Garrison's

History of Neurology

FRONTISPIECE. This Seventeenth Century painting by Rembrandt shows in the finest artistic manner one of the earliest demonstrations of brain dissection. In this work, Johannes Deyman, the overseer of the College of Medicine at Amsterdam, is examining the brain. The dura has been reflected and the calvarium is being held by a second demonstrator. This picture, painted in 1656, was intended to be hung as a companion-piece to the "Lesson in Anatomy" of Dr. Tulp, but the painting was severely damaged in a fire in 1723. In this remaining portion of the original painting only the hands and trunk of Deyman can be seen. (Courtesy of the Rijksmuseum, Amsterdam)

Garrison's

History of Neurology

REVISED AND ENLARGED

WITH A BIBLIOGRAPHY OF

Classical, Original and Standard Works in Neurology

BY

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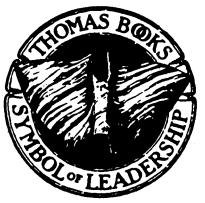

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TO MY CHILDREN –

SUSAN

BARBARA

ROBBIE

The charm of neurology, above all other branches of practical medicine, lies in the way it forces us into daily contact with principles. A knowledge of the structure and functions of the nervous system is necessary to explain the simplest phenomena of disease, and this can be only attained by thinking scientifically.

SIR HENRY HEAD, *Some Principles of Neurology*, 1918.

The past is always with us, never to be escaped; it alone is enduring; but, amidst the changes and chances which succeed one another so rapidly in this life, we are apt to live too much for the present and too much in the future.

SIR WILLIAM OSLER, *Aequanimitas*, 1889.

Knowledge always desires increase; it is like fire, which must first be kindled by some external agent, but which afterwards propagates itself.

SAMUEL JOHNSON, Letter to Drummond, 1776.

Every physician will make, and ought to make, observations from his own experience; but he will be able to make better judgment and faster observations by comparing what he reads and what he sees together.

JOHN FREIND, *History of Physic*, 1725.

Without history a man's soul is purblind, seeing only the things which almost touch his eyes.

THOMAS FULLER, *Holy and Profane State*, 1642.

Foreword

Dr. McHenry is unusual among young neurologists in having cultivated an avid interest in the history of medicine ever since his student days. When he was a resident in training at Boston City Hospital, he delighted us with essays published in the *New England Journal of Medicine.*

The history of neurology has been greatly neglected. The little-known text of the late Fielding Garrison was unique and long out of print. It began with an interesting discussion of the eternal dilemma of the ancients, the seat of the mind and of the soul, but was for the rest a compilation of information already available in Garrison's larger text on the history of medicine.

The history of medicine has many facets. The recording of factual information of necessity takes a great part of the effort of the historian. In the last hundred years, and particularly the last fifty years, the acceleration of accumulation of factual information has become stupendous, particularly in neurology, where the proliferation of eponymous signs and syndromes has reached staggering proportions.

With the lapse of time, the more important achievements stand in better perspective. Dr. McHenry has brought Garrison's history into the early years of the present century. But even more important is the development of ideas, the changing philosophies of nervous and mental action. One hopes that in later editions Dr. McHenry can attempt the parallel but more difficult task of delineating the changing patterns of neurological philosophy, a task not attempted again since Soury's monumental work at the turn of the century.

Meanwhile, we welcome the present attractive volume, which makes so much historical information readily available.

DEREK DENNY-BROWN

Introduction

While librarian to the Surgeon General's Library, Fielding H. Garrison produced "the most remarkable book on medical history ever published" and thereby became America's leading medical historian. In addition to this classic text, *An Introduction to the History of Medicine*, Garrison wrote a number of individual papers on the history of medicine and on medical specialities. In 1924 he had published a history of pediatrics for Apt's *System*, which he considered "the best and most decent thing I've ever done." Perhaps it was a similar challenge that led him to accept Dana's request to prepare a history of neurology.

In early 1925, Charles L. Dana, professor of nervous diseases at Cornell, asked Garrison to prepare an historical chapter for his *Textbook of Nervous Diseases*. During the spring of 1925, Garrison put together in a rather hasty fashion a short work on the history of neurology. Although Garrison himself had little interest in neurology, he had a profound grasp of the overall history of medicine. In order to obtain neurological assistance in the preparation of his history, in June he sent the manuscript to his close friend, Harvey Cushing. On June 29, 1925, Cushing replied:*

> Thanks for your amusing letter; also for letting me see this chapter for Dana's forthcoming book. I did not know about it. Far be it from me to criticise anything you write. I always enjoy it to the full. My only hints would be that you make a few more paragraphs so that the breaks are a little easier on the reader. You are a little hard on the late Roman emperors after you got rid of "that old goat Tiberius;" and I doubt if the son of the giant, II Samuel: 21-20, is an acromegalic. Anyhow, I never knew of one with supernumerary digits. Moreover they don't procreate.
>
> These are trifles. I enjoyed the historical chapter hugely, and Dana will have to work hard to live up to it.

