its members research workers in the fields of several biological and mechanical sciences and it was the former who contributed to the symposium, which was the second held by the society.

Half of the papers are by psychologists and the volume properly opens with a challenging definition of fatigue by Sir Frederic Bartlett :

" Fatigue is a term used to cover all those determinable changes in the expression of an activity which can be traced to the continuing exercise of that activity under its normal operational conditions, and which can be shown to lead, either immediately or after delay, to deterioration in the expression of that activity, or, more simply, to results within the activity that are not wanted."

Although no other contributor attempts to define the term, almost all of them in fact use it in a sense compatible with this definition. It is this clarity of view and the penetrating exposition of psychological criteria of fatigue which follow from it that make the subsequent chapters seem relatively pedestrian. In fact they are not, but are confined mainly to descriptions of experimental anatomical, physiological, and psychological researches for the most part new, and never before so accessibly presented.

The diversity of disciplines is reflected in the wide range of topics covered, from tropical fatigue as a result of months of residence in tropical areas, to detailed changes in performance resulting from only one minute of psychologically exacting work. Because of the relative ease of objective measurement, it is clear that the physiologists are considerably in advance of the psychologists in this field. In particular many psychologists in this country will for the first time make the acquaintance of the work of E. H. Christensen, whose factory studies are models of applied physiology of interest to all concerned with problems of fatigue in industry. It is evident from this volume that physiologists have passed the stage of the development of techniques, and, when the activity is such that their techniques are applicable, we may expect a rapidly growing body of knowledge aimed at the alleviation of physical fatigue. The many different angles from which " psychological " fatigue is discussed indicate all too clearly that psychologists are still groping for something to measure and for something with which to measure.

Yet the value of this book is that it does bring together a variety of approaches and abundant and fascinating experimental data, and a word of thanks must go to the society for making it generally available.

R. CONRAD

Symposium on Human Factors in Equipment Design. The Ergonomics Research Society Proceedings, Volume II. Edited by W. F. Floyd and A. T. Welford. (Pp. 132 ; 17 figures. 21s.) London : H. K. Lewis. 1954.

The type of physiology which the medical student is usually taught does, in fact, bear some relationship to real life in so far as he learns something of the response of the human being to changes in the environment ; but in most of our medical schools he is still taught far too

much of the minutiae of the anatomy of death, and psychology he is usually not taught at all.

In the last few years, notwithstanding its queer name, the Ergonomics Research Society has succeeded in bringing together anatomists, physiologists, and psychologists, in relating their three sciences to the practical problems of equipment design, and, in so doing, has given a fillip to a fused form of human biology. As a result of the last war, all three armed forces are very active in this field and have strong links with the Medical Research Council and the universities. In this, the Services are at least a generation ahead of most of private industry, whose idea of applied biology tends to be limited to first aid, the treatment of petty trauma, and pre-employment examinations.

The Ergonomics Research Society has now produced a second distinctively slim blue volume (the first was on fatigue), which is a collection of the best of the papers read at a symposium on the human factors in equipment design held in the University of Birmingham in 1951. It is a good selection of the papers read. There are 15 of them, and four are by visiting Scandinavian speakers at the symposium. The field covered includes the size and strength of the human body, its relationship (tinged either with pleasure or pain) to the chair on which it sits, the effect of climate, problems in the reading and understanding of indicator dials, and the general layout of equipment. Each paper is well documented with a reference list, and there are six good half-tone plates and many excellent diagrams.

This is an interesting and nicely turned out volume which is well worth a place on the industrial medical officer's shelf, and is much more readable than the medical tomes and official reports between which it may well be sandwiched. Moreover, it is well worth lending to the managing director himself to tell him, in an interesting way, what is going on in a field about which he may not yet have heard.

R. C. BROWNE

Mental Health and Human Relations in Industry. Edited by Thomas M. Ling ; Foreword by The Rt. Hon. Lord Horder. (Pp. xvi + 268 ; 11 figures. 21s.) London : H. K. Lewis. 1954.

The Social Psychology of Industry. By J. A. C. Brown. (Pp. 310. 2s. 6d.) London : Penguin Books Ltd.

Most of our time is spent either at home with our families, at work, or among the friends and acquaintances of our leisure. In each environment it is probably the people and our relationships with them which matter most to us and which, of all the aspects of our day-to-day existence, are most likely to affect our mental health. The psychiatrists have for the most part concentrated upon the family as a source of the satisfactions and provocations which affect the growing personality. Until recently the working and recreational groups have had scant attention from them as aetiological agents in mental illness, and have been considered, if at all, only in terms of therapy. Of these two groups the more critical and the more likely to cause trouble to the individual is the human environment at work.

