

Preface

Advances in environmental physiology are heavily dependent on developments in associated instrumentation. This very strong tie ensures a healthy interest in instrumentation and a concern for appropriate development. The evolution of instrumentation is a continuous process, however times must be selected for 'state-of-the-art' reviews of technology. The last major review on instrumentation for plant ecophysiology was by Sestak, Catsky and Jarvis in 1971 (*Plant Photosynthetic Production: A Manual of Methods*, Dr W. Junk, The Hague). The date of this publication has been taken as the starting point for the reviews comprising this book.

The emphasis on instrumentation for studies on convenient, sedentary plants still remains, although devices may be equally applicable to animal ecophysiology.

This volume aims to review significant developments in instrumentation from 1971 and covers a wider range of measurements than previously. The book is effectively divided into two parts. The first is concerned with the measurement of major environmental variables, with a general applicability to biological organisms. The second part is concerned with physiological measurements on plants. In presenting their reviews, the authors were asked to consider several points: relevant biological ranges of measurement; terminology and units; accuracy, precision, response times and long term stability; techniques of calibration and provision of standards; practical problems and data handling. It was not possible within the scale of this book to discuss every aspect of environmental measurement. In particular, the edaphic environment has not been dealt with in any detail and this important topic may well form the subject of future publications.

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