Book Reviews

Experimental catatonia: a general reaction-form of the central nervous system and its implications for human pathology. **Herman Holland de Jong. Baltimore: Williams & Wilkins, 1945. Pp. xiv + 225. $4.00.**

According to de Jong, catatonia is a neuromuscular reaction-pattern which, in its predominant hypokinetic form, is characterized by diminution of spontaneous motility, maintenance of static posture (catalepsy), and passive resistance to, or reversal of, induced movement (negativism); however, hyperkinetic tremors and impulsivity may also appear. The author acknowledges that a catatonic syndrome occurs in many diverse neurologic and psychiatric disorders, but he is primarily interested in the so-called "catatonic" subgroup of schizophrenic psychoses. In early studies at Amsterdam University (*La catatonie experimentale par la bulbocapnine.* Paris: Mason, 1930) de Jong, Baruk, and coworkers observed that significant alterations of muscular tonus and movement could be induced in animals by the injection of bulbocapnine, an alkaloid chemically related to apomorphine; the author therefore inferred that catatonic schizophrenia might also be of toxic etiology in man.

The present volume presents abstracts of subsequent studies by the author and his associates at Columbia and, more recently, at Duke University. In brief, these studies showed that the motor and autonomic symptoms of catatonia could be induced by a great variety of other drugs, such as mescaline, epinephrine, acetylcholine, and even CO_2 inhalations, so that the author's original quest for a specific "catatonizing chemical nucleus" had to be abandoned. Further, while "the extent to which catatonic manifestations could be produced [by bulbocapnine] seemed to be related directly to the degree of development of the nervous system of the experimental animal [Lewis]," the catatonic states induced by experimental lesions of the brain could not be directly correlated with either the localization or the size of the lesions themselves. Catatonic disturbances of muscular tonus were also produced by an Eck's fistula or by the ligation of an intestinal loop in dogs, by passing electric currents (especially of the direct-interrupted Leduc type) through the brains of cats, or even by subjecting rats to rapid horizontal rotation or to intense auditory stimulation. Still in pursuit of a possible toxic factor in clinical catatonia, the author next undertook extensive research on a substance in human urine hopefully called "catatonine" (later shown to be "operationally identical" with nicotine and not specific for schizophrenia), on the histamine content of human blood, and on the cephalin-cholesterol flocculation test for liver function in schizophrenics and normals—all with indeterminate results. De Jong concludes, nevertheless, that catatonia is an expression of "cellular asphyxiation in the nervous system" and implies that the latter, as Kraepelin postulated, is probably due to some undetermined "auto-intoxication" of the body.

It may be seen that de Jong's approach to neuropsychiatry is still traditionally dualistic: an abstract "mind" is distinguished from a material "body," and all problems of behavior must be solved in terms of tissue function. From this orientation there follows his insistent pursuit of a single organic cause for "catatonic schizophrenia," which, clinically, is a vaguely defined, protean, and highly variable disorder contingent on a multitude of biodynamic determinants in the past experiences and current adaptive functionings of the organism.

Even granting the validity of so narrow an approach to the subject, the book has other, though less serious, defects. The discussion is thin and repetitious; records of the experiments are fragmentary and sometimes do not support the conclusions; the studies of other workers in the field are accorded scant notice; and the lack of an index makes cross-reference to the text difficult. Nevertheless, the work represents a sincere effort to report an almost life-long series of studies by an alert, competent, and persistent investigator and, as such, will furnish significant data to those interested in the comparative investigation of normal and abnormal behavior by valid and promising methods of animal experimentation.

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American Old and Middle Tertiary larger Foraminifera and corals. **Pt. I: *American Paleocene and Eocene larger Foraminifera.* Thomas Wayland Vaughan. Pp. x + 175; Pt. II: *West Indian Eocene and Miocene corals.* John West Wells. Pp. iii + 25. New York: Geological Society of America, 1945. Memoir 9.**

This memoir is divided into three sections, the first two of which are by Vaughan and the third by Wells. The first portion describes the larger Foraminifera collected by Dr. A. Senn in Barbados, British West Indies, from rocks of Paleocene and Eocene age. The second section is a detailed account of the skeletal structure, development, and classification of the genera and species of the foraminiferal family Discocyclinidae, followed by a rather complete annotated list of the various American species assigned to this family. The final section of this memoir is a description of twenty-seven species of Eocene corals from Barbados and two species of coral from the Miocene of Martinique.

In Barbados, in the Joes River mudflows, there occur fossiliferous blocks which contain an assemblage of Paleocene larger Foraminifera. Most of the species recovered from these blocks are identical to those described from the Soldado formation on Soldado Rock, Trinidad. The formation from which these blocks were derived is not exposed.

The oldest exposed rocks are the Scotland formation, which is divided into a lower and an upper portion. The lower contains only one species, *Discocyclina* (*Discocyclina*) *grimsdalei* Vaughan and Cole. As this species appears to have a rather long stratigraphic range, the correlation of the Lower Scotland formation depends on