

The Social Sciences

A Problem Approach. By Prof. Paul A. F. Walter, Jr. Pp. vii+357. (New York: D. Van Nostrand Co., Inc.; London: Macmillan and Co., Ltd., 1949.) 20s. net.

ONE of the chief problems which arises in teaching the social sciences is that they all deal with separate aspects of the same subject-matter, namely, the behaviour of man in society. What is now termed 'the multi-disciplined approach' in the United States has brought several of these sciences into co-operative relationship at the higher level of postgraduate study and research, particularly so far as sociology, social psychology, psychiatry and social anthropology are concerned. The undergraduate student of any single social science, however, is still left either in the squalid isolation of a single and very incomplete science, or floundering in any attempt he and his teachers may make to discover the boundaries between his own specialism and those of others, or to determine the extent to which the findings of each throw light on the problems of all.

Prof. P. A. F. Walter has courageously tackled the task of outlining the contributions which anthropology, economics, history, political science, social psychology and sociology have made to the study of the ways in which social problems come into being and have assumed an ever-growing measure of importance in the life of the ordinary man. Using what he calls the "Problem Approach" as the centre of gravity of his work, he has been able to provide a stimulating discussion of the points of view of each of the social sciences, and it is particularly suited to the needs of the elementary student.

A further merit of the book lies in the fact that it is intended to interest the student in principles and methods rather than to serve as a compendium of information, like so many other elementary textbooks. The assumption is that the teacher should supplement it with a body of material applicable to problems of direct interest to his students. If this is done, an excellent first-year course could be given which would reduce substantially the intellectual hoynicism which is deplorably common among students of the social sciences. T. S.

Multiple-Beam Interferometry of Surfaces and Films

By Prof. S. Tolansky. (Monographs on the Physics and Chemistry of Materials.) Pp. viii+188. (Oxford: Clarendon Press; London: Oxford University Press, 1948.) 18s. net.

AS the first of a new series of monographs, summarizing the recent results of academic or long-range research on the physics and chemistry of materials, this volume describes the optical interference techniques developed since 1942 by Prof. S. Tolansky.

The first four chapters explain the production of very sharp monochromatic Fizeau fringes between highly reflecting silver films of low absorption, spaced only a few wave-lengths apart, illuminated normally by parallel light. These fringes, when produced between an optical flat and a silvered crystal surface, give contour lines which enable differences in surface-level to be measured to 5 Å. or better. Crossed Fizeau fringes, photographed by double exposure for two slightly different inclinations between the surfaces, and fringes of equal chromatic order obtained with white light and a spectroscopic, are powerful exten-

sions of the basic technique. Prof. Tolansky describes the application of these methods to the surface topography of crystals, and also deals with a number of other interesting results such as Donaldson's colour filters, the demonstration of phase-change on reflexion at a metal surface, and the effect of birefringence in mica films.

While the book is primarily intended for the research physicist, it gives an excellent account of the general theory of thin-film interference which should be valuable to students. The half-tone reproductions of interferograms are very good.

G. R. NOAKES

Advanced Chemical Calculations

By Sylvanus J. Smith. Pp. viii+454. (London: Macmillan and Co., Ltd., 1950.) 17s. net.

BY "advanced" the author means "beyond the matriculation stage". Accordingly, fifteen of the twenty-one chapters deal with calculations concerning atomic weights, the partition law, mass action, electrochemistry, volumetric analysis, problems in organic chemistry and such other subjects required for university scholarship, intermediate science and similar examinations. Except for a few in Chapters 5 and 7, all problems in this section (Chapters 1-16) are meant to be solved without the use of the calculus. In Chapter 7 the author introduces partial differentiation, and later on makes frequent use of it, especially in Chapters 17-21, which deal with maximum work, the second law of thermodynamics, the Gibbs-Helmholtz equation, concentration cells, standard electric potential and Nernst's heat theorem. The problems treated in these last six chapters are of the type set in honours degree papers. Mr. Smith begins each chapter with not one, but several examples, worked out step by step, with brief running explanations which betoken the experienced teacher. To say that in the whole book there are 193 of these illustrative examples is to give some idea of the labour given to its making. Each chapter ends with an abundance of varied problems for solution. In addition, there are two long sets of miscellaneous numerical questions. An appendix contains a brief discussion of the significance of partial differentiation, several tables including one of logarithms, answers to all the numerical questions and an index. Mr. Smith has done a good piece of work and has produced a book valuable alike to students and teachers. G. F.

Synthetic Methods of Organic Chemistry

A Thesaurus. By W. Theilheimer. Vol. 2. Translated from the German by A. Ingberman in collaboration with the Author. Pp. xii+324. (New York and London: Interscience Publishers, Inc., 1949.) 60s.

THE character and scope of this work, and its position among serial publications on organic synthetic methods, have been outlined in an earlier issue of *Nature* (158, 287; 1946). The German edition of Vol. 2 was published in 1948. In this English translation the author acknowledges his indebtedness to various American industrial firms which have contributed towards the cost of the work because of its value to the chemical industry. There will be no English editions of Vols. 3 and 4; but an English key will be appended to the index of each of them. The English edition of Vol. 2 contains a cumulative index of thirty-eight pages, covering Vols. 1 and 2. From Vol. 5 onwards it is proposed to publish an English version of each issue. J. R.