



THE CEREBROSPINAL FLUID AND ITS RELATION TO THE BLOOD

A PHYSIOLOGICAL AND
CLINICAL STUDY

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TO
DR. ADOLF MEYER
AND
DR. MAURICE ROCH

PREFACE

For many years, but more particularly in the last two decades, medical literature has been flooded with studies on the cerebrospinal fluid and its relation to blood. But so often have the overwhelmingly abundant data been contradictory that it would seem wise to call a temporary halt, for the purpose of determining as far as possible the exact status to be derived from the results thus far obtained. The work presented in this book grew out of the author's attempt to organize the vast material—first for his own use—as a basis for orientation and research.

It is obvious that in any scientific study, the primary work consists in eliciting facts. These represent the bricks for the building of any system of sciences. The consecutive work of organizing and synthesizing the available data is fraught with difficulties. One of them lies in the fact that contradictory results are often obtained by various investigators in similar studies. Furthermore, in studies concerned with problems of biology, confusion arises very often from regarding the obtained results not as elementary units of a physiological or a pathological process, which should be evaluated in their mutual interrelationships, but as data sufficient in themselves to explain the whole process.

In the present work an attempt has been made to review comprehensively and also critically the facts and conclusions derived from the work of others and the author's own researches, so as to be able to formulate what might very nearly approach the actual state of our present knowledge.

Broadly speaking, the book may be regarded as subdivided into two parts: The first three chapters deal with the cerebrospinal fluid as such, its origin, mode of formation, and circulation. The second and largest portion of the book studies more specifically the physico-chemical constitution of the cerebrospinal fluid, as compared to that of blood in physiological and pathological conditions. In this part, the rôle and composition of the cerebrospinal fluid, and certain thera-

peutic procedures are discussed in the light of the present-day concept on the function of the barrier between blood and cerebrospinal fluid. Throughout the book, in the discussion of each topic, data *pro* and *con* have been presented, with critical reference to their validity. Nearly all of the chapters contain comments and brief summaries.

Evidently, then, this book is not specifically a technical laboratory guide, nor is it a text-book in the usual sense of the word, if a text-book is supposed to offer definite outlines of knowledge, all ready-made, for the student who is expected to absorb it as the scientific truth, without any need of thinking and questinoing. It has not been possible for me to give such a touch of finality to all of the material here presented. If any label is at all required, that of a reference book might be best suited for the purpose.

In presenting the book to neurologists, psychiatrists, physicians more specifically interested in other branches of medicine, physiologists, pathologists and biochemists, the author is aware of its many shortcomings. He finds, however, great satisfaction in the fact that in assembling and attempting critically to estimate often exceedingly contradictory data, the principal aim consisted in an effort to contribute to a clarification of unclear issues. I like to hope that such a critical and self-critical, undogmatic review of the assembled material will act as a stimulus for further investigations.

It is a pleasant opportunity to remember with gratitude Dr. Maurice Roch, Professor of Internal Medicine in the University of Geneva. It was in his clinic and under his encouragement and inspiration that I acquired the taste for research. It was largely through Dr. Lina Stern, now Professor of Physiology in Moscow, that I became especially interested in what she was the first to term the "haemato-encephalic barrier."

To Dr. Adolf Meyer, Professor of Psychiatry at The Johns Hopkins University, I feel greatly indebted for the facilities offered me to do the researches which formed the basis for this presentation.

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The Henry Phipps Psychiatric Clinic
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