Ionic balance in the brain, and on the blood-brain barrier. They also discuss the effects of hypercapnia, carbon monoxide, cyanide and other poisons, and (oddly in view of the title) hypoxia. The selective vulnerability of different parts of the brain may be due to difference in blood supply of the different parts in relation to their different metabolic needs. An illustration of the importance of individual, probably metabolic, factors is the selective death in hypoxia of Purkinje cells scattered throughout wide areas of cerebellum which otherwise survive. The brain may swell after hypoxia and this may itself cause lesions by compressing arteries or veins. The pathological reactions to hypoxia take time to develop, and this fact may be related to the well-established clinical phenomenon that a patient who has been hypoxic may first recover substantially and then a few or many days later relapse. The use or avoidance of various types of treatment such as hypothermia, corticoids, and intravenous urea is largely based on the view taken of the important pathological processes. Anyone concerned in treating patients of this type will be interested to read this authoritative account of current knowledge and outstanding problems.

J. M. K. Spalding

The literature on substances producing pain is now very large. Dr. Keele and his colleagues have contributed much to the subject. It is therefore appropriate that he should produce this monograph. It is a comprehensive review of the peripheral chemical mechanisms in pain production, with a full and particularly useful bibliography. Some consideration is also given to the part played by peripheral nerves and their endings and the interrelations of these with chemical pain producers. Central pain and its mechanisms is not considered.

Having reviewed the experimental and pharmacological evidence in detail and with thorough critical discussion, the authors mention briefly some clinical conditions associated with pain and discuss the possible role of the factors elucidated by laboratory work. Here the authors are perhaps less critical than they might be of clinical ‘facts’. Nevertheless clinicians will find these chapters of special interest. Indeed the whole volume cannot fail to be interesting and important for all those who have to deal with pain and particularly for those who try to investigate it in the clinical setting.

C. W. M. Whitty


Taraxein, isolated in 1955 by Heath and his colleagues at Tulane University, New Orleans, from the serum of schizophrenic patients, has led a precarious life since then. Its existence has been questioned, and its effects denied. Heath injected it intravenously into monkeys and observed profound changes in behaviour as well as electrical changes in the brain similar to those observed in schizophrenic patients; he then administered it to prisoners in the local gaol who volunteered to submit to the experiment, and reported that they developed characteristic symptoms of schizophrenia. Other psychiatrists repeated these investigations and obtained negative results. Heath attributed this to the instability of taraxein. In 1959 Kety wrote a survey of biochemical theories of schizophrenia which included a balanced but damaging statement on the weakness of Heath’s claims. Others, however, in Detroit, Stockholm, and elsewhere produced more favourable findings. A symposium was held at New Orleans in 1961 at which the current status of the problem was reviewed, almost entirely from a favourable standpoint. In this book reporting the symposium there are four sections, dealing respectively with fractionation procedures, animal assays, mode of action, and clinical studies. The first of these sections is at this stage the crucial one. It seems clear that a variety of fractionation methods is in use for the separation of a protein which when injected can disturb the behaviour of experimental animals. The chemical nature of the substances thus separated is uncertain. Hoagland and his associates at Worcester put the matter cautiously in one of the contributions to the symposium: ‘an abnormality exists in the globulin portion of the plasma proteins of schizophrenics, but it has not been determined whether this is due to the presence of a new protein or to the increased amount of a naturally occurring plasma protein. Nor has it been proved whether the abnormality is causally related to the disease or an incidental by-product of it.’ To the subject, thus properly left sub judice, the papers in the symposium are a useful background.


It is widely (and correctly) believed that psychiatry in the United States is dominated by psychoanalytical doctrine, somewhat modified by American pragmatism and the current emphasis on the use of drugs. Nevertheless, there is now much research activity which is concerned with the biological characteristic of mental abnormality, just as there is now much investigation of epidemiological and social aspects. There are two societies explicitly devoted to such studies: the Society of Biological Psychiatry and the American Society of Medical Psychiatry. At the seventeenth annual meeting of the former of these societies a number of papers, many of them embodying previously unpublished work, were read and are reproduced here. They indicate a vigorous effort at biochemical and clinical study of mental disorder and the mode of action of reserpine, mono-amine oxidase inhibitors, and psychotomimetic drugs. The majority of these studies are sober and restrained; the Academic Lecture, however, which was delivered by Professor Cazzullo of Milan, was rather sweeping in its claims. The special subject dealt with at the meeting was anomalies of development. Here, as in the metabolic studies, animal experiments were reported, as well as laboratory and clinical observations on human beings. Many of the papers dealt with the interplay between the foetus or the neonate and its mother: there was a refreshing absence of speculation about the psychological happenings in the baby’s mind. Although the findings in a
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