has been done and thought in connection with Röntgen rays. The illustrations are fairly numerous (there are 157, and 15 plates), but they are no better than those published in other works on the same subject. As is common in continental publications, the book is published without an index.

Dr. Garbasso's book contains a number of experiments on light considered as an electro-magnetic phenomenon. It is a little volume from which teachers and demonstrators of physics may obtain information upon many experiments, and which gives readers of Italian an instructive view of electric oscillations. The first four chapters of the book are devoted to descriptions of the fundamental principles of electricity and magnetism, and the remainder is devoted to the work of various investigators of electric waves.

Waste and Repair in Modern Life. By Robson Roose, M.D., LL.D., F.R.C.P. Edin. Pp. 364. (London: John Murray, 1897.)

THE book before us consists of twelve essays which have already been published elsewhere, and are now brought up to date and collected, making a thickish book. The subject-matter of these essays is very various, the title of the book being apparently taken from the first two essays. Amongst others the following questions are considered:—The art of prolonging life; the alcohol question; fasting and its physiology; the London water supply, &c. The book cannot be regarded as a serious contribution to any of the subjects dealt with, and will hardly appeal either to the medical profession or to the readers of NATURE. It is, however, written in a chatty style, and that section of the public which is interested in the acquisition of medical superficialities will find it certainly readable, and probably instructive.

F. W. T.

Missouri Botanical Garden. Eighth Annual Report. Pp. 236. (St. Louis, Mo.: Published by the Board of Trustees of the Missouri Botanic Garden. London: W. Wesley and Son, 1897.)

THE scientific papers in this report of the Missouri Botanical Garden are as follows:—"The Mosses of the Azores" and "On some Mosses collected in Madeira by William Trelease in June 1896," by M. J. Cardot; and "Botanical Observations on the Azores" by the Director of the Garden, Mr. W. Trelease (see NATURE, p. 551). As there is a prospect that the sum at present available for the purposes of the Garden will be increased, the Director has drawn up a general plan for the extension and development of the institution, to bring it into full conformity with the intentions of its founder, Henry Shaw. One of the clauses in Mr. Shaw's will stated "that scientific investigations in Botany proper, in vegetable physiology, the diseases of plants, the study of the forms of vegetable life, and of animal life injurious to vegetation, experimental investigations in horticulture, arboriculture, &c., are to be promoted." This clause has never been lost sight of, and a number of scientific papers have been prepared by Mr. Trelease and his assistants. The new scheme provides further facilities for research work. "I hope," says the Director, "to live to see the income of the Garden so ample that it shall claim among its regular employees men recognised as the equal of any in the country, if not in the world, in horticulture, vegetable physiology, morphology, paleo-botany, phanerogams, pteridophytes, bryophytes, fungi, algæ, and lichens. Ultimately it is very possible that the money available for research work will admit of the employment in the same manner of an entomologist, and there is a possibility that in coming generations other branches of zoology may be represented." It is to be hoped, for the sake of scientific progress, that the plans which are at present only on paper will all be materialised in the near future.

Year-Book of the United States Department of Agriculture for 1896. Pp. 686. (Washington: Government Printing Office, 1897.)

THIS Year-Book is in many respects a unique publication. Consisting of a bound volume of more than six hundred pages, published annually at Government expense in an edition of half a million copies, and for free distribution, it is a standing testimony to the encouragement given to scientific agriculture in the United States. The first part of the volume contains a brief general report on the operations of the Department of Agriculture, but this only occupies fifty pages, the remaining portion being taken up with papers, by agricultural experts, discussing the result of investigations in agricultural science and farm practice. In imparting this information, technical language is avoided, so far as possible, in order that the papers may be easily understood by the class for whose interests they have been prepared. Among the subjects dealt with are: the extermination of noxious insects by bounties, the use of steam apparatus for spraying, influence of environment in the origination of plant varieties, potash and its function in agriculture, irrigation on the great plains, insect control in California, diseases of shade and ornamental trees, migration of weeds, agriculture education and research in Belgium, olive culture in the United States, and ambrosia beetles. Several of these papers have already been noticed in NATURE, having been received in the form of excerpts from the present volume.

Practical farmers in the United States, and students of agriculture and related sciences, should be grateful to the Government which so freely publishes information of the kind contained in this Year-Book.