Preface

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Recently a colleague announced at a conference that we were entering the age of “Integrative Plant Biology” where cross disciplinary, big picture projects spanning biochemistry, physiology, genomics, physics, maths, and engineering would dominate the landscape of plant biology for many years to come. Most of us who passed through Barry Osmond’s hands as students or post-docs would agree that they benefited from just that kind of training in plant biology decades before our modern “omics” label was applied to such approaches. Barry’s ability to span scales from the enzyme to the ecosystem and break down the barriers between disciplines is unparalleled.

Barry’s contribution to plant biology in general and photosynthesis research specifically is driven by that unquenchable “wonder” at the complexity of the process and often the simplicity of the solution to environmental challenge. The mechanisms of C-4 photosynthesis and CAM metabolism or photoprotection and photoinhibition—topics covered in this special issue—may not have been discoveries Barry is directly credited with but the context of these pathways in the environmental response of plants undoubtedly is. Without his talent for integration of different fields, disciplines and people, photosynthesis research would be very much the poorer.

Barry Osmond (FAA, FRS, Leopoldina) has been leading and fostering plant sciences throughout his career,

which includes senior appointments at the Desert Research Institute in Reno and Distinguished Professor at Duke University in Durham. He was the Director of the former Research School of Biological Sciences at the Australian National University in Canberra and the President of Columbia University Biosphere 2 Center in Tucson. In 2001 Barry co-chaired the 12th International Photosynthesis Congress held in Brisbane. He served as Treasurer of the International Society of Photosynthesis Research in 2004–2010.

This special issue entitled “Assimilating Photosynthesis—Quintessence of Life’s Variations and Vital Inefficiencies” crystallized from the symposium held in honor of Barry Osmond in Jülich on 20th of April, 2011. In addition to the papers of symposium participants, it also includes contributions of people who were not able to attend the symposium. We would like to express our sincere gratitude to all the colleagues who directly or indirectly provided support to the organization of the symposium and the preparation of this special issue.

On behalf of a vast array of students, post-docs and colleagues it is a pleasure to celebrate Barry Osmond’s contribution to Photosynthesis Research. What follows this preface is a more personal perspective from one of Barry’s closest colleagues and fellow integrative plant biologist Olle Björkman.

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Water color painting by Cornelia Büchen-Osmond (Reproduced with kind permission of © Cornelia Büchen-Osmond 2010)

Barry Osmond and his daughter Sarah (1974). Picture taken by Jeanette S. Brown (Carnegie Institution of Washington, Stanford)

Barry Osmond on his way to work, Biosphere 2 Center (2003)