ment of their general condition and, less convincingly, their memory functions.

The book is the outcome of a symposium held in 1964. The contributors to the symposium have clearly had ample time to rewrite their communications and bring them and their bibliographies up to date. While there may be a good reason for it, one name seems to be a regrettable omission from the list of contributors—Hydén of Gothenberg. His work is cited in some context or other by almost every author, and rightly; he is the pioneer in this field and should surely be regarded as the father of many of the current ideas and techniques. It would have been a pleasing gesture if this admirable little book had been dedicated to him.

J. L. MALCOLM

Human Geography

By Aimé Vincent Perpillou. Translated by the late E. D. Laborde. (Geographies for Advanced Study.) Pp. xx+522+37 plates. (London: Longmans, Green and Co., Ltd., 1966.) 50*s*. net.

THIS book could have been written only by a great scholar, for it fills its pages with example after example of man's evolution, his adaptation to environment, the techniques he has evolved to emancipate himself from that environment and in his manner of settlement. The width of Prof. Perpillou's knowledge is quite astounding. He has cast his net throughout the world in his apparently effortless quest for illustrations of man's conditions. Especially noteworthy are his examples drawn from otherwise largely inaccessible sources. In places one might wish perhaps that academic axes were not being ground quite so noticeably—for example, in his attitude to Huntington and Meitzen.

British students may be surprised by the socio-anthropological point of view of the work, though this is much in the tradition of Brunhes and de la Blache. Certainly those familiar with recent publications by British geographers on the topic will here find a totally different conception of the subject. This method is shown at its best in the sections on tropical lands where the interaction of social anthropology and more "civilized" geography is most fruitful.

One major criticism is the paucity of illustrations of a more graphic nature, especially of locational maps. The publishers and editor of the series are, however, to be congratulated on having had the initiative to invite a doyen of French geography to write specifically for English-speaking students. The author has undoubtedly set a very high standard of learning for his readers.

R. T. JACKSON

Open Tubular Columns in Gas Chromatography

By L. S. Ettre. Pp. xix+164. (New York: Plenum Press, 1965.) $4.95.

THE dramatic increase in the volume of literature devoted to gas chromatography has made the investigation of any one aspect an arduous task in terms of the effort required to abstract relevant information. Monographs produced by acknowledged experts in a given field are, in this respect, particularly welcome. This book falls into such a category. Written essentially for the practising gas chromatographer, the book is confined to practical details. When theory is introduced, the frills of mathematical derivation are limited and only those definitions and equations necessary for the proper understanding, evaluation and operation of the technique are introduced. In the simple presentation the two typographical errors which occur in equations (18) and (24) are easily recognized.

After the brief historical introduction and statement of definitions, the practical implications of the Golay equation are discussed and comparisons made with conventional packed columns together with other factors such as sample capacity. Small-bore open tubed columns (also referred to as capillary or Golay columns) have not been used as extensively as packed columns except where necessity has dictated, no doubt because of the relative ease with which the latter may be made. The author's simple account of the various techniques which may be used to coat the internal walls of the column should help to dispel any mystery associated with the process. Among other factors, surface effects are considered in the preparation of the column, both in their elimination to reduce tailing, and deliberate introduction to increase surface area and consequently stationary phase loading. The consideration of the relatively new technique of "packed capillary" columns in which some form of internal surface coating is used to obtain a relatively large surface capacity of stationary phase follows as a natural corollary.

The very small sample sizes which are necessary in order to avoid overloading of conventional open columns inevitably involve some modifications to the sample inlet system. The fourth section deals with these requirements in the gas chromatographic system and includes such important matters as stream splitting design.

After the listed bibliography, which contains 286 references, a supplement is appended, giving details of the various methods which may be used for the calculation of the "air peak" time.

E. A. WALKER

Plasma Diagnostic Techniques

Edited by Richard H. Huddlestone and Stanley L. Leonard. (Pure and Applied Physics: a Series of Monographs and Textbooks, Vol. 21.) Pp. xii+627. (New York: Academic Press, Inc.; London: Academic Press, Inc. (London), Ltd., 1965.) $19.50.

As pointed out in the introduction to this book, progress in experimental plasma physics depends on the development of suitable diagnostic techniques. Such development has been rapid, and it is convenient to have a single volume such as this in which most of the commonly used methods are described.

The book consists of an introduction and twelve review articles, each by an author who has specialized to some extent in the technique described. Separate chapters cover basic macroscopic measurements, magnetic probes, electric probes, spectral intensities, line broadening, optical and ultra-violet techniques, X-ray spectroscopy, far infra-red measurements, optical interferometry, microwave techniques, and particle measurements. Most of these chapters form natural subdivisions, although that on X-ray spectroscopy could have been more naturally and economically divided between the chapter on optical and ultra-violet techniques and that on spectral intensities, which contains a useful section on the various models of non-thermal plasmas, besides much else relevant to X-ray work. Each chapter is followed by a very complete bibliography. This layout suffers from the disadvantage that different methods of measuring a given parameter appear in nearly every chapter, and it would be difficult to choose the best for a given experiment without reading the entire book, despite the comprehensive index. It does, however, permit all the techniques included to be discussed systematically. There are, of course, some omissions. For instance, it is surprising that the chapter on optical and ultra-violet techniques makes no mention of the special properties of interferometers when high light-gathering power is required. Relatively small space is given to techniques based on the scattering of laser-generated radiation, but this is almost certainly a result of the rapid progress made with these methods since the volume was compiled. In general the book contains a considerable quantity of information, and should be a useful addition to the available literature.

D. D. BURGESS