Chegwidden, W.R., Carter, N.D., Edwards, Y.H. (ed.): **The Carbonic Anhydrases: New Horizons.** – Birkhäuser Verlag, Basel – Boston – Berlin 2000. ISBN 3-7643-5670-7 (hardback). 619 pp., sFR 348.00, DM 398.00, öS 2 909.00.

The whole book is devoted to one enzyme – the family of carbonic anhydrases (CA). From the point of view of the importance which this enzyme has for all living organisms it is not a surprising fact. Isoforms of the enzyme are spread accross the entire animated nature where they play important roles in diverse metabolic processes. The volume was compiled by adapting and updating contributions from the 4th International Conference on the Carbonic Anhydrases, held in Oxford, England, in 1995, and is dedicated to two scientists, Richard E. Tashian and Per J. Wistrand, who work in CA research for many years. Motives for publication genesis were, according to editor's own words, to provide a comprehensive compendium of information on the many facets of CA families, and to assemble and integrate the latest data across the broad range of scientific disciplines and applications in which the enzyme is involved.

The hard-bound book printed on quality acid-free paper contains altogether 31 contributions of 50 scientists from the U.S.A. (22), Sweden and the U.K. (7 each), Finland (4), Japan (3), Germany and Italy (2 each), Australia, Denmark, and France (1 each). The particular contributions are written in the form of review papers with many illustrations, graphs, schemes, and tables. The book is complemented with a subject index and a list of contributors containing their business and e-mail addresses. The contributions are arranged into six chapters in addition to three introductory, more general papers which deal with the history of CA research, the enzyme discovery, its activity, and evolution and distribution of the CA gene families.

Animal CA isoforms are the topics of 5 chapters comprising about 90 % of the papers. They describe X-ray crystalographic studies, folding, stability, mechanism of catalysis, activation, active-site engineering, distribution, and function of CA in mammals. A series of papers is concerned with roles of CA in animal physiology, *i.e.,* in respiratory gas exchange, acid-base regulation, gastrointestinal tract, musculoskeletal, nervous, and reproductive systems, and cell metabolism and growth including oncogenesis. Clinically related studies indicate links between CA activity and various diseases, and the potential of CA inhibitors in their treatment.

Only one chapter (10 % of book volume) is devoted to other than animal CAs reflecting the fact that CAs of animal origin attracted much more attention than those from any other source in the past. The four contributions provide overviews of plant, algal, and bacterial CAs and depict the structure and catalytic mechanisms of plant CAs. The last chapter, Postscriptum, presents personal perspectives of the CA research history (R.E. Tashian) and of CA significance in clinical medicine (P.J. Wistrand).

The book will be useful in particular for those who are interested in animal CAs, especially it can be valuable for scientists working in medical research. Microbiologists, plant biochemists, and physiologists will also find recent information on plant, algal, and bacterial forms of CA here.

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