

prescription of an occupational disease can be based upon isolated clinical observations only. We live now in an era of planned observation of populations. It is difficult enough to establish a non-specific disease as an occupational disease in an industry by carefully planned statistical record, without wasting time and effort on the collection of clinical cases devoid of the necessary data from which valid conclusions can be drawn. It is not necessary to designate such work as mathematical.

Baader rightly deplores the failure of physicians and surgeons to inquire into the occupation of their patients and instances cases where mis-diagnoses led to a continuance of hazardous work.

He rightly condemns the unrewarding diagnosis of gas-poisoning and the ambiguous designations of occupations, which do not reveal the nature of the patient's occupational exposure.

He approves the statement of Flury that poisons only "stimulate or inhibit the function of single organs and do not produce functions which are normally not characteristic of them" and illustrates from the chronic nephritis of lead, syphilis, vascular disease, or the end-stage of acute nephritis; from bronchitis and bronchopneumonia brought about by irritant gases or infection; from bladder tumours of aniline workers (*sic*) and bronchogenic cancer among miners of pitch-blend; from disturbances of heat regulation by CO, CS₂, CCl₄, and C₆H₆ which might be attributed wrongly to infection.

It must be admitted that the doctrine is at present almost unassailable but must ultimately be annihilated as more and more knowledge is gathered of the intracellular mechanisms of toxic action. The crude methods of today must soon be replaced by ways of distinguishing between, for example, the cellular disturbances brought about by different carcinogenic agents even though the ultimate tumours induced are clinically and histologically indistinguishable. It is true that there are more ways than one of killing a cat but the ways are distinguishable and more or less avoidable. The differences in reversibility of the effects of toxic agents should give us pause in equating the intermediate stages even when the final stages may appear identical. The long latent periods of many occupational diseases, the apparently contradictory results of the same toxic agent, the loss of resistances to many chemical noxa after more or less lengthy exposure, all await explanation which Flury's doctrine does not help us to attain. But he was writing over 30 years ago.

Baader gives the 1952 lists and the projected lists of prescribed diseases enacted in the German Federal Republic; the 1957 list in the East German Republic; lists in the Saar (1954), Austria (1955), and Switzerland (1952, 1956). The German lists are generally similar to those in the United Kingdom. The prescription of tear-fractures of spinal processes and of asbestosis combined with lung carcinoma rings strangely in British ears.

A difference from the more specific prescription used in this country for tumours of the bladder is the German formula of "Cancer or other new growths as well as changes in the mucous membrane of the urinary tract brought about by aromatic amines".

Another aspect of some interest in German prescrip-

tions is the inclusion of the phrase "... which necessitate a change of occupation or complete cessation of all work". It may not be generally known that prescription in Switzerland includes a list of organic and inorganic recognized causes of "dangerous illnesses", and block designations such as "Chlorinated ethers of the aliphatic series" or "Halogenated aliphatic hydrocarbons".

The treatment by Baader of the extensive field from the clinical point of view is, as would be expected, comprehensive and in the classical manner.

The book is not easy to read consecutively but of its value as an up-to-date reference volume there can be no doubt.

The literature quoted is extensive even if, except in one or two fields, Britain does not figure very noticeably.

Professor Baader is to be congratulated on a notable achievement.

M. W. GOLDBLATT

Occupational Disease in California Attributed to Pesticides and Agricultural Chemicals, 1959. (Pp. 30.) California: State Department of Public Health. 1961.

Under Californian law a doctor who attends a patient injured at work and whose disability extends beyond the day of the injury must file a report. A total of 1,093 such "first reports" on cases of illness attributed to pesticides during 1959 are analysed and discussed in this publication.

About 42% of the cases were poisoning by organo-phosphorus insecticides. The only fatalities during the year were two men engaged in fumigation, one with carbon tetrachloride and the other with methyl bromide. Although "first reports" may not always give the final diagnosis these data from one of the most intensively developed and regulated agricultural areas of the world are instructive.

Complimentary copies are available upon request, within limitations of the supply, from the Bureau of Health Education, California State Department of Public Health, 2151 Berkeley Way, Berkeley 4, California.

J. M. BARNES

Micro-organisms as Allies: The Industrial Use of Fungi and Bacteria. By C. L. Duddington. (Pp. 256; 21 figures. 25s.) London: Faber and Faber. 1961.

This book deals with the many and varied ways in which bacteria and moulds are used in industry. The opening chapter entitled "The Livestock of Industry" describes the work of Louis Pasteur, generally accepted as the pioneer in this field, and details the research he carried out for the French wine and silk trade and how vast industries have been founded on the efforts of Pasteur and subsequent microbiologists.

As might be expected, a considerable amount of space has been given to the brewing process, and the yeast used in this trade is cultured with great care in very elaborate laboratories. The main differences between top fermentation, where the yeast grows on the surface of the wort to produce most types of British beers, and bottom fermentation, where the yeast lives at the bottom