intended primarily for American students, the almost total neglect of the rather divergent perspectives of much present-day European sociology is to be regretted.

JOHN H. GOLDTHORPE

ELECTRONIC DEVICES

Low Noise Electronics

By W. P. Jolly. (Introductory Science Texts.) Pp. vii + 149. (London: The English Universities Press, Ltd., 1967). 25*s*. net.

THIS is the first of a new series of introductory texts. Professor Jolly, who edits the series, and who is also the author of this book, writes in the foreword: "The books in this series are intended to be short and simply written so that they may be read in a few days by anyone with the general background of a second year student".

Although the book is called *Low Noise Electronics*, only one of the nine chapters and two of the six appendices are concerned particularly with electrical noise. Many topics have been squashed into this small book, and a superficial treatment is inevitable. The structure of the book and the selection of the material seem to have been motivated by an attempt to include references to as many modern electronic devices as possible. To devote four pages to applications of lasers (including punching a hole in a razor blade) seems to be an extreme example of seeking for topicality at the expense of neglecting the main theme of the book.

The treatment is almost entirely descriptive. When the occasional mathematical expression is given, the reader is usually referred to another book for the derivation. Throughout the text, the reader is confronted with strange new words and expressions. If he turns up the index, he will be referred back to the page on which he first saw them. For example, he meets for the first time on page 13: "elliptical orbits", "electron spin", "nuclear spin", "quantized"; on page 20: "crystal lattice", "electrons of opposite spin"; and on page 29: "effective mass", "hot electrons". Without previous knowledge of many of the terms, the reader must surely find much of the text incomprehensible. The scant illustration makes his task more difficult.

The book is well indexed, and it is possible that some busy engineers will find it useful for reference. They can, for example, turn up "Gunn effect", and be referred to original papers. Ironically, it is this all-embracing character of the book which is largely contributory to its failure to fulfil the professed aim of the author. I believe that this book falls well short of being a good introductory text.

J. G. THOMAS

YIELD AND FRACTURE

Physical Basis of Yield and Fracture

Conference Proceedings, Oxford, Sept. 1966. (Conference Series, No. 1). Pp. vii + 303 + 21 plates. (London: Institute of Physics and Physical Society, 1966.) 90*s*.

THIS volume contains collected papers on various aspects of fracture presented at a conference organized by the Stress Analysis Group of the Institute of Physics and the Physical Society. Although the meeting was originally billed as a national meeting, papers from the United States, Soviet Union, Australia and Japan were presented indicating the genuine interest in this field. During the past eight years, however, no fewer than four international conferences on this now over-exposed subject have been held (Swampscott, USA, 1959; Maple Valley, USA, 1962; Melbourne, Australia, 1963; and Sendai, Japan, 1965) all published in either book or journal form, and inevitably containing the main ideas on the subject. The Oxford meeting comes at the end of the line of meetings and too soon after Sendai for any substantially new ideas on fracture to have been produced. As a consequence, the book turns out to be a fairly insignificant volume, but with the editorial staff working valiantly in an attempt to give good value for money by including thirty-eight papers either in full or in summary together with reported discussion.

The main papers are grouped together in four sections under the chapter headings "Theory", "Metals", "Polymers" and "Miscellaneous Materials", respectively. The first small chapter deals with certain aspects of stress distributions associated with cracks in photo-elastic materials and with the dislocation approach to fracture nucleation and propagation. The second chapter contains several papers dealing with yield and fracture in mild steel or iron-based solid solutions, some interesting observations of ductile fracture in metals containing hard second-phase particles, and an electron metallographic study of stress-corrosion cracking in austenitic steels and titanium alloys. The third and longest chapter of the volume is concerned with fracture of polymers from both the microscopical and continuum viewpoints. Particularly interesting papers include fatigue fracture behaviour in both rubber and plastics, and a fracture mechanics approach to corrosion stress cracking in plastics. The fourth chapter contains a mixed collection of papers on various ceramics such as magnesium oxide, lithium fluoride and graphite, and one, rather out of place, on cleavage surface energy experiments in zinc; no discussion was offered in response to this paper even though the surface energy values obtained were extremely low and less than reliably derived values for the stacking fault energy.

Possibly the most useful feature of this book is that several experimental and theoretical approaches can be compared for a wide range of materials.

R. SMALLMAN

LANGUAGE BY COMPUTER

Introduction to Computational Linguistics

By David G. Hays. Pp. xvi + 231. (London: Macdonald and Co. (Publishers) Ltd., 1967.) 70*s*. net

IN his preface Mr Hays defines computational linguistics as "a body of techniques that make the computer an effective, workable tool for language processing"; and towards the end of his book, on the subject of automatic translation, he writes, "The problem is clearly one of engineering". Indeed it is clear throughout that when Mr Hays is faced with a new and intractable linguistic puzzle, his first reaction is to send a man out to hire a faster computer. It is not surprising then that although he devotes a whole chapter, for instance, to techniques for representing and handling grammars in a machine, he nowhere considers whether the types of grammar in question are adequate to describe the syntax of a natural language. In sum, the book is scarcely concerned at all with the linguistic side of computational linguistics, but only with the realization of the linguist's ideas in terms of tapes and disks and core store.

Moreover, it is notable that Mr Hays describes in detail virtually every aspect of the programmes with which he is concerned, with the sole exception that he neither compares their capabilities nor provides any examples of their results. Are there nowadays parsing algorithms capable of producing an output which is recognizably a sentence plus an assigned syntactic structure? Are there any examples of automatic translation fit to print? My own answers to these two questions would be "Yes" and "No" respectively, but it is curious that Mr Hays does not give any account at all of how well different systems work in practice.

Leaving aside the lack of linguistic theory, someone with a previous knowledge of computers entering the field