Book Reviews

Drugs and Mental Disorder

The Hallucinogens. A. HOFFER and H. OSMOND, with a contribution by T. Weckowicz. Academic Press, New York, 1967. x + 626 pp., illus. $25.

The fact that certain drugs can produce changes in perception, thinking, and feeling has fascinated man from early times. The resemblance of drug-induced states to naturally occurring madness has been repeatedly noted, and the discovery in 1943 of the hallucinogenic possibilities of lysergic acid diethylamide stimulated widespread interest among psychologists, psychiatrists, and chemists in drugs with similar actions. Encouraged by literary (for example, Aldous Huxley) and mystical (Timothy Leary *et al.*) figures, the adventurous use of such drugs—especially LSD and cannabis—has spread among young people, arousing public concern.

Now Hoffer and Osmond have attempted to bring within the covers of a single book comprehensive information about the varieties and sources of hallucinogenic substances together with a survey of their psychological and physiological effects, and to discuss the mechanism of action of such agents with particular emphasis on their chemical structure and the possible metabolic transformations of compounds. Such a book could fill a void, for no comparable volume has been offered since Louis Lewin's *Phantastica,* published in 1931. (A number of published symposia are available, but none of them attempts to be comprehensive.) Hoffer and Osmond both have impressive credentials, having been concerned with hallucinogenic agents at least as far back as 1954. (Osmond introduced the word "psychedelic" into the English language, and that picturesque term has swept the world.) The suggestion made by Hoffer, Osmond, and Smythies in 1954 that adrenochrome, an oxidized form of epinephrine, might be responsible for schizophrenia was both audacious and plausible, and it provided the ferment for research in many laboratories. Most competent investigators have not found significant levels of adrenochrome in the blood of either normal or abnormal subjects and have concluded that it probably does not play a role in human physiology; but the theory did stimulate interest in the possibility that catecholamines might play a role in mental disease, and this idea has now achieved a prominence and respectability unequaled in psychiatry and pharmacology.

The serious defects of Hoffer and Osmond's new book are therefore especially regrettable. Much to my surprise, there is not a word in it about cannabis (marijuana), a drug that is known to cause hallucinations and disordered thinking and that has been used by millions of people, whereas 170 pages are devoted to adrenochrome and an entire short chapter to taraxein, neither of which is unquestionably hallucinogenic. The authors steadfastly uphold their hypothesis concerning adrenochrome and schizophrenia, disregarding all the conflicting evidence of the literature as though they were unaware of it and describing various chemical therapies they have employed with schizophrenics to counteract the presumed effects of adrenochrome. The book is in fact full of polemical defenses of highly controversial chemical theories of mental disease.

The subject of hallucinogenic drugs is a difficult one because the effects in humans are hard to characterize in objective, quantitative terms. The present authors do not appear to be concerned with such considerations, and allow their rich imaginations to encompass material from chemistry, psychiatry, and mythology in impressionistic fashion. A great deal of space is given to verbatim descriptions by untrained volunteers of their reactions to different drugs. The authors' own descriptions of the effects of drugs are also unsystematic; the sources and even the units of measure are frequently omitted from their tables of data. The book is clearly not for the novice in this field, but it may interest the skeptical specialist who is already familiar with the controversial literature and would like to sample some uninhibited thinking.

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The Recent Geologic Past in Western Europe

The Quaternary. Vol. 2. KALERVO RANKAMA, Ed. Interscience (Wiley), New York, 1967. viii + 477 pp., illus. $19.50. The Geologic Systems.

These masterly reviews of the Quaternary of the British Isles (by R. G. West), France (by Henriette Alimen), Germany (by P. Woldstedt), and the Netherlands (by J. D. de Jong) will make much more accessible to American readers the vast and intricate geologic, paleoecologic, and archeologic literature of a large region whose history during the past million years or so must have resembled that of the eastern half of the United States in a great many ways. The investigations in these countries have been much more detailed in many respects than those in America, and the modern interpretation of complex stratigraphic sequences and geomorphic features implies detective work extending over literally generations of investigation since Louis Agassiz brought the glacial theory to Britain in 1840.

On the geologic side, perhaps the most impressive advances have come in the Netherlands and adjacent parts of Germany, particularly as a result of mineral analyses of sediments of diverse provenance in the Rhine River system and its ancient tributaries. Subdivisions of the early and middle Pleistocene in those regions are becoming broadly accepted on the basis of sediment analyses of nearly continuous stratigraphic sections that are in large part far removed from the glaciated areas themselves. In the absence of isotope dates, correlations must be made on the basis of highly detailed physical and biostratigraphic analyses, with modest help from the landforms.

Perhaps the most productive line of investigation for Quaternary climatic