

## REVIEWS

*Programming business computers.* By D. D. McCracken, H. Weiss and T-H. Lee.

[Pp. 510. London: John Wiley and Sons, Ltd., 1959. 82s.]

NUMEROUS books have appeared since about 1956 purporting to deal with electronic data processing from the point of view of management. For a detailed knowledge of business programming techniques, however, it has been necessary to rely on the manufacturers' programming manuals or on attending programming courses. Since these relate to only one machine at a time, and since manufacturers have an understandable tendency to dwell longer on the advantages of their equipment than on the disadvantages, many of the people associated with data processing have a somewhat restricted view of computers and of the organization needed to use them effectively. There is thus a need for a book which gives a balanced picture of the programming problem, as far as possible independent of a particular type of machine.

In the reviewer's opinion the authors of this book have succeeded remarkably well. They have chosen to teach programming in terms of a hypothetical computer, DATAC (which, as they happily remark, stands for nothing), and approximately half the book is devoted to the development of coding for this machine. It contains many of the features to be found in real computers, a noteworthy point being that like most real computers it is well supplied with features which seem specially designed to make life difficult for the programmer. At one point the authors remark: 'If this seems like a rather lengthy process simply to prepare a name for printing, welcome to the club.'

DATAC is a magnetic tape computer with a card reader and a printer available. As one would expect, in design it is much closer to American machines than to British ones. This is not thought to be a serious limitation; nor is the fact that it could not be both a fixed word length and a variable word length machine. (In fact it is fixed length.) Perhaps a more important criticism is that the problem of multi-level stores receives scanty treatment.

It seems a pity that the important topic of machine-aided coding does not appear until chapter 14. The treatment is good, but its late arrival means that the coding examples given earlier in the book are in a form which programmers would seldom use in practice. At the risk of giving a somewhat biased picture of automatic coding, the authors might have used a symbolic form suitable for DATAC in the earlier chapters. However, they no doubt considered this idea, and one can see arguments against it. In any case, in view of the effort now being expended on automatic programming, the situation ought to be vastly different in a few years' time.

There is not space to refer to all the interesting topics dealt with in the book, but it is worth mentioning the sections on verifying programme accuracy, magnetic tape sorting, rerun techniques, programmed checks, and data protection. Future editions will no doubt require a chapter on parallel processing, a feature now becoming fashionable.

The authors are not afraid of stating the obvious where there is ample evidence that the obvious has been overlooked. For example: 'It is a common delusion of newcomers to the data processing field that an application, once programmed, is finished. The ground rules in practice change continuously, so the wise programmer makes allowance for easy program maintenance.'

The exposition is clear and often a musing and the examples in the text are good. (There is, however, an error in the loading routine on p. 214 where the equal jump in location 0011 should *not* refer to a transition card. Also, the White Knight's useful illustration of indirect addressing, quoted on p. 133, is from *Through the Looking-Glass*, not *Alice in Wonderland*.) There are numerous exercises at the ends of the chapters, and a full bibliography.

This is not a book which should be in every programmer's book case. It should be open on his desk.

P. D. JOHNSON

*Ensuring Medical Care for the Aged.* By MORTIMER SPIEGELMAN, F.S.A.

[Pp. xxxvi+280. Published for the Pension Research Council by Richard D. Irwin, Inc., Homewood, Illinois, 1960.]

No British actuary will be surprised to know of the intense interest which pensions have aroused in the U.S.A. We in the U.K. have lived with pension problems for somewhat longer, but our own attitudes to pensions are not yet settled. The Pension Research Council, set up in the U.S.A. in 1952 by the Wharton School of Finance and Commerce of the University of Pennsylvania, was established 'to sponsor non-partisan research in the area of private pensions'. The Council has already published two volumes and two pamphlets; this book is the latest in the series and it encourages the hope that future publications will deal fully with the social aspects of gerontology.

Mr Spiegelman has completed a conscientious and useful piece of research. Although intended primarily for American readers, it provides the stranger with a stimulating picture of the American scene, as far as the problems of the aged are concerned. He has been as precise as it is possible to be in a field where so many facts may be in dispute. He sets the scene with a survey of the ageing population as a whole; we in the U.K. will recognize the same inevitable developments. The great growth, both proportionately and absolutely, of the aged population which is certain to take place makes this survey all the more timely. Because the population in the U.K. is more heavily weighted at the older ages, we can understand only too well the problems to which the author refers.

No doubt this book will find its chief use as a source of reference and this will prevent the seeker of facts from appreciating the humanity with which the author approaches his task. He is keenly aware of the limitations of his statistics and his own critical comments on them are most helpful. There are a bewildering number of tables; with fewer, greater clarity might have been achieved. In particular, the tables listing the answers to 'Attitude Questions' in the chapter 'The Health Status and Health Attitudes of the Aged', do not appear to be helpful, when considered independently from the text. The interdependence of social factors is demonstrated, often casually; thus, the younger average age at marriage which appears to be a phenomenon in the Western world now relieves the middle-aged parent of his financial obligations in respect of his children at an earlier age; in 1950, this age was on the average  $2\frac{1}{2}$  years earlier than it had been in 1940; the present generation of parents therefore has a longer period during which its earnings are high but are not pre-empted for the care of children, so that this generation should enter old age with greatly increased savings.

