

Björn, L.O. (ed.): **Photobiology. The Science of Light and Life**. – Kluwer Academic Publishers, Dordrecht – Boston – London 2002. ISBN 1-4020-0842-1. 451 pp., € 160.00, USD 154.00, GBP 102.00.

Lars Olof Björn is a well-known photobiologist who published in 1973 a tiny book on photobiology in Swedish. German edition of this successful book followed in 1975 (for review see *Photosynthetica* 10: 355-356, 1976) and English edition in 1976 (*Photosynthetica* 11: 475-476, 1977). After retirement, this Swedish professor prepared the reviewed, more voluminous book. Out of its 17 chapters, Björn wrote 11 chapters, and in further two chapters participated as co-author. Further 8 authors were from Australia (2), and from Finland, Germany, The Netherlands, New Zealand, Norway, and the U.K. (1 each).

Almost half of the chapters deal with general topics of photobiology, *i.e.* properties of light (= visible radiation). They describe nature of light, its interaction with matter, principles, nomenclature, and quantification (a very important chapter), light generation (natural and by artificial sources) and control, methods and devices for measurement of radiation, action spectroscopy (especially in plant biology), effects in living organisms, photochemical reactions of light perception and regulation, *etc.* The following eight chapters deal with special topics, interesting for plant and animal physiologists and medicine doctors. These topics are design and functions of the compound eye, phototoxicity (plant defence, fungal plant parasites, disturbances in men, animals, and aquatic environments), effects of UV radiation and ozone depletion, vitamin D (production, distribution, and physiological roles in plants and animals), photobiology of human skin, plant photomorphology and photoperiodism, biological clock, and finally bioluminescence.

The long experience of L.O. Björn as university teacher is reflected in the very useful last chapter "Hints for teaching experiments and demonstrations". Sixteen parts of this chapter show how to make demonstration

experiments with coloured leaf extract in acetone and with Benham disk, how to demonstrate wave-nature of light, singlet oxygen, UV damage and photoreactivation, chromatic adaptation, photomorphogenesis, and roles of phytochrome and blue or red radiation in plant development. Further experiments show chlorophyll synthesis, separation of chloroplast pigments by paper chromatography, functions of xanthophyll cycle in plants, photoconversion of rhodopsin in cattle eyes and of provitamin D, and bioluminescence.

Some of properties and reactions of photosynthesis, chlorophylls, carotenoids, and biliproteins are briefly described in chapters 1, 2, 6, 7, 8, and 16. Nevertheless, a specialised chapter on photosynthesis is missing which fact, according to my opinion, lowers value of the book for advanced students and researchers that wish to learn or improve their knowledge of this interesting branch of science.

Printers who produced this book are not mentioned in the colophon. For a long time I have not seen a book printed so badly and not professionally. Numerous typing errors, bad layout of pages, not unified style and shape of figures, varying size of indexes, irregular space between lines, empty half-pages in the middle of chapter (*e.g.* on pp. 156, 243, 370), varying form of references, *etc.* devalue this book. In the present form it looks more like a mimeographed lecture notes than a textbook produced at the beginning of 21<sup>st</sup> century. Part of failure must be ascribed to the authors – *e.g.* variance in equations, dimensions, careless proof reading, errors in the subject and organism index. I also think that the amount of references in introductory chapters is too small. I regret that more formal attention has not been paid to preparation of the book – was it done in a hurry?

Z. ŠESTÁK (*Praha*)