*From the Cushing-Garrison correspondence in the Yale Historical Medical Library.

On July 8, Garrison again wrote to Cushing:

> That post-bellum neurology is certainly a brain-cracker and I feel very sour and cantankerous that the experts haven't brought more chronological order and system to it. Tilney's book, is of course, wonderful, but not a single date! Jelliffe wallows all over the country. Can you give me the dates of any of the following syndromes: Schmidt, Avellis-Spiller, Jackson, Bonnier, Cestan-Chenais, Tapia? Tilney puts them in the medulla, Jelliffe in the pons: which is it?

Since Garrison's papers could not be located, Cushing's reply to this letter is not available. Presumably Cushing furnished the correct answers, however, for in the text of his work, the dates as well as the location of the lesion appear to be correct. Later in July, Garrison again gave Cushing the manuscript of his work.

> By July 15, I have to finish my history of Neurology for Dana's book. Will you cast your eye over the enclosed, which goes up to the 17th century, and let me have your slant on it—criticize all you want to, only please let me have it by the 15th.

After preparing his chapter for Dana, Garrison's interest in the history of neurology seems to have been stimulated. In the first edition in 1913 of his *History of Medicine*, as well as in the second and third editions, the nervous system and neurology were hardly mentioned. In his fourth edition in 1929, however, there is a great deal of material on the nervous system and neurology, much of it not included in the Dana chapter. Similarly in his *Checklist of Texts Illustrating the History of Medicine*, Garrison gives unusually thorough coverage to neurological works.

When Garrison's "History of Neurology" finally appeared, he was far from satisfied and again wrote to Cushing, this time with the lament, "The printing of my history of neurology is a dreadful botch." Garrison did nothing further to revise or improve the work, and there is little mention of this chapter in the various articles on Garrison. His history was not separately reprinted, and existing copies of Dana's 10th edition are now difficult to locate. There were no copies, for example, in either the Welch Medical Library at Johns Hopkins nor in the National Library of Medicine.

The republication of Garrison's "History of Neurology" was suggested several years ago by Henry Viets and John Fulton, both of whom considered this worthwhile for the following reasons: First, it would be a loss to medical historians and neurologists to let Garrison's work lie fallow in Dana's last edition. Even though Garrison was not a neurologist, his unique comprehension of all aspects of the history of medicine led him to write a most concise survey of the background of neurology. Secondly, Garrison's work, in a revised form, is needed for an even more important reason: There is no adequate separate history of neurology available.

Knowing that Garrison himself was not satisfied with the history as it appeared in 1925, and that a closer look at Nineteenth Century neurology needed to be taken, the present writer has undertaken the task of revising and enlarging Garrison's original work. Garrison's chapter in Dana's book was short, covering only the major events in the history of neurology from antiquity to the early Twentieth Century. His chapter also included some psychiatry, mentioned endocrinology and touched on other topics now considered to be unrelated to neurology. Since these parts belong in the history of other specialties, they were omitted in this revision, eliminating about one third of the original text. The scope of the work, however, has been expanded four- to five-fold, with particular emphasis on the development of modern neurology in the Nineteenth Century.

The present text is divided into eleven chapters. The first four deal with the gradual development of neurology on a background of anatomy and physiology of the nervous system and early clinical medicine, from antiquity through the Eighteenth Century. The last seven chapters are concerned with the evolution of neurology in the Nineteenth Century, with separate chapters devoted to neuroanatomy, neurophysiology, neurochemistry, neuropathology, clinical neurology, the neurological examination and neurological diseases. Although this division is arbitrary, it follows in general the lines of development naturally taken by neurology.

Garrison's contributions are primarily the first three chapters, and to a lesser extent, the next three chapters. The last five chapters are by the present writer. This work purposefully ends about the same time Garrison ended it, namely World War I. A few unusual works and outstanding contributions of the first half of this century

have been included, such as the discovery of dilantin. To add a detailed or even a brief history of neurology for this century would be far beyond the perspective of the present writer.

In addition to the expansion and revision of Garrison's text, a bibliography of over one thousand articles, monographs, textbooks, atlases, articles, etc., of original, classical and standard works in neurology has been added. The bibliography was compiled and included because neurologists always seem to want the original reference to a particular topic. As Dr. Johnson told Boswell, "Knowledge is of two kinds. We know a subject ourselves, or we know where we can find information on it." Any historical errors or bibliographical omissions in this work cannot be blamed on Garrison; these are the responsibility of the "reviser." In the text of this book, these works are all referred to by parentheses; e.g., *Gowers (1875).* This bibliography includes most of the works on the nervous system and neurology in Garrison's *Checklist of Texts Illustrating the History of Medicine.* In many ways it is a revision and expansion of the nervous system and neurology sections of Garrison's *Checklist*, but it certainly does not include all articles, books and other works on neurology.

