special praise is due to him for his unusually stimulating and valuable chapters on experimental embryology and the determination problem. The book as a whole is worthy of the widest possible circulation, and this, no doubt, it will attain.

The general outcome is not, happily, any premature organismic theory' of life, for the time has not yet come for conclusions. But throughout the book Dr. Bertalanffy emphasises that the old mechanism-vitalism controversies are now quite fruitless since the so much disputed 'irreducibility of biological categories' merely means, when analysed, that the configurations of matter which we call biological show a form of organisation or order not met with elsewhere. It is for us to investigate the forces involved in this organisation, the rationale of this order—not, as some thinkers wish, to accept it as axiomatic (NATURE, 131, 458, 664; 1933). The irreducibility of biological categories has nothing to do with the entry of vitalistic concepts; the laws of the nematic or smectic state are similarly 'irreducible' to the rules which hold good for common isotropic liquids. The service of vitalism in past days was that it continually directed attention to the real complexity of the phenomena; Dr. Bertalanffy has now liquidated the old firm, and performs the same service without the old obscurantism.

JOSEPH NEEDHAM.

Short Reviews

Evaporating, Condensing and Cooling Apparatus: Explanations, Formulæ and Tables for Use in Practice. By E. Hausbrand. Translated from the second revised German edition by A. C. Wright. Fifth English edition revised and enlarged by Basil Heastie. Pp. 503. (London: Ernest Benn, Ltd., 1933.) 25*s.* net.

THIS book is a new edition of a work that has become a recognised classic in the literature of chemical engineering. Heat transmission is a very wide subject, on which some of the extensive work published is exceedingly controversial, and the inquirer frequently has difficulty in finding collected and co-ordinated information. This he will find supplied with authority in the familiar "Hausbrand".

The large number of empirical formulæ and useful tables, obtained from experiments on full-scale plant, make the book valuable to the practical man faced with problems of evaporation and distillation. Not only are evaporators and condensers treated exhaustively, but considerable space is also allotted to the study of the flow and heat transmission of fluids in pipes, and to vacuum pumps. The latest edition contains an added chapter on heat exchangers in modern industrial practice, in which the new plate type is described; it also embodies some of the more recent additions to the literature.

There appear to be no serious omissions, but a brief summary of the submerged combustion process would have been an interesting addition, even if as yet its practical importance is scarcely established. Heating with hot oil is perhaps dismissed rather too briefly. The book is not a digest of the literature but is clearly the work of practical men and, as such, it is to be recommended particularly to all designers and users of evaporating plant. Students of chemical engineering will also find it a very valuable reference book.

J. H. P.

Street Traffic Flow. By Henry Watson. Pp. xii+395+13 plates. (London: Chapman and Hall, Ltd., 1933.) 31*s.* net.

THE present work includes the general characteristics of traffic flow, the influence of different types of vehicles, of different kinds of crossings, with suggestions for mitigating the effect of obstructions and improving the flow generally It deals also with lighting signal systems, with parking, street accident statistics, accident prevention, and there are general chapters on transport management and policy, and layout of streets and cities.

A particularly valuable feature of the book is the large number of illustrations depicting all kinds of traffic under all sorts of conditions in all varieties of streets, broad and narrow, straight and winding, obstructed and clear, together with numerous diagrams to elucidate the text. The author has taken great pains to present a mass of useful and interesting information in a clear and concise style. So far as we know, there is no other book of like compass dealing with this extremely important subject, and the work should therefore prove invaluable to local authorities, transport companies, the police, and indeed to all who are in any way or in any capacity connected with the complicated intricacies of street traffic. The private motorist and other individual users of the road will also find much to interest them in these pages.

The Subject Index to Periodicals, 1932. Issued by the Library Association. Pp. x+270. (London: The Library Association, 1933.) 70*s.*

THE editor, Mr. T. Rowland Powel, and his assistants have shown remarkable energy in preparing and publishing this subject index to the periodicals issued in 1932 ten months after the end of the year. The value of an index of this kind is greatly enhanced when it can be brought out with promptitude. At the same time it would