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IV. A STUDY OF NORTH AMERICAN GERANIACEAE.

By WILLIAM TRELEASE.

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IN the following pages, I have brought together descriptions of our species of Geraniaceae, and a few biological notes on them, together with references on their pollination, dissemination, etc. No general revision of our species of this order has been undertaken since the publication of the first volume of Torrey and Gray's *Flora of North America*, 1838-40. The systematic literature and the synonymy of North American species will be found in Watson's *Bibliographical Index to North American Botany*, i, 149, while the more important papers on the order as a whole and its subdivisions are indicated in Bentham and Hooker's *Genera Plantarum*, i. A synopsis of the larger species of Geranium, by Engelmann, appears in Gray's *Plant. Fendler.*, pp. 26-7.

I am indebted to Professor Gray and Mr. Watson for the free use of the Gray herbarium of Harvard University, and for many helpful suggestions; to Dr. Britton for the specimens contained in the Torrey and other herbaria of Columbia College; to Miss Carter for access to the herbarium of this Society; to Professors Prentiss and Dudley for the specimens in the Horace Mann herbarium of Cornell University, as well as for a large suite of duplicates of the eastern species; and to Dr. George J. Engelmann for forwarding me the specimens in the Engelmann herbarium of St. Louis. A number of friends have also favored me with smaller collections, chiefly of eastern species, the most valuable of these being a suite of specimens of *Oxalis recurva*, collected about Cincinnati, by Mr. C. G. Lloyd, and a Nuttall specimen of *Oxalis pumila* from Mr. J. H. Redfield, of Philadelphia, a fine suite of *O. Suksdorfii* from Mr. L. F. Henderson, of Portland, Oregon, and flowers from the type specimens of *O. Dillenii*, at Oxford, secured by Professor Gray.

GERANIACEAE, Bentham and Hooker, *Genera*, i, p. 269.

Annual, biennial, or perennial plants; ours herbaceous or merely suffrutescent. Leaves alternate or occasionally opposite or pseudo-verticillate, simple, divided, or compound, mostly cut-toothed. Inflorescence sometimes evidently cymose, or the flowers solitary