Many of the facts described confirm our impressions about the aged, e.g. that the married, because of their domestic circumstances, need hospital facilities

less than the single: that the better educated, doubtless earning more, also use medical facilities more than the less educated, not only because these medical facilities can be afforded but also because their value is better understood. It is at this point that we feel inclined to compare the mechanisms for providing medical care for the aged in the U.S.A. and the U.K. In both countries, there is a substantial minority who must have their needs provided for them or else go unprovided. In the U.K. we have endeavoured to perform this task with greater dignity by making what we could call minimum facilities available to, and supported by, the entire community. In the U.S.A., the responsibility is still left much more with the individual. For the 'medically indigent', medical care is provided by each State, apparently subject to a means test. As old age pensions are paid to an increasing proportion of the aged population, it would seem likely that more and more of the aged would come to depend on the State for medical aid, were it not for the staunch faith in individual responsibility which the author stresses. The picture of the development of various types of health and medical expenses insurance is most impressive. In 1958, in the U.S.A., 72,000,000 people had voluntary life insurance protection through insurance companies; 123,000,000 had some form of voluntary protection against medical expenses. Much of the voluntary protection is incomplete; in particular, there appears to be a striking need to complete the contributions necessary for the benefit before retirement, although the benefit must extend throughout life to be effective. All the same, with voluntary insurance covering such a large proportion of the population, it appears to be less likely that the U.S.A. will follow the U.K. into a universal scheme of National Health Insurance. Indeed, in his last chapter, 'Toward a Goal', the author makes his own belief in the independent provision of benefits clear. One section of the community does indeed seem to be singled out for special treatment; those veterans of the Armed Forces, whose disablement or ill-health was not the result of war service, appear to be unduly favoured in comparison with civilians.

One reader at least began this book with little anticipation of pleasure but found, to his surprise, that it gave him a good deal of satisfaction. Although the going is stiff in parts, the book gives a clear picture, fascinating at times, of the current position of the aged in the U.S.A. and of the opinions which intelligent people in the U.S.A. hold about this important subject.

A. J. STEEDS

*Insurance.* By HAROLD E. RAYNES.

[Pp. v + 202. Oxford University Press, 1960. 8s. 6d.]

ON the dust cover of this book, which is No. 244 in the Home University Library of Modern Knowledge, it is stated that though the authors of the books in the series 'are experts in their subjects, they are not selected for their academic distinction alone; they are also skilled in the art of presenting their material and able to unite learning with lucidity'. The publishers are to be congratulated on having secured as the author of the volume on Insurance someone who conforms so happily to this description.

The subject of insurance covers many fields and Mr Raynes strides through them all with the easy manner of one who feels thoroughly at home in any of them. He first deals briefly with the early history of insurance, tracing it from the loans on bottomry that were arranged in Greece in the fourth century B.C., and showing how the insurance practices of merchants in Italy in the fourteenth century spread to other countries and resulted in the development of Lombard

Street as a centre of marine insurance in the sixteenth century. He then gives an account of the formation of the first fire offices in Great Britain; he also explains the origin and development of Lloyd's. These matters occupy the first two chapters of the book; the remaining eight chapters cover insurable interest and indemnity, fire and marine policies, accident insurance, life assurance, reinsurance, legislative control, reserves and their investment, and National Insurance.

It was obviously the author's intention that the book should be an account of insurance in Great Britain. For example, at the beginning of Chapter 2 he mentions the insurance companies operating in the United Kingdom, explaining that he uses the term 'insurance companies' to include the mutual life assurance societies. A little later in the same chapter he mentions companies which were formed in the early eighteenth century in Edinburgh and the provinces. There are other places in the book, however, where his obvious pride in London as a world centre of insurance seems to have encouraged him to adopt a narrower outlook. A notable example of this occurs on page 1, where he says that 'the head offices of the important British banks and insurance companies (are) situated within little more than a stone's throw of the Royal Exchange'. One can hardly believe that he wishes his readers to regard as unimportant not only the companies whose head offices are in Scotland and the provinces but also one, well known to him, which has not yet transferred its head office to the heart of the City of London.

To deal adequately with a vast and complicated subject in 200 small pages, and to maintain throughout the book a method of presentation which will hold the interest of a wide audience, is no easy matter. On the whole Mr Raynes has succeeded in this task, but it would be easy to draw attention to places where his casual style has resulted in some obscurity, and easier still to quote some rather dogmatic statements which have resulted, no doubt, from a desire to present his subject briefly and simply. There are dangers in over-simplification but presumably the author felt that he could not avoid these while keeping within his terms of reference.

The book is packed with information and even those readers who are experts in one department of insurance, but whose knowledge of other departments is limited, will be grateful to Mr Raynes for his succinct exposition of various forms of insurance and reinsurance which perhaps had previously been little more than names to them.

Generally speaking, the book is up-to-date. It contains a brief description of the National Insurance Act, 1959 (although in several other places the word 'now' is defined as meaning 1958). The author, however, is apparently unaware that in recent years it has become unusual for a decreasing temporary assurance effected in connexion with a mortgage to be subject to a single premium which is paid with the aid of a further loan by the building society.

It is to be hoped that when the book passes to a second edition, as it undoubtedly will, the opportunity will be taken to touch up some faulty sentences, including one which purports to be a quotation from the Insurance Companies Act, 1958. At the same time the index could be improved by the correction of numerous errors and by including in it several subjects such as fidelity guarantee and public liability insurance which are very helpfully explained in the book.