

equipped for oceanographical work. Dr. Filchner hoped also to set up a winter station in the far south as a base for the exploration of the ice-cap.

After some preliminary work on the east of South Georgia a spring voyage was made to the little-known South Sandwich group. Heavy seas prevented a landing, but some useful observations were made. On the return of the ship to South Georgia the voyage into the Weddell Sea was begun. Without any great difficulty a high latitude was reached, and Luitpold Land was discovered between lat. 76° and 78° S. This is clearly an extension of Coats Land: the link between the two was discovered by Shackleton three years later. An ice-barrier, called now the Weddell barrier, was found in lat. 78° S. The expedition followed its edge in a north-westerly direction for about 100 miles. Pack-ice barred further progress. This barrier would appear to be comparable with the Ross barrier, but the Germans did not penetrate to the south. Several ice-free nunataks, some ten to fifteen miles from the edge of the ice-cap, unfortunately were not visited. Their examination would have thrown light on the structure of Coats Land.

Considerable space is occupied with an explanation of the failure to find a suitable site for winter quarters and the disaster that befell the hut built on barrier ice in Vahsel Bay. Eventually the plan of wintering was abandoned, and the ship stood northward. Beset in the pack, she drifted to the north during the winter, an experience comparable with that of Shackleton's *Endurance*, but was released uninjured in the spring and returned to South Georgia. The book gives a good account of the oceanographical work, which was important, and is well illustrated with photographs and maps.

R. N. R. B.

The Chemistry of Paints, Pigments and Varnishes. By J. Gauld Bearn. Pp. x+277+11 plates. (London: Ernest Benn, Ltd., 1923.) 30s. net.

MR. BEARN states in the preface to his book that it is addressed to works managers, students, those engaged in the industry, analysts, and architects. Clearly such a wide field could not be covered satisfactorily in one volume, although each type of reader will find in it something of interest and value. The inevitable result of this ambitious programme is that the analytical and manufacturing details are too sketchy to be of much service to specialists, and the student will find too much of the book taken up by elementary chemistry, the nomenclature of which is generally antiquated and not used consistently. Although the author warns us on p. 214 not to confuse "benzene" with "benzine," yet he does so himself throughout the book. The size of the volume is unnecessarily increased by dividing the text into numerous small paragraphs, sometimes mere sentences, and there is much repetition. Thus, on p. 29 we are told no less than three times that barytes is an "ideal adulterant" for white lead, and this is repeated in other places. The style on the whole is good and concise, but far too many errors have been overlooked in the proof-reading. Such statements as that amyl alcohol "rotates the flame of polarisation" should not have escaped even a casual reader, yet they are numerous. Many of the line drawings of chemical

apparatus are incorrect and show immediately obvious faults. Thus, the Schrötter apparatus on p. 32 has no outlet for gas, the Soxhlet apparatus on p. 22 would not work, and the Liebig's condenser on p. 197 is fitted up in the way all students are taught not to adopt. The half-tone illustrations are well produced but teach nothing as to the working of the plant. Mr. Bearn's book is presumably intended to be useful to business men not connected with the industry, and to give a bird's-eye view of the subject.

Volumes moléculaires: Applications. Par Prof. A. Leduc. Pp. 120. (Paris: Gaston Doin, 1923.) 8 francs.

DURING the past thirty-two years, Prof. Leduc has conducted extensive researches on the physical properties of gases, based on experiments of a high order of exactitude. These researches are contained in memoirs published in the *Annales de Chimie et de Physique* and in the *Journal de Physique*. The present publication is a brief summary of the main results, and deals with such topics as atomic weights, dissociation, internal pressure, the velocity of sound in mixtures of gases and vapours, specific heats, etc. The calculations are based on a modified form of Boyle's Law, and on a form of the reduced equation of state of a gas slightly different from that of Van der Waals and also from the more complicated form of Clausius. The author uses the "principle of corresponding states" enunciated by himself in 1892, namely, that "in corresponding states, the relative molecular volumes of all gases are equal": the relative molecular volume is the quantity Mpv/RT , where M is the mass of gas having pressure p and volume v at absolute temperature T , and R is the usual universal constant.

S. B.

Chance, Love, and Logic: Philosophical Essays. By the late Charles S. Peirce. Edited with an Introduction by Morris R. Cohen. With a Supplementary Essay on the Pragmatism of Peirce by John Dewey. (International Library of Psychology, Philosophy, and Scientific Method.) Pp. xxxiii+318. (London: Kegan Paul and Co., Ltd.; New York: Harcourt, Brace and Co., Inc., 1923.) 12s. 6d. net.

THIS is a manufactured book with a misleading title. The author, who died a few years ago (the book does not contain a biographical notice), was a distinguished mathematician who contributed numerous articles of a general and popular philosophic interest, mostly book reviews, to the journals of his time. Neither the selection of the essays in the volume nor the title of the volume were in any way whatever intended by the author for the form they have received.

Die Atome. Von Prof. Jean Perrin. Mit Autorisation der Verfassers Deutsch; herausgegeben von Prof. Dr. A. Lottermoser. Dritte erweiterte Auflage. Pp. xx+213. (Dresden und Leipzig: Theodor Steinkopff, 1923.) 5s.

ALL that need be said of this German translation of Prof. Perrin's book is that it is less complete than the new English translation which was reviewed in *NATURE* of July 14, 1923, p. 52, and has therefore nothing to recommend it to English readers.