

BOOK REVIEWS

A Dose of Biophysick

Physical Problems in Biological Systems. Edited by C. DeWitt and J. Matricon. (Université de Grenoble – Ecole d'été de Physique Théorique, Cours donnés aux Houches en 1969, avec des subventions de l'OTAN et du Commissariat à l'Energie Atomique. Pp. xx+430. (Gordon and Breach: New York, London and Paris, September 1970.) \$15; 125s.

As the old medicine bottle labels used to say, "Shake well and take two table-spoons after meals". Into this particular mixture has gone a curious and largely im-miscible set of ingredients, ranging from phage genetics to electron paramagnetic resonance. As if this were not enough, half the articles are in French and half in English, and the whole thing is peppered with improbable, though picturesque, misprints. Well, if it is nasty enough it must perhaps do one good. It used to be said that the more unscrupulous chemists in the East End of London would dispense medicine from one great pail into bottles labelled variously to promise alleviation from the whole gamut of human ailments. The reader can make his own list of labels, besides *Physical Problems in Biological Systems*, for receptacles into which this collection of articles could equally well have been poured.

I do not want to give the impression that the ingredients in themselves are of inferior quality. Two of the authors advertised on the jacket in fact turned in no manuscripts, and two more articles are of token length. There is an introduction by Chantrenne, covering the whole of molecular biology in just over fifty pages; there are four articles, all interesting in their own way, on various views of membranes, one on genetics of lambda phage, one on NMR studies of haemoglobins, one (a very fluent exposition by Weill) on optical properties of biopolymers, and one, filling 120 pages, on electron paramagnetic resonance. This last, by Feher, is a fine readable account; in effect, a complete monograph which, for anyone seeking to acquaint himself with the essentials of the method and its applications to biological systems, cannot, I am sure, be bettered in the existing literature. But one cannot have it without phage genetics and the rest.

These articles are the tangible product of an Alpine Summer School, where, says the blurb, physicists gather each summer to "seek, in a magnificent setting, the peaceful atmosphere needed for intensive intellectual work". The implication appears to be that both the peaceful atmosphere and the white intellectual heat resulting from it will com-

municate themselves to the prospective purchaser, who will accordingly fork out his six pounds with fewer misgivings than if the physicists had cerebrated in Doncaster or Hoboken.

The book, then, is a product of the new infrastructure that has sprouted in the last few years, thanks to the desire of various bodies to press their money on the scientific community—that round of Summer Schools, Spring Schools and Workshops, which sell their wares by offering free samples of the good life. For an instant of sheer bliss I urge fellow-connoisseurs of the habits of the modern *savant* to look out on their laboratory noticeboards—for I do not ask anyone to believe it on my unsupported testimony—for a poster, which advertises a biochemical Summer School, with free skiing instruction "by one of Austria's most famous skiing schools". As the poet said, plain living and high thinking are no longer enough. W. B. GRATZER

Fungal Skin Diseases

Dermatophytes: Their Recognition and Identification. Revised edition. By Gerbert Rebell and David Taplin. Pp. vi+123. (University of Miami: Coral Gables, Florida, 1970.) \$4.95.

THE revised edition of this manual has been enlarged to include all currently recognized dermatophyte species. To begin with, there is a lucid introduction to the study of these fungi which describes the epidemiology of human and animal dermatophyte infections, their geographical distribution and the features which are used in their identification. Forty species, of which thirty-two have been reported to cause skin lesions in man, are then described in detail with special emphasis on clinical aspects of the diseases, their epidemiology, geographic distribution, macroscopic and microscopic morphological characteristics and other features useful for identification purposes. Line drawings are used to illuminate diagnostic features. An illustrated key to assist identification of the fungi is a new addition, and a useful section on laboratory methods has been included. There are now four colour plates showing photographs of fungal colonies as well as a page of photomicrographs illustrating various spore types. All this new material has had to be spread over twice the number of pages and to avoid increasing the size of the manual too much, each leaf is now printed on both sides. Although the manual is therefore still the same compact size, some of the easy readability, which was a feature of the first edition, has been lost.

The authors have made changes in terminology, substituting the term *aleuriospore* for *conidium* and *thallus* for *colony*. This seems unnecessary, for the original terms are now so familiar in mycological literature. I can recommend this very useful work on the dermatophytes to all workers in the field of medical mycology.

Y. M. CLAYTON

Molecular Pharmacology

Molecular Properties of Drug Receptors. Edited by Ruth Porter and Maeve O'Connor. (A Ciba Foundation Symposium.) Pp. ix+298. (Churchill: London, 1970.)

PHARMACOLOGISTS have traditionally defined and studied "receptors" by operational criteria, a "receptor" being that entity within a cell with which a drug, hormone or transmitter substance interacts to produce some measurable biological response. It is now, however, generally agreed that such "receptors" are likely to be specific proteins and, as such, amenable to study by the powerful tools of molecular biology. As with operationally defined concepts such as the "gene", the receptor may prove susceptible to direct chemical analysis.

This symposium presents a unique collection of information about the current status of knowledge both of the molecular properties of receptors and of the methods which are available for studying the conformation of proteins. The latter is of fundamental importance to molecular pharmacology, for it is tacitly assumed that the drug/receptor interaction leads to conformational changes in the receptor protein. The experimental blend of pharmacology and molecular biology in this symposium can only be judged a resounding success.

The proceedings follow a coherent structure, starting with detailed and lucid descriptions of receptors as defined by their pharmacological properties, with particular emphasis on muscle receptors for the neurotransmitter acetylcholine, the definition of drug-receptor kinetics, and the action of antagonists. In a discussion of the nature of receptors for the catecholamines, the evidence for the involvement of adenylyl cyclase is critically examined. Activation of this enzyme appears to be a major mechanism by which the catecholamines stimulate glycogenolysis and lipolysis, and it may be involved in other effects mediated by adrenergic receptors of the β -type. It seems unlikely, however, that adenylyl cyclase is the "adrenergic receptor"; instead, discrete receptors for the catecholamines and other hormones appear