

76. *CATHARANTHUS ROSEUS* (L.) G. Don (APOCYANACEAE) — Periwinkle, Madagascar or Cape Periwinkle, Old Maid

Attractive ornamental, widely cultivated and naturalized in the tropics. In Florida, juveniles very dangerously smoked dried periwinkle leaves as a marijuana substitute.¹⁷ Extracts of entire dried plant contain many alkaloids of medicinal use. As the most important plant source of anticancer drugs, leaves are consumed in the U.S. at an estimated 1000 MT, with another 1000 for England, Italy, Netherlands, and West Germany.⁵⁹ The principal