APOCYNACEAE (Dogbane Family)

Contributed byDavid J. Bogler

Plants herbs(shrubs or trees elsewhere), often with rhizomes or a woody rootstock, orsometimes lianas. Stems sometimes twining, usually with milky sap. Leavesopposite or alternate, rarely appearing whorled, simple, or entire. Stipulesabsent or inconspicuous. Inflorescences axillary or terminal clusters orpanicles, or the flowers solitary. Flowers perfect, hypogynous, actinomorphic.Calyces deeply 5-lobed. Corollas 5-lobed, commonly funnel-shaped totrumpet-shaped, the interior of the tube sometimes with hairs, scalelikeappendages, or outgrowths, the lobes overlapping and contorted (twisted) in bud.Stamens 5, alternating with the corolla lobes, the filaments short, fused tothe corolla tube, lacking appendages, the anthers forming a close ring aroundthe stigma, free from the stigma but often more or less held in place by stickysecretions. Pistil of 2 carpels, these free below but fused above the ovary.Each ovary superior, 1-locular, with numerous ovules, the placentationparietal. Style 1 per flower, the stigma capitate or somewhat conical,sometimes slightly 2-lobed, often relatively large, sometimes with a small,cuplike wing or other outgrowths. Fruits follicles (berries or capsuleselsewhere), potentially 2 per flower. Seeds usually numerous, glabrous or witha tuft of silky hairs at the end opposite the attachment point. About 300genera, about 2,000 species, nearly worldwide, but most diverse in tropicalregions.

The milkweedfamily, Asclepiadaceae, is included in the Apocynaceae in some of the recentbotanical literature, but the two groups are treated in the traditional senseas separate families here. See the treatment of Asclepiadaceae for furtherdiscussion.

A number ofspecies of Apocynaceae are popular ornamentals in gardens and greenhouses,including members of some native genera, as well as the exotic genera AllamandaL. (allamanda), Carissa L. (natal plum), Catharanthus G. Don(Madagascar periwinkle, rosy periwinkle), Nerium L. (oleander), Pachypodium Lindl. (pachypodium, Madagascarpalm), Plumeria L. (frangipani), Thevetia L. (yellow oleander),and Vinca L. (periwinkle). In the tropics, a number of genera includetimber trees and fiber plants. Members of the Apocynaceae contain a diverseassortment of alkaloids and other compounds. Most of the species are consideredpoisonous. Because of this complex biochemistry, some species have been usedmedicinally for a variety of ailments. Some of these medicinal uses have beeninvestigated and have resulted in the development of important pharmaceuticals.For example, Catharanthus roseus (L.) G. Don is the source of alkaloidsimportant in the treatment of leukemia and certain cancers; reserpine, which isused to treat schizophrenia and hypertension, comes from Rauvolfia L.;and Strophanthus DC. is the source of strophanthin, which isused in treating heart disease and as a precursor in the manufacture ofcortisone. A number of genera also have been investigated as possible sourcesof latex for producing rubber.