From the University of Leeds: "The members of the Senate of the University of Leeds have received with profound indignation the communication of the Polish Ambassador concerning the treatment by the German authorities of the staff of the University of Cracow, and desire to place on record their strong condemnation of an action which can have no military justification and must be regarded as part of a deliberate and wanton attempt to destroy the culture and learning of the Polish peoples. The members of the Senate wish to convey through His Excellency to their Polish colleagues their deep sympathy with them in the loss and suffering inflicted by this brutal outrage which they regard as one committed not only against the University of Cracow but against the whole community of science and learning throughout the world. The members of the Senate are firmly convinced that the University of Cracow will be restored to its former position as a distinguished center of learning able to play a part worthy of its great traditions in the revival of the intellectual and spiritual life of a free and independent Polish nation."

Expressions of sympathy and indignation have also come from the University of St. Andrews; the University of Liverpool; the University of Manchester; University College, Nottingham; the University of Reading; the University of Sheffield; University College, Southampton; the University College of North Wales, Bangor; Queen's University, Belfast; and Glasgow University.—*The London Times.*

SCIENTIFIC BOOKS

A STUDY OF PNEUMONIA

Pneumonia, with Special Reference to Pneumococcus Pneumonia. By RODERICK HEFFRON, M.D. 1,086 pp. New York: The Commonwealth Fund. 1939.

IN 1931 the Massachusetts Department of Public Health inaugurated a study of pneumonia within the state. Ably organized and carried forward, the Massachusetts program has served as an inspiration and model for similar studies not only in many other states and cities of the union but in foreign countries as well. For the five years between 1931 and 1935 the study was financed by the Commonwealth Fund, and since that time the State Department of Health has assumed financial responsibility for carrying the program forward.

The contributions of the Massachusetts study to the knowledge of the disease and its treatment have been considerable, and the plan of organization is not the least of these. Detailed investigations of the epidemiology of pneumococcal pneumonia were made, and facilities afforded for the state-wide typing of cases and administration of antiserum under the supervision of competent advisers.

Another phase of the Massachusetts pneumonia study was devoted to the publication of three books which were designed to record a part of the experience acquired during the operation of the program. All three books have now been published by the Commonwealth Fund and together constitute an invaluable compilation of information concerning the pneumococcus and the disease processes to which this microorganism may give rise.

The first of these volumes, "Lobar Pneumonia and Serum Therapy," by Frederick T. Lord and Roderick Heffron, was published in 1936 and issued in a revised edition two years later. In 1938 Benjamin White's exhaustive treatise, "The Biology of Pneumococcus," which was written in collaboration with Elliott S. Robinson and Laverne A. Barnes, also appeared. Finally, Dr. Heffron, who served as field director of the program, has summarized in the present volume much of the literature pertaining to pneumonia and correlated the observations with those of the Massachusetts study.

Inasmuch as the majority of cases of pneumonia are caused by pneumococci of one or other of the various types, the greater portion of the book is devoted to pneumococcal pneumonia. The disease is treated from the specific etiological point of view as emphasized by Cole, although discussions of the pathogenesis, pathological picture, immunological aspects, epidemiology and clinical course of the disease deal adequately with features common to infections caused by pneumococci in general.

The section of the book concerned with the treatment of pneumonia is very comprehensive, particularly with reference to specific serum therapy, and although Dr. Heffron states in the preface that only certain of the studies published since 1936 are discussed, he has included a short section on chemotherapy which deals with sulfonamide compounds in current use in the treatment of pneumonia.

The extensive bibliography lists over 1,400 titles, and the text is admirably cross-referenced. The numerous tables present the most complete compilation of data referring to lobar pneumonia which has yet appeared.

It may be predicted safely that Dr. Heffron's book will serve for many years as the standard reference work on pneumonia, not only because of the great mass of observations which he has sifted and correlated, but also because of his outlook on the problems which appear still to be far from solution. The most pressing of such problems is that of the prophylaxis of pneumococcal pneumonia. Despite the many advances

which have been made in the past thirty years in the therapy of pneumonia and in the study of the biology of the pneumococcus, the problem of preventing the occurrence of infection has lagged far behind. This question is undoubtedly bound closely to that of the epidemiology of pneumococcal pneumonia, about which so little is known except in the case of localized epidemics, and the findings in such instances do not seem readily applicable to pneumonia as it affects the general population. As Dr. Heffron points out, efforts at the control of pneumonia have been concerned chiefly with therapeutic measures, because procedures designed to prevent the disease have been unsuccessful.

The present volume has been issued at a time when certain of the ideas concerning the treatment of pneumonia are undergoing revision, particularly with reference to the newer sulfonamide preparations which are finding wide-spread use. The publication of Dr. Heffron's book at this time is peculiarly appropriate.

The summary of the data concerning the treatment of pneumonia with specific antiserum and discussion of the theoretical background of this procedure offer a point of view which should not be forgotten in considering newer therapeutic procedures.

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SPECIAL ARTICLES

THE CHROMOSOMES OF THE CHIMPANZEE

IN the past, studies on primate chromosomes have been largely restricted to man, the diploid numbers of only two other species being on record, so far as we are aware. One of these is an unidentified species of brown Cebus monkey from South America which has 54 chromosomes, and the other the common Indian monkey, *Macacus rhesus,* which has 48 chromosomes in both sexes, just as man has (Painter, 1924). Since none of the great apes has been studied, the present note will be of interest, even though our chromosome

FIGS. 1*a*—2*b*

count must be taken as provisional and the material does not allow us to compare the morphology of the chromosomes in this ape with those of man.

The material was obtained at the Yale Laboratories of Primate Biology at the instance of the director, who subsequently very kindly allowed us to study it cytologically at the University of Texas.[1] The testes of two individuals were removed and preserved in three different fixatives (Flemming's, Bouin's and Helly's fluids), but as no attempt was made to separate the spermatogenic tubules other than making slices of the testes, good fixation is restricted to cells lying immediately adjacent to the cut surfaces. The testes of specimen "Don," twenty-two months old, and known to be sexually immature, showed no maturation stages, whereas those of specimen "Al," estimated age nine years, and sexually mature, exhibited all phases of spermatogenesis. Unfortunately, the fixation of metaphase chromosomes proved inadequate, though we have examined hundreds of plates and our counts are restricted to diakinesis stages when the pairs of homologous chromosomes are undergoing contraction to form the tetrads of the first maturation division. At diakinesis the nuclear wall is still intact with the chromosome pairs attached so that in effect the haploid number of chromosome pairs are arranged about the surface of a hollow sphere. This favors a wide separation of the elements, but their extended condition and irregular form—due in part to chiasmata—sometimes makes it difficult to separate elements which lie one above the other along the side walls of the nucleus. We have followed the practice of selecting the most favorable nuclei, then making a careful drawing and, if necessary, making an interpretation of a questionable complex. When all was complete a tally was made of the chromosome number. On this basis we have never found less than 23 nor more than 25 chromosomes, and nuclei which we consider free of ambiguities show 24 chromosomes, which is very probably

[1] Acknowledgment for assistance in connection with this study is gratefully made to Dr. Edgar Allen, Department of Anatomy, Yale School of Medicine, and Dr. James H. Elder.