

Property Act (1882) should be interpretable in terms of physics and chemistry. If it is so, it is strange that it does not appear in the syllabus of physics in any educational establishment known to them, nor, for that matter, does proportional representation, nor (my favourite example for the purpose) the foreign exchange deficit; but in spite of these shortcomings reductive analysis is the most successful research stratagem ever devised in science. What is more — something that should appeal to left-wingers such as those who wrote this book — it is that way of understanding the world which makes it easiest to see how, if need be, the world can be changed, something which, like myself, the authors of this book do indeed believe it to be in need of. □

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Neuropeptidology

M. Ian Phillips

Brain Peptides.

Edited by Dorothy T. Krieger, Michael J. Brownstein and Joseph B. Martin.
Wiley: 1984. Pp. 1,032. \$112.15, £83.10.

WHEN a field of research opens up, there is often a rush to stake-out territory reminiscent of the opening of new frontiers in the Wild West. Such has been the case with the study of neuropeptides. What has made the subject exciting is that so many peptides appear to exist in the brain that were not known or even suspected a few years ago. All kinds of claims have resulted, both substantial and exaggerated.

The editors of *Brain Peptides* are at home on this range, and have decided that it was time to sit back on the porch and take a look at all the activity. To do this, they have invited some of the leading pioneers, and a number of recent settlers, to write chapters on specific topics.

There are excellent contributions on peptide hormone genes, biosynthesis of neuropeptides and aspects of peptides in cell biology, evolution and embryology written by Miller, Loh and Gainer, McKelvy, Acher, Strumwasser and Price. The role of peptides in homeostatic systems is covered by several authors, including Watson and Akil, Brown, Koob and Bloom, Pfaff, Fink and Karten. However the choice of Reid to write an article on

angiotensin in a book about brain peptides is ironic, since he argues that angiotensin does not exist in the brain.

A particularly useful section of the book is that dealing with methodology. The technique of immunocytochemistry is a clear favourite among the contributors for mapping and surveying the new areas — Palkovits's chapter is excellent on this and other neuroanatomical techniques. Many chapters contain lists of sites in the brain which have the ubiquitous brown stains of immunoreactive material. Less frequently, these are backed up by radioimmunoassay and further identification with high-pressure liquid chromatography. The retina has also turned out to be a rich seam of several peptide-like substances. Brecha and Karten describe how they are localized in distinct retinal cell types and that they have been found in every species studied so far. Another site that is a veritable gold mine is the paraventricular nucleus where about 30 different peptides have been identified.

The section on specific peptides is written by several pioneers, Zimmerman, Mutt, Martin, Leeman, Dockray and Vale among them. One might think that each chapter would have the same type of information for each peptide. Oddly enough, this is not so; with some peptides it has been considered crucial to demonstrate synthesis, distribution, receptor binding, physiology and function, but with others it has not. Inevitably, progress has been faster in one direction with one peptide than with another. In part this reflects the difficulties encountered with certain peptides, in part the interest and enthusiasm of an individual investigator.

The material contained in *Brain Peptides* was previously scattered through various symposium proceedings or review articles, but while the book offers a handy source it is not a work of reference. Some authors have included only skimpy reference lists, while those of others — such as Liotta and Krieger — are all-inclusive. Another complaint is that references are given in abbreviated form without titles, which probably saves space in the book but costs time in the library for the reader.

Reading *Brain Peptides* makes one realize not so much what is new but what answers are still required. For example, more detailed characterization of the immunoreactive substances is necessary, as are more electronmicroscopic analyses. A theoretical basis for peptide action is elusive and much needed; the statement found here that peptides have a "modulatory action" explains nothing. Nevertheless this book is a timely stopping point for reflection and for survey of a new field to explore — not strictly of brain peptides, but the study of neuropeptides which might be called "neuropeptidology". □

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Multiple uses for monoclonals

Brian Anderton

Monoclonal Antibodies.

By Karol Sikora and Howard M. Smedley.

Blackwell Scientific: 1984. Pp. 132.
Pbk £8.50, \$16.75.

MONOCLONAL antibodies have proved to be powerful tools in diverse areas of biology and medicine. There are probably now many more non-immunologists than immunologists using them, a fact which makes short, easily readable publications such as this very valuable.

In the preface, the authors state that their aim was to produce a book on monoclonal antibodies aimed at students of medicine as well as physicians. In this they have succeeded exceedingly well, but it is unfortunate that the title does not indicate the bias. There is only one chapter devoted to the application of monoclonal antibodies in cell biology, but its treatment of the topic is so slight that the value of the book to biologists is far less than that to medical students. This is a pity because the first three chapters on the basics of antibody properties, production and assay are written at a level such that a prior grounding in immunology is not essential. Also, while the book includes a number of descriptions of practical procedures, it does not set out to be a laboratory manual of detailed protocols.

The meat of the text is a comprehensive discussion of monoclonal antibodies in medicine, where they are already proven and are increasingly used routinely for a variety of diagnostic tests in all of the pathology services. The authors also point out that the future will see further antibody-based tests, replacing slow and less precise methods (for example in identification of certain microorganisms), and the introduction of new tests (say, for head injury, by the immunoassay of brain antigens in serum). Less certain is the potential for the use of monoclonal antibodies in therapy, particularly in cancer patients. This topic is of special interest to the authors and although they present an optimistic view, the subject is treated in an objective way. Their even-handed approach also applies to the problem of making human monoclonal antibodies, the solving of which remains a highly desirable goal.

Sikora and Smedley's book is a reasonably priced and, of course, a timely publication. It should be read by all those training or working in medical science who are not already conversant with monoclonal antibodies, be they sceptics or not. □

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New in paperback

The Clocks That Time Us: Physiology of the Circadian Timing System, by M. C. Moore-Ede, F. M. Sulzman and C. A. Fuller. Publisher is Harvard University Press, price is \$10.95, £9.30. For review see *Nature* 299, 323; 1982.