A separate list of references to works on the history of neurology is also included, and in the text are referred to by a reference number; e.g., *Souques.*[325]

In addition to the two bibliographies, more than two-hundred illustrations have been included. Except where referred to otherwise, the illustrations for this work were obtained through the courtesy of the History of Medicine Division of the National Library of Medicine.

Several works covering particular aspects of neurological history have been published in the past seventy-five years, but most are limited in scope. These include Thomas K. Munro's *A History of the Chronic Degenerative Diseases of the Central Nervous System,*[251] Israel Weschler's "Introduction to the History of Neurology" (in his *Textbook of Clinical Neurology*[381]), and Walther Riese's *A History of Neurology.*[297] The monumental work of J. Soury, *Historie des doctrines de psychologie physiologique contemporaires. Les functions du cerveau,*[326] and M. Neuburger's *Die historische Entwicklung des experimentellen Gehirn-und Rucken-*

marks physiologie von Flourens[259] are restricted to early history.

Two of the most significant works are Laehr's[200] review of the literature of neurology from 1459 to 1799, and Souques[325] study of Greek neurology. The early history of anatomy and physiology of the nervous system has been summarized by Singer.[320-323] The history of neuroanatomy is thoroughly covered by Rasmussen,[289] and Mary A. B. Brazier[33-40] has admirably presented all aspects of the history of neurophysiology.

Notable monographs of certain facets of neurological history have been published by Fearing,[101] Liddell,[219] Keele,[187] Belloni,[19] Poynter[285] and Kölle.[196] One of the best sources of neurological history is Haymaker's *Founders of Neurology*,[157] which provides further references on individuals contributing to neurology in the Nineteenth Century. The most significant work on the history of neurology has come from Henry Viets,[356-370] John Fulton,[109-126] Max Neuburger,[259-266] Oswei Temkin,[343-350] Edwin Clarke,[58-61] J. M. D. Olmstead,[271-275] and W. Riese.[292-298] Particularly good general surveys are given by Brain,[30] Cobb,[62] Jefferson[179] and Viets.[367] The history of neurology also has been included in chapters of standard medical history texts.[120, 203, 241, 323] Varied aspects of the background of neurology are presented in several other monographs[205, 221, 252] and numerous individual short articles [7, 25, 82, 99, 191, 194, 233, 290, 294, 324, 333] of varying quality. In the revision of Garrison's chapter these works have been freely referred to.

This work, when originally written, was described by Garrison as his "jitney history of neurology." The aim of the present work in some ways is similar: It is not primarily intended to be a definitive history of the subject. The main purpose of this book is to present a broad survey of the background of neurology from antiquity to the beginning of the present century. Furthermore, this was not necessarily written as a scholarly work for historians, but as an enlightening pastime and reference for neurologists. It is meant, to paraphrase Osler, to be an "aeroplane flight" over the history of neurology.

LAWRENCE C. MCHENRY, JR.

Contents

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History of Neurology

I

Ancient Origins

Men will not escape the test thou settest
To prove them sufferers from the sacred ill.
For quickly will they bend and forwards tilt,
As to earth it draws them. Smeared by froth
From their own mouths, hither and thither will they turn,
And wallow on the ground.

HYMN OF ORPHEUS

The first recorded reference to the nervous system is found in ancient Egyptian records. The **Edwin Smith Surgical Papyrus,** a 1700 B.C. copy of a manuscript composed about 3500 B.C., contains the first use of the word *brain,* along with a description of the coverings of the brain and the fluid beneath them. The surface appearance of the brain was likened to the film and corrugations that are seen on the surface of molten copper as it is cooling. This description was from Case 6, a gaping wound in the head with a compound comminuted fracture of the skull and rupture of the meningeal membranes.[97, 132, 387]

The Edwin Smith Papyrus contains thirteen such case descriptions of skull fractures probably due to war injuries. Bleeding from the nose and ears following fractures are mentioned, as well as disturbances of speech. Case 20 possibly contains a description of aphasia.

A man having a wound in his temple . . . perforating his temporal bone . . . ; if thou ask of him concerning his malady . . . he speak not

> to thee, . . . copious tears fall from both his eyes, so that he thrusts his hand often to his face that he may wipe both his eyes with the back of his hand as a child does, and knows not that he does so.

In this same case, convulsions following cerebral stimulation may be inferred.

> If thou puttest thy fingers on the mouth of the wound . . ., he shudder exceedingly . . .