Dr. Ling is a psychiatrist and medical director of the Roffey Park Institute of Occupational Health and of the Industrial Rehabilitation Centre. Dr. Brown is a psychiatrist with unique industrial experience. Their two books, therefore, should diagnose for us some of the human problems of industry and summarize what is known about the social and individual measures needed for their solution.

Roffey Park has changed and grown since its early post-war days and is now making a considerable contribution to the teaching of the social medicine of industry. A recent international course held there to consider mental health and human relations in industry suggested the need for "an account of current thought, teaching, and research, helpful in form and language to doctors, social workers, industrial managers, and entrants to industry from the universities". In his book Dr. Ling and eight other authors attempt to meet this need and, considering the magnitude of their task, they do it very well.

In the 14 papers which make up the book most of the important features of the human environment at work are discussed. They range from the theoretical industrial sociology of group structure and group tensions, through an able but over-simplified treatment of aggressive behaviour in industry, to the more down-to-earth topics of selection procedures and the effects of the physical aspects of the work situation. Three papers are devoted to a consideration of the roles of those usually saddled with the human problems of industry: the personnel manager, the industrial medical officer, and the psychiatrist. The rapidly broadening responsibilities of management in the solution of these problems are emphasized in a final paper on "The Implications for Management".

There is a brief note entitled "Society and Work" which is too short to do justice to the subject, and there are sections describing the teaching techniques which are in use and the rather slow progress of post-war research.

An important omission is an adequate discussion of economic factors in factory morale and in the worker-manager relationship. These factors and the related broad patterns of industry, of trade unionism, employer associations, and nationalization are very important, if only because they are the preoccupation of so many.

The bibliographies which follow each paper are well selected and form a most useful source of reference to the whole subject. The frequency with which the same not very significant works are referred to in successive papers serves only to illustrate the relative poverty of research in this field and the somewhat unsteady foundations of the subject. Fortunately this book is neither so complicated, so theoretical, nor so high powered as the imposing list of overseas editions and the introductory remarks led us to believe. We would have preferred a group of contributors chosen, perhaps, from a wider field than Roffey Park, but this parochialism is understandable and only slightly detracts from the usefulness of the work.

Dr. Ling has produced a book which will be of great value to all those working in industry.

While Dr. Ling aimed at the intellectuals and has produced a popular textbook, Dr. Brown has aimed at a much wider public and has produced a serious philosophical work. His book describes the decline in the social significance of work with the increasingly technical nature of industry. Through the ages this process has led to a situation where physical conditions in industry are often almost perfect but where "the need of the individual for status and function" remains unsatisfied and where the lunatic "rabble hypothesis" of every man for himself is generally accepted.

The author is concerned principally with the motivation and with the morale of the small groups of people whose relationships constitute the vital if informal organization of industry. He faces squarely the problem to which Sir George Schuster has recently drawn attention, that of the ease with which the increasingly powerful "social skills" of the industrial (or any other) psychologist may be perverted. He finds in industry good reasons for optimism and suggests that the help which is so often needed by sick industrial communities is not beyond the powers of ordinary people to give, nor is it the exclusive property of the consultant industrial sociologist.

Unfortunately the bibliography is so poor that many of the exciting references in this book cannot be followed. However, it is full of interesting material and will be very widely read.

The psychiatrist working in industry, like other doctors who work there, has got to prove to us that it is not uneconomic to base individual therapeutic services on anything but the family and the home. The material summarized in these books is not wholly successful in this plea. The physical hazards of the factory are plainly the responsibility of industry, but, for the industrial threats to mental health, responsibility is not so easily attributed. However, the need for social therapy in our industrial communities is the main concern of these books. In this they are wholly convincing.

E. MAURICE BACKETT

Textbook of Medicine. By various authors, edited by Sir John Conybeare and W. N. Mann. Eleventh edition. (Pp. xvi + 903; 40 figures, 31 x-ray plates. 37s. 6d.) London and Edinburgh: E. & S. Livingstone. 1954.

This well-known textbook has been extensively revised in order to bring it up to date, and extra articles upon the nephrotic syndrome, uraemia, the collagen diseases, and diseases of the intervertebral discs have been included. The text is strictly clinical in its character. It follows the classical pattern of description of diseases, those due to generalized infections, intoxications, or parasites coming first, followed by separate sections on diseases of the various systems of the body. Some of these sections have good, simple introductions on the anatomy and physiology of the relevant system, and on the ways in which they may be disturbed in disease. Occupational diseases are mentioned briefly under their appropriate systems. The descriptions are readable, concise, and quite sufficient for the student working for his qualifying examinations. In some cases they seem