

PREFACE

This volume deals with what was until recently a neglected subject. Thus, although glial cells were discovered nearly a century and a half ago it is only during the past decade and a half that any concerted attempts have been made to understand their functional role. Even these are insignificant when compared with current research on the physiology of nerve cells which (as shown by a recent computer search of the literature) outstrips that on neuroglia by about 12 to 1. The concentration of research on the conducting elements of the nervous system is, of course, inevitable. However, it is indisputable that an adequate understanding of the functioning of those elements must incorporate knowledge of their interactions with the neuroglia that delimit the brain microenvironment and constitute half of the volume of the brain.

The papers contained in this volume are based on the third Company of Biologists Ltd. Discussion Meeting which was held in April 1981 at Titisee in the Black Forest. They cover a wide range of topics. These include various aspects of the structure of neuroglia, their role in blood-brain barrier systems, in the control of the ionic composition of the neuronal environment, the metabolic interactions between glial cells and neurones, the role of neuroglia in transmitter inactivation, in myelin synthesis and in neuronal differentiation and growth. The contributions provide authoritative accounts of recent advances in these topics and, in addition, indicate the potential and likely direction for future research.

I am grateful to the friends and colleagues who travelled to the Black Forest to create the stimulating and enjoyable meeting on which this volume is based. I am particularly indebted to Herr Dr Hasso Schroeder of Karl Thomae GmbH for once again collaborating with the Company of Biologists Ltd. in financing the Discussion Meeting and for his many kindnesses to the participants. At what other meetings are the afternoon deliberations enlivened by the arrival of a file of waiters bearing champagne? Finally, it is a pleasure to acknowledge the help of Mrs M. V. Clements for her invaluable assistance in organising the meeting.

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