THE FAMILIES AND GENERA OF VASCULAR PLANTS

Edited by K. Kubitzki

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The Families and Genera of Vascular Plants

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XIV *Flowering Plants · Eudicots*

Aquifoliales, Boraginales, Bruniales, Dipsacales, Escalloniales, Garryales, Paracryphiales, Solanales (except Convolvulaceae), Icacinaceae, Metteniusaceae, Vahliaceae

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With 76 Figures

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Preface

It is with great pleasure that I present volume XIV of the Families and Genera of Vascular Plants, a further step forward in the treatment of asterid (sympetalous) families of the eudicots. Recent advances in molecular systematics have necessitated an extensive rearrangement of the families, including the lumping, splitting or revival of well-known family concepts or, in some cases, the creation of completely new ones. To cite one example, the position of the Aquifoliaceae has long been unclear—in previous classifications the family has peregrinated through at least eight orders, whereas now it is placed in a new order at the base of the asterids, the Aquifoliales, which also comprise a few other presumably related families. The Icacinaceae, which always have been a problematic group for taxonomists, can now be presented in a substantially revised circumscription, although their closest relatives still remain unknown. It is worth remembering that early naturalists, who based their classifications on visible traits and geographical patterns, achieved classifications that have proven useful for integrating findings from both non-molecular and molecular data. Thus, the five families of the Dipsacales as treated in this volume are today confirmed as a monophylum—already in the 19th century, they had been recognised as a natural group but, despite much effort, their interrelationships still are not understood in all details.

It is with pride that we can include in this volume the monumental treatments of the two very large families Solanaceae and Boraginaceae, resulting from year- (if not life-) long involvement of their two main authors accompanied by numerous co-workers dealing with specific aspects, so that their treatments rest on broad factual bases. These include fully revised classifications of the two families as well as a wealth of biological data. Boraginaceae, which are predominantly herbaceous, comprise a wide range of growth forms such as rhizomatous herbs and other geophytes, and their flowers, fruits and seeds are diverse in terms of size, structure and functional adaptations. Solanaceae exploit habitats worldwide from coastal areas to high-montane regions, preferably in the tropics. Thus, their considerable variation of life-forms and reproductive structures is no surprise; almost every known pollination syndrome has been uncovered in this family and, in addition to nectar and pollen, pollinator attractants include curious substances such as liquid perfume and oil.

I am stressing all these biological traits included into the family treatments in this series from the very beginning, following the conviction that they are important for an understanding of the life history of plants. Very often, groups of closely related plant species differ in a single trait, their theme of diversification, while other traits may remain unchanged. Understanding adaptive variation may help understand life history evolution.

I would like to acknowledge the hard work and commitment of all authors and the volume editors; I am deeply indebted for their scholarly contributions and careful

editorial work. I am also grateful to the copyright holders of the illustrations published under their responsibility. The artist Bobbi Angell, New York, is thanked for the generosity with which she authorized the use of her artwork.

Finally, I have great pleasure in thanking the copy editor of the present volume, Dr. Monique Delafontaine, for her dedicated editorial work. I also wish to acknowledge the very pleasant collaboration with Dr. Andrea Schlitzberger from Springer Verlag and with Mr. V. Anand from Spi Technologies India Pvt Limited.

Hamburg Klaus Kubitzki
April 2016

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