

Our Bookshelf.

An Agricultural Atlas of Wales. Made on behalf of the Institute for Research in Agricultural Economics, University of Oxford, by J. Pryse Howell. Pp. iii + 23 maps + 3 maps in pocket. (Southampton: Ordnance Survey, 1921.) 5s. net.

It is to be hoped that the enterprise of the Ordnance Survey in publishing an agricultural atlas of Wales will be rewarded sufficiently to facilitate the publication of similar atlases for regions of England. Mr. J. Pryse Howell has worked at agricultural surveys for years at Aberystwyth and at Oxford, and the present atlas does considerable credit to his care and industry. It is based on parochial returns, and consists of twenty-three maps, one for each agricultural product. There are also three loose maps in colour giving the orography, geology, and rainfall of Wales, and as the agricultural maps are on translucent paper they can be superimposed on the loose maps in order to trace correlations.

It is a pity that the revision of Welsh geology is not yet sufficiently complete to give a better representation of the stratigraphy of West Wales based on the work of Prof. O. T. Jones and the correlation with geological facts. The correlations traceable often depend more on the drift than on the solid geology, though these maps of Wales are mostly of a kind simpler than one would find in England, for in Wales the greater part of the surface is impervious soil on hard rocks, and agriculture is dominated by orographical conditions which so greatly influence rainfall. In England the influence of soil would be more complex.

The agricultural relations of the belt between the Vale of Clwyd and the Dee at Corwen, of the lower Montgomeryshire Severn, the parallels between pigs and potatoes, and many other points, stand out clearly, while the curious distribution of lucerne, sainfoin, clover, and grasses under rotation prompts a number of questions. The atlas should be used widely by agriculturists and economists, by persons interested in local administration, and by teachers, especially teachers of geography.

The Silver Bromide Grain of Photographic Emulsions.

By A. P. H. Trivelli and S. E. Sheppard. (Monographs on the Theory of Photography from the Research Laboratory of the Eastman Kodak Co.) Pp. 143. (New York: D. Van Nostrand Co.; London: Kodak, Ltd., 1921.) 15s.

THE research laboratory of the Eastman Kodak Co. has in preparation a series of monographs on the theory of photography. The time is ripe for the presentation in a connected sequence of the work done and the results obtained, for these are very numerous and very scattered. The present volume is the first issued, and presumably may be regarded as a sample of those that are to follow. The company, the laboratory, and the authors are to be congratulated in that they have made so good a beginning. The authors have been engaged for some years in the practical study of the subject with which they deal, and they give some results that have not been published before. A study of the relations that exist between the sizes of the grains and their photographic

properties is reserved for a future monograph, though it is by no means neglected in the present treatise. The first half of the volume deals with the influence of ammonia on photographic emulsions and a theory of ripening; von Weimarn's theory and the determination of the dispersity of silver bromide precipitates; accessory factors influencing the dispersity of silver bromide emulsions; crystallisation catalysis; and capillarity and crystalline growth. The intimate relation between grain structure and photographic properties is, however, fundamentally a matter of crystallographic investigation, and the remainder of the volume is devoted to this matter in five chapters. The authors state that "when the experimental conditions regulating the three primary factors, (1) dispersity-distribution, (2) recrystallisation, and (3) sorption (both adsorption and desorption), are completely known, scientific control of the characteristic curve—i.e. of speed, latitude, and density—will be possible." The book is copiously illustrated and well indexed; it has many summaries, all necessary references, and an extensive bibliography. C. J.

Indian Science Congress: Handbook for the Use of Members attending the Ninth Meeting to be held at Madras from the Thirtieth of January to the Fourth of February, 1922. Pp. x+165. (Madras: Capt. Clive Newcomb, Chemical Examiner, 1921.)

THE Indian Science Congress has held annual meetings in various parts of India yearly since 1914 much on the lines of the British Association for the Advancement of Science, and the handbook issued for this year's meetings contains a number of interesting articles by experts, including a brief history of Madras and its Corporation, descriptions of the museum and Connemara Public Library, the Madras Harbour, the new city waterworks and the chlorination purification of the supply, and an interesting account of places of historical interest within twenty miles of the city. General education in Madras is dealt with by the principal of the Presidency College, and medical education by the principal of the Medical College. The remainder of the little book is occupied with accounts of scientific work in the Presidency in different branches of knowledge, and includes the work of the King Institute of Preventive Medicine, situated several miles from the city and concerned chiefly with hygiene, and an interesting account of the valuable practical investigations being carried out at the Agricultural and Research Institute at Coimbatore by the Director of Agriculture. Contributions on prehistoric archæology, the anthropology of Southern India, marine zoology, the geology of Madras, and biological work there, complete an instructive handbook which is very suitable for the purpose for which it has been designed.

L. R.

Treatise on Fractures in General, Industrial, and Military Practice. By Prof. J. B. Roberts and Dr. J. A. Kelly. Second edition, revised and entirely reset. Pp. x + 755. (Philadelphia and London: J. B. Lippincott Co., 1921.) 42s. net.

THE authors of this volume have set out, as they claim in their preface, to present a lucid view of the subject