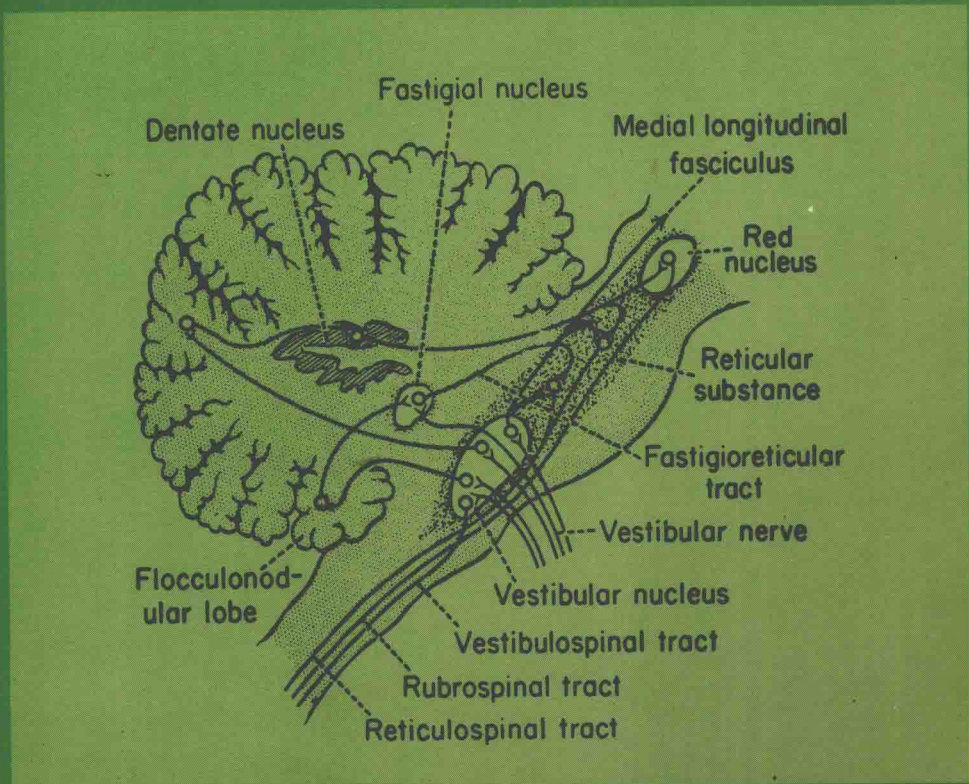


ORGAN PHYSIOLOGY

STRUCTURE AND FUNCTION OF THE NERVOUS SYSTEM



GUYTON

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AND FUNCTION
OF THE
NERVOUS SYSTEM

ARTHUR C. GUYTON, M.D.

*Professor and Chairman of the Department of Physiology
and Biophysics, University of Mississippi School of Medicine*

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PREFACE

This text (almost entirely derived from Textbook of Medical Physiology, Edition 4) is intended for those persons—medical students, paramedical students, students of psychology, students of basic physiology, and others—who wish to study the general organization and function of the nervous system without the detail often associated with a research-oriented text. Also, neuroanatomy is presented only to that extent which is important to understanding how the nervous system performs its many tasks; this means mainly emphasis on nerve tracts and on function of the nerve signals when they reach their destination.

I have hoped above all to present the beauty and logic intrinsic in the design of the nervous system—the automaticity of such feats as walking, sleeping, waking, and even search for food; the inbred pace-setting effects of emotions; and the almost magic processes for channeling, storing, and deciphering information. The nervous system is an overall condition of our bodily function. It is a computer with capabilities that have never yet been duplicated by the most massive electronic computer. And it is that quality of our being that makes life meaningful, thoughtful, exciting.

