brain. The author has thus excluded the peripheral nervous system from the discussion and only barely mentions the spinal cord.

For each of the three metals there is an historical note, a discussion of the clinical features of the various metabolic abnormalities or intoxications, and sections on clinical pathology, histopathology, and treatment. Copper metabolism receives the most detailed consideration and this chapter includes a valuable discussion of normal as well as abnormal copper metabolism. There is an almost complete list of published cases of hepato-lenticular degeneration. The chapter on mercury contains a section on pink disease.

This is a most useful book for anyone wishing to become acquainted with the literature concerning these three metals and the brain.

SABINA STRICH.

The Effect of Advancing Age Upon the Human Spinal Cord. By the late L. Raymond Morrison in collaboration with Stanley Cobb and Walter Bauer. (Pp. x+127; 86 figures. 48s.) Harvard University Press (London: Oxford University Press). 1959.

This posthumous publication, the completion of which we owe to Dr. Stanley Cobb and to Dr. Walter Bauer, will be useful to those who are uncertain as to the significance of certain histological changes in the spinal cord. The illustrations, which are culled from a series of 31 specimens ranging from the second to the ninth decades of life, show the range of changes which may be regarded as normal: death in most instances was due to medical causes, which one assumes were regarded as being of a type not likely to have given rise to changes in the cord.

The second half of the book is in fact an atlas of the spinal cord taken at each segmental level, special prominence being given to the cell populations. These are all made on a 24-year-old subject.

W. H. MCMENEMEY.

The Effect of Pharmacologic Agents on the Nervous System. [Res. Publ. Ass. nerv. ment. Dis., Vol. xxxvii.] (Pp. xi+488; illustrated. 108s.) London: Baillière, Tindall & Cox. 1959.

This volume, the 37th of the series, is as valuable as those that have preceded it. There are recorded in this book 26 separate articles, together with the discussion each involved, which were given in 1957 as the Proceedings of the Association for Research in Nervous and Mental Disease. Most of the chapters are directly related to the effects and actions of various pharmacological agents in neurological and psychiatric conditions, both as they occur in man or can be induced in animals. While most of the chapters are extremely good, special note must be made of the communications by Dr. Melvin Yahr on anticonvulsants, Dr. S. A. Jervis on metabolic aspects, and Dr. H. E. Himwich on stimulants. Anyone interested in this field of neurology and psychiatry must read this authoritative book and many workers in other fields would profit by a consideration of some of the methods that have been employed in the various studies related therein.

J. N. CUMINGS.

A Symposium on the Evaluation of Drug Toxicity. Edited by A. L. Walpole and A. Spinks. (Pp. xi+138; 9 plates. 25s.) London: J. & A. Churchill. 1958.

During the last few years physicians and the manufacturers of drugs have shown anxiety at the increasing frequency of serious illness and death directly attributable to the administration of drugs. This is shown by the appearance of three symposia on this subject within three years and by many discussions in medical societies. The first symposium, "Nebenwirkungen von Arzneimitteln auf Blut und Knochenmark" (Stuttgart, 1957), organized by Hoffman-La Roche, was attended by 54 specialists, who spoke in German, and 19 papers were read and discussed. The second, organized by the C.I.O.M.S., "Sensitivity Reactions to Drugs" (Oxford, 1958), was a smaller meeting with only 19 participants, who spoke in English. The most recent, now under review, was organized by I.C.I. Ltd., with only nine principal speakers but 46 participants, of whom only two were not British. These three volumes give a general picture of the Swiss-Austrian-German-Scandinavian approach, British-French-American-Swiss, and British approaches to the problem.

The I.C.I. volume is at once the smallest and the most exacting of the three, since the principal contributors are experimental pharmacologists and physiologists, and the first session, inaugurated by Professor E. J. Wayne, was continued by members of the staff of I.C.I. (Pharmaceuticals) Ltd. and the American Cyanamid Co., who explained their methods of assessing the efficiency, safety, and toxicity of new drugs. This is a most valuable contribution to the literature, for it is a critical exposition of the problem and of the way it is now being studied. Perhaps the most important paragraph is that of Dr. G. E. Paget:

> "I think every biologist and clinician should have it clear in their own minds, and make it clear to their chemical and commercial colleagues, that every time a new drug is tried in man we are conducting an experiment the outcome of which, both therapeutically and toxicologically, must be in considerable doubt no matter how much experimental work has been done."

The second session deals with the effect of drugs on specific organs, structures, or responses—allergic response, bone marrow toxicity, liver toxicity, and action on subcellular structure—and utilizes information from humans as well as animals. It is impossible to summarize the wealth of useful information in these pages, and it is presented in ways which continually stimulate the imagination and constantly reveal new possibilities. This is not a book for the laboratory but for the study; and those who read it will learn some useful clinical medicine as well as academic and clinical pathology.

GEORGE DISCOMBE.