The expression *shudder exceedingly* appears six times in the Papyrus. It most likely denotes generalized or focal seizures resulting from cortical irritation from examination or probing of the wound or from the injury itself.

In Case 8, "a comminuted fracture of the skull displaying no visible external injury," a residual hemiplegia is described with loss of power in the limbs on the same side of the body. This could represent residual contralateral compression of the cerebral peduncle against the tentorium from brain swelling after a head injury. The patient was described as "shuffling with his sole," and "walking with his sole dragging." His hand showed contractures, "with nails in the middle of his palm." A residual third or sixth cranial nerve injury was manifested by the fact that "his eye on that side is askew."

In the art of the ancients two notable examples of neurological disease are portrayed. The earliest is the funeral stele of the priest Ruma. This shows atrophy and shortening of the leg, probably as the result of poliomyelitis. This Syrian work of art, dating from the Nineteenth Egyptian dynasty, is the oldest example of neurological disease in art. Another work demonstrating a neurological disorder is the Assyrian masterpiece The Dying Lioness, from the Palace of Assurbanipal (*circa* 650 B.C.). In this relief the lioness's spinal cord has been severed by arrows. The stricken creature is shown crawling toward her tormentors, snarling furiously and dragging her paralysed limbs.

During this era diseases were often considered to be due to possession by spirits. Incantations were used to treat people seized by such demons. In one ancient Mesopotamian incantation, (4000 to 3000 B.C.) Tiu, the evil spirit of headache, has attacked a victim

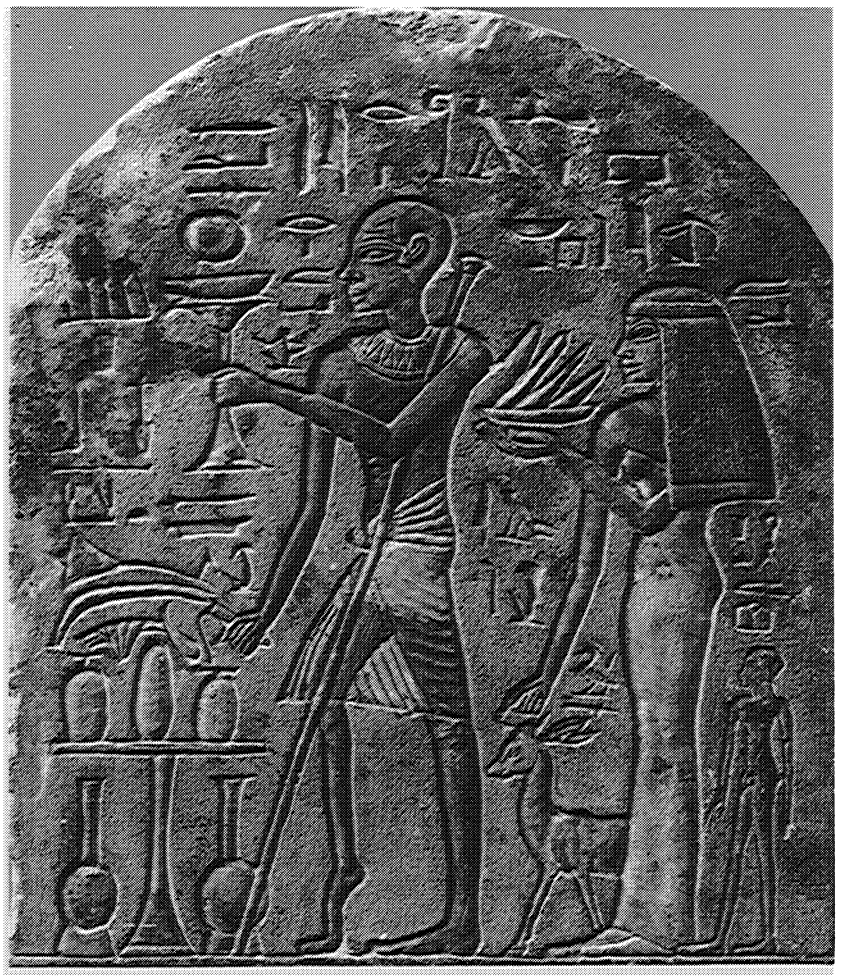

FIGURE 1. The funeral stele of the priest Ruma from the 19th Egyptian dynasty. This 3000 to 4000 year old work is the first portrayal of neurological disease and is probably the residua of poliomyelitis. The priest Ruma accompanied by his wife and daughter is shown approaching a small table carrying offerings to the god Astarta. His leg is shortened, and his foot is atrophic. He is able to walk only on his toes using a cane. During this ceremony, he holds his cane pressed against his body with his arm. (Courtesy of the Ny Carlsberg Glyptothek, Copenhagen)