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SYSTEMATICS OF THE
EUPHORBIACEAE:
INTRODUCTION¹

Grady L. Webster²

The first International Conference on the Systematics of the Euphorbiaceae, organized by Michael Huft and Grady Webster, was held at the Missouri Botanical Garden in St. Louis on 14–16 August 1989. Papers were presented by 21 people (several of these with one or more collaborators); of these, 15 authors submitted papers that were accepted for publication and are presented in this issue and the one following.

Although the St. Louis conference was technically the first international symposium on the Euphorbiaceae, it had been preceded by the symposium on Euphorbiales held at the Jodrell Laboratory, Royal Botanic Gardens, Kew, in 1986. However, as can be seen by perusal of the proceedings of that symposium (Jury et al., 1987, *Bot. J. Linn. Soc.* 94:1–326), the scope of the Kew meetings was different; there was much more emphasis on chemistry and medical applications, and most of the taxonomic contributions dealt with evidence for relationships of the Euphorbiaceae with other angiosperm families.

The St. Louis symposium, in contrast, was “inner-directed,” with emphasis primarily on patterns of diversity within the Euphorbiaceae. However, considerable attention was given to questions of

relationships with other families in the papers by Vogel et al. on systematics of storage proteins, Kapil and Bhatnagar on comparative embryology, and by Seigler on comparative biochemistry. In fact, one of the interesting aspects of presentations at the symposium was the further elaboration on, and perhaps progress toward resolution of, questions about the “membership” of certain aberrant taxa within the Euphorbiaceae. For example, the studies by Hayden (anatomy), Kapil and Bhatnagar (embryology), and Levin and Simpson (pollen morphology) indicated that controversial genera such as *Antidesma*, *Bischofia*, and *Hymenocardia* are nested within Euphorbiaceae, and recognition of separate families Scapeaceae, Bischofiaceae, and Hymenocardiaceae would render the Euphorbiaceae paraphyletic.

A significant part of the symposium contributions was devoted to surveys at the level of subfamily or tribe: Oldfieldioideae (Hayden, Levin & Simpson), Crotonoideae (Nowicke, pollen morphology), Acalyphoideae tribe Plukenetieae (Gillespie, pollen morphology), Euphorbioideae (Mendoza, wood anatomy, not published here), Euphorbieae (Gilbert; and Koutnik, not published). At the generic level, there were four studies, on

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² Section of Plant Biology, University of California, Davis, California 95616, U.S.A.

Phyllanthus (Haicour et al.), *Jatropha* (Dehgan & Schutzman), *Euphorbia* (Carter), and *Dalechampia* (Armbruster).

These contributions, taken collectively, indicate that there is a significant interest in the Euphorbiaceae at the international level, and that there are a substantial number of workers actively using a variety of methodologies. However, in comparison with symposia on other families such as Compositae, Leguminosae, Solanaceae, and Orchidaceae, it is apparent that the Euphorbiaceae still offer greater stretches of systematically unexplored territory. It is striking that there was no comparative study of DNA or RNA presented at the symposium, and the only detailed molecular analysis was the serological research of Jensen et al. on seed storage proteins. Also notable is the paucity

of cladistic analyses of intra- or intergeneric relationships. The paper by Armbruster—with its correlation of pollination relationships, cladistic affinities, and geographic distribution patterns—provided a model for the kind of studies that could be done for many of the taxa in the family.

Despite the regrettable delay in publication of the results of this symposium, we believe that this collection of articles does significantly contribute to the systematics of Euphorbiaceae, both by the presentation of new data and hypotheses, and by the delineation of a research agenda for the future. Both the review of classification and the synopsis of the taxa by Webster summarize what we know at present, and are intended to facilitate their own obsolescence by suggesting some of the profitable directions for research in the future.