

It is possible, however, to have too much even of a very good thing. Bibliographies may be the root of a paper, but the root must not be allowed to displace the tree. It is a question whether all long bibliographies are equally essential or deserve to be added to our heavily overloaded literature. It is well known that there are already many of them scattered through the journals, and a very comprehensive guide to the literature on a subject may be made up of only a few well chosen citations. We have enough reduplication of writing as it is.

To those interested in this apparently small detail we warmly recommend Dr. J. F. Fulton's excellent address on "The Principles of Bibliographical Citation".* Dr. Fulton's demands are exacting, his criticism severe; and nothing is more to be desired if our standards of writing are to be not only maintained but raised yet higher.

H.E.M.

The Study of Arthritis

All doctors interested in the problems involved in the study and treatment of arthritis are invited to be present at a preliminary organization meeting, to be held in the Library of the Daly Building, Ottawa, on February 14th, at 2.00 p.m.

There is an International Association at present, with headquarters at Amsterdam, with branches throughout Europe and America, and it is proposed to set up a similar branch in Canada, which will be directly associated with the Canadian Medical Association, whose Executive has intimated its approval of the suggested action of the temporary Committee, which was formed in January, 1935.

The answers to the questionnaire sent out by the temporary Committee last Spring were overwhelmingly in favour of the institution of an organized effort, and any doctors in Canada who were not reached by that questionnaire are also invited, either to be present themselves, or to send their comments on the general points involved to Dr. W. S. Barnhart, Medical Arts Building, Ottawa, Temporary Secretary, who will also be glad to answer any enquiries by mail.

The general plans to be followed will be those recommended by the Arthritis Committee of the British Medical Association.

ROSS MILLAR, M.D.,
Temporary Chairman.

W. S. BARNHART, M.D.,
Temporary Secretary.

This important matter is commended to the earnest attention of the profession [ED.].

* *Bull. of Med. Lib. Assoc.*, 1934, 22: 183.

Dr. Maude Abbott's Atlas

The American Heart Association announces that it will publish the "Atlas of Congenital Cardiac Disease", now under preparation by Dr. Maude E. Abbott of McGill University. The book has been expanded from fifteen to twenty-five plates, containing over two hundred cuts with a handsome frontispiece. It now presents a comprehensive survey of the development and comparative anatomy of the heart in correlation with various cardiac defects, followed by a practically complete pictorial review of the entire range of cardiac anomalies of clinical significance, grouped under the author's classification, the roentgenological and electrocardiographic appearances being featured also whenever possible. It will contain some 75 pages of text and illustrations, forming a volume 11 x 14 inches in size, attractively bound with gold lettering.

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The book is being issued by *advance* subscription, and it is planned to have it ready for circu-

lation about March 15, 1936. We urge all those desiring copies of this valuable publication to send their orders with cheques for \$5.50 (which includes the cost of packing and postage) to the American Heart Association, 50 West 50th Street, New York, N.Y., as soon as possible, and not later than March 1, 1936.

Retrospect

MILESTONES IN THE RECENT DEVELOPMENT OF OUR KNOWLEDGE OF HEARING AND BALANCING*

BY W. J. McNALLY

Montreal

At the first meeting in history of two of the national societies of North America it is fitting to outline some of the recent fundamental contributions which have been made to our specialty, particularly when so many of them have come from America. You will note that the advances to which I shall refer are from only one department, namely, the ear, and for the most part they are not clinical. Clinical progress must be preceded by accurate knowledge of anatomy, physiology and pathology. Because of insufficient and inaccurate knowledge of these basic sciences otology has been almost at a standstill for thirty years.

Experimental investigation of the labyrinth flourished during the first quarter of the twentieth century. This was in large part due to the stimulating effect of the work of Sherrington, Magnus and de Kleijn, and Barany. With the beginning of the second quarter of the century, in America at least, this popularity of the labyrinth gave way to study of the cochlea. I believe the change was in large part due to the formation by the American Otological Society of a committee for the study of otosclerosis, and to the discovery by Wever and Bray of an improved method of recording an animal's hearing.

BALANCE

At the beginning of the century, Sherrington was carrying out his experiments upon the mechanism of bodily posture and reflex activity, which are now numbered among the great contributions to physiology. Simultaneously, but in their respective laboratories, he and Magnus discovered that animal posture is influenced by the labyrinth. Magnus and de Kleijn and their co-workers analyzed the labyrinthine reflexes concerned with posture and attempted to localize them to their origin in the different parts of the

organ. Furthermore, they distinguished, described, and localized many associated reflexes which also effect posture but which are non-labyrinthine in origin, such as neck reflexes and body-righting reflexes, etc. These had previously been confused with labyrinthine reflexes. The work carried on in these two laboratories attracted students from many countries so that a widespread revival of interest in labyrinthine function followed.

Barany's description of the caloric test in 1907 coincided with the experiments described above and stimulated interest, particularly among clinical otologists. A great obstacle to progress in labyrinthine physiology has been the difficulty of effecting clear-cut ablation operations on the individual end-organs. The difficulty increases as one mounts the scale to the mammal. In view of this the experiments of Maxwell, of California (1922), on the dogfish are an outstanding accomplishment. He has performed successful ablation operations on the individual canals and otoliths, and has analyzed the function of the different end-organs. As this work is repeated by subsequent investigators, I believe that his conclusions will be generally supported. In Montreal we have succeeded in carrying out differential ablation operations on the frog's labyrinth, and in many respects our conclusions confirm those of Maxwell. Versteegh, of Holland, has succeeded in doing differential ablation operations on the rabbit's saccule and utricle, but not on the semicircular canals.

Parker, of Harvard, working at the beginning of the century on the fishes' labyrinth was the first to demonstrate that in fishes the saccule is probably a vibration receptor. He and many others have practically established that the saccule has no vestibular function. Recently, Ross, in fishes, Hallpike, in the frog, and Ross and McNally, in the frog, have recorded action currents from the saccular nerve, and find that the saccule responds more to vibration stimulation than it does to movement or change of position. In spite of all these stimulating contributions the mechanism of the labyrinth is little understood, and it is still very doubtful what purpose parts of it serve. Its detailed connections are scarcely known. Is it any wonder that clinical progress is slow? Lack of this fundamental knowledge interferes with the proper interpretation of the vestibular tests.

*The Canadian Chairman's Address at the Combined Meeting of the American and Canadian Medical Associations at Atlantic City, Section of Laryngology, Otology and Rhinology, June 12, 1935.