At many points in the text, one will find discussion of neurological problems as examples of abnormal function of the nervous system. These are presented not with the view that this book is dedicated only to medical students but, instead, because of the enlightening experience that a student can achieve when he correlates basic conceptual knowledge with happenings in the world about him. Indeed, in many instances, understanding the neurological condition adds immeasurably to one's understanding of basic neurophysiological concepts. Therefore, even for the non-medically oriented student, the discussions of abnormal function in the nervous system are meant to give values that are difficult to establish in other ways.

I wish to thank many others who have made this text possible, particularly Mrs. Billie Howard and Mrs. Judy Bass for their excellent secretarial services, Mrs. Carolyn Hull for preparing most of the figures, and the staff of the W. B. Saunders Company for its continued excellence in editing and preparing the text for publication.

ARTHUR C. GUYTON

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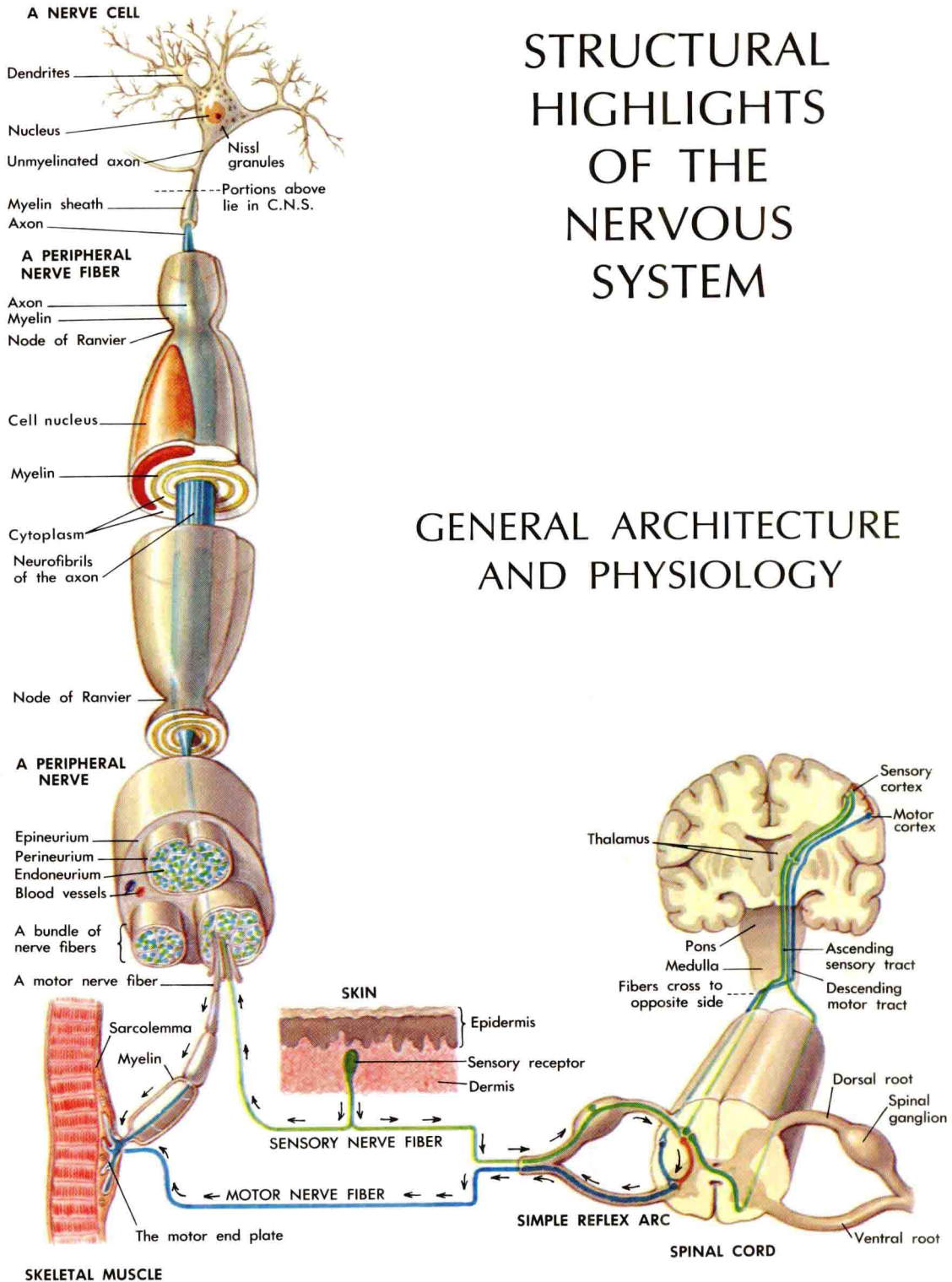
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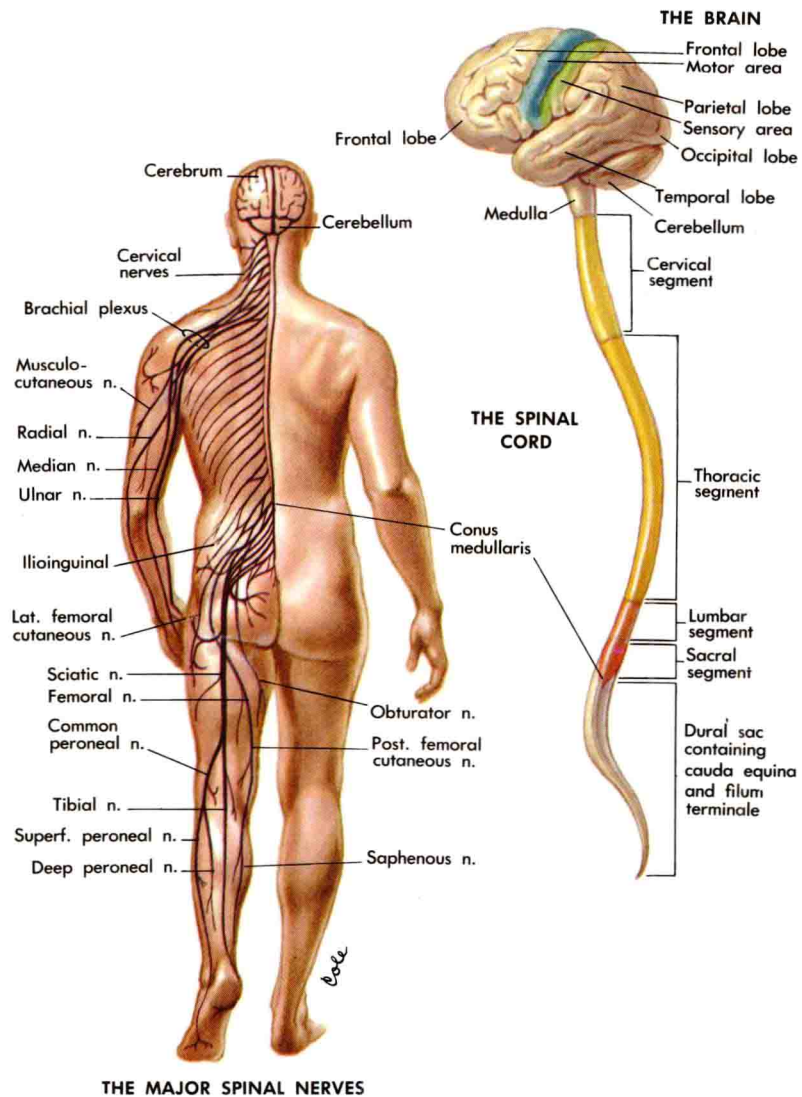
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STRUCTURAL HIGHLIGHTS OF THE NERVOUS SYSTEM

GENERAL ARCHITECTURE AND PHYSIOLOGY



BRAIN AND SPINAL NERVES



AUTONOMIC NERVES

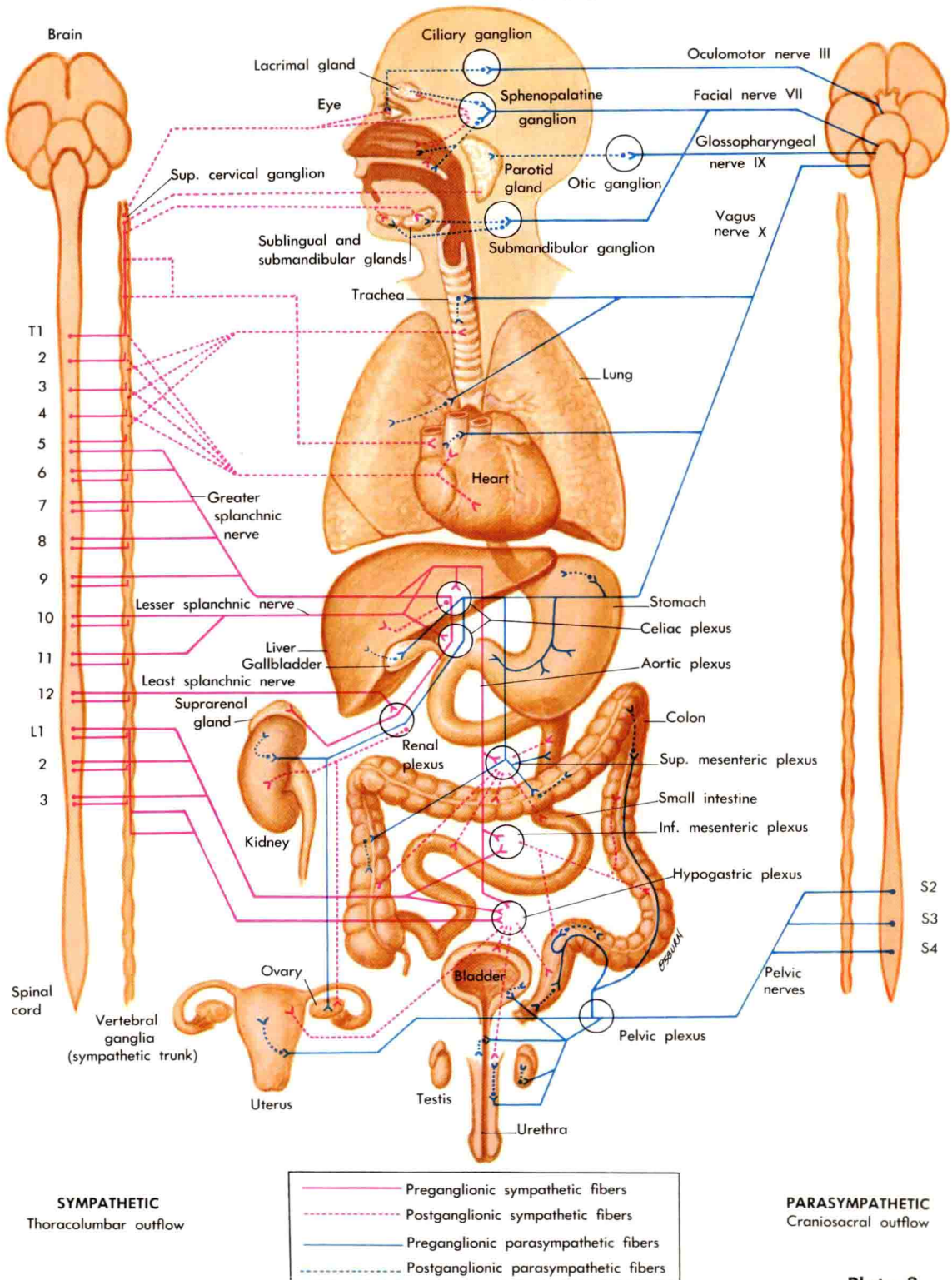


Plate 3