SIEGEL

GALEN’S SYSTEM OF PHYSIOLOGY AND MEDICINE

AN ANALYSIS
OF HIS DOCTRINES AND OBSERVATIONS
ON BLOODFLOW, RESPIRATION,
HUMORS AND INTERNAL DISEASES

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for her untiring support

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‘We ought not to reject the ancient art as non-existent, or on the ground that its method of inquiry is faulty, just because it has not attained exactness in every detail, but much rather, because it has been able by reasoning to rise from deep ignorance to approximately perfect accuracy, I think we ought to admire the discoveries as the work, not of chance, but of inquiry rightly and correctly conducted.’

Hippocrates

Ancient medicine xn, vol. i, p. 33. Translated by Jones.
A great number of specialized contributions, published in the past, deal with various aspects of Galen’s work. But the need for a systematic analysis of his medical and physiological works has not yet been fulfilled. The purpose of this book is to study the important aspects of Galen’s physiological and clinical writings and to explain the methodical structure of his teachings. We shall find that he attained a medical system of great consistency in spite of many obvious shortcomings. He combined the great medical and physiological knowledge of his predecessors, most of whose works have since been lost, with his own observations and ideas to build a monumental encyclopedic work. This comprised more than 120 books which correspond, in modern print, to nearly 10,000 pages of Greek text. In spite of the loss of about onethird of Galen’s treatises what now remains is so vast that a complete survey of his writings is almost impossible.

Galen’s work was the result of nearly fifty years of research, practice, writings, and lecturing. Contradictions are to be expected in any literary work which covers an entire life span. The present study of Galen’s work will analyze his writings without considering the evolution of his own thought which would demand a thorough study of the chronological order of his ideas. Extensive work on the relation of Galen’s ideas to those of his predecessors has been done1. The analysis of his discussions and the critique of their ideas shed much light on Galen’s own process of thought and the evolution of his ideas. But a thorough study of this problem would divert the attention of the reader from the outline of Galen’s own ideas as planned for this study, and would increase the volume beyond the limits set forth at the start. Further difficulties would confront such a task because of later additions and errors committed by scribes of Galen’s treatises.

It would exceed the scope of this book to analyze in all instances the historical roots of Galen’s medical and philosophical thought. Also

1 Dobson (1927), Prendergast (1930), Steckerl (1958), Deichgraeber (1930), Wellmann (1925); frequent references throughout the book; most data on these physicians can be found in Galen’s treatises (index volume).

the relation between Galen’s ideas and modern medical concepts can be discussed only in regard to a few problems.
The first half of this book will deal with Galen’s physiology of respiration and blood flow. The second, clinical half of the book, will explain important aspects of Galen’s humoral doctrine and discuss his description of a great number of diseases.

Galen defined physiology as the study of the predominant and regulating forces of the organism. According to his definition, physiology comprises a description of the basic constituents of the body, of generation and formation of the fetus and of the entire anatomy. It seems, therefore, justified to employ the term physiology in the title of this book although the present meaning of this word is more limited than it was in Galen’s time.

Since Galen included anatomy in the definition of physiology, his anatomical treatises discuss also the function of the organs. Moreover, he reported in these chapters a great number of experiments on animals and even man. His anatomical treatises, which are based on the most thorough dissection of all parts of animal and human bodies, have been discussed, annotated and completely translated into English by others. Therefore, this book will only deal with the physiological aspects of Galen’s anatomical treatises.

Galen discussed four other principal fields of medicine besides physiology and anatomy: these are pathology and the three subjects of therapy, dietetics, pharmaceutics and surgical procedures. He defined pathology as the ‘general and individual affections and diseases, causes, symptoms and all their variations ... and the study of the affected parts of the body’.

The second part of this book will deal with many aspects of ‘pathology’. The three therapeutic fields will not be included in this book.

We also have here no space to deal with the psychological, neurological and psychiatric aspects of Galen’s treatises. These subjects and a de-

4 In a recent editorial of the J. amer. med. Ass. 193: 175-176 (1965) the question has been asked: What is anatomy? The answer was that this subject includes genetics, tissue culture, virology, anthropology, comparative neurology, physiology and many others. Thus, Galen was not so wrong in combining the description of function and structure of the organs and calling it ‘anatomy’.
5 See bibliography, mainly the works of Singer, Simon, Duckworth.
tailed analysis of Galen’s physiology of the sense organs will be the
topics of a later publication.
Some repetitions of important viewpoints were unavoidable in order
to make each chapter of this book a well-rounded and independently
intelligible unit. Although an attempt is made to substantiate the views
expressed in this book, a complete bibliography and discussion of every
divergent opinion would exceed the limits set for this work.
References to text and quotations indicate in the foot notes author
and page; the year is given only when the bibliography lists several
works of the same author. The bibliography at the end of the book
contains the complete references. Further, the bibliography will include
the important, recent editions and translations of Galen’s treatises
into modern languages. It is, however, not intended to present a
complete bibliography of all editions or translations of Galen’s treatises.
The drawings in the text are designed to facilitate the understanding
of Galen’s physiological concepts but do not represent exact anatomical
proportions.
In order to convey an impression of Galen’s personal style and of
the great clarity of his thought, translations from the original Greek
text of his writings will be given. [. . .] square brackets in the quotations
indicate the interpretation by the author of this book. The quotations
are my own translations from the Greek text of the Kuehn edition of
Galen, unless indicated otherwise. The source of quotations from other
translations is indicated in the footnotes.
We must always keep in mind that the medical historian should
consider Galen’s errors equally in importance to his discoveries. Any
other approach to the analysis of Galen’s work would be biased and
misleading. Such an attempt, however, faces the difficulties which
Plato already pointed out in his VII epistle:

‘It is this instruction which will implant, with toil and pain,
the well-chosen knowledge to the well-educated ...For it is necessary
to learn at the same time the false and true aspects of the entire
subject...and this is the reason why every serious man in dealing
with serious subjects should carefully avoid writing lest he be exposed
to reproach and misunderstandings.’8 R E Siegel

8 Plato, Epistles: VII. 343E-344C (Loeb class, ed., p. 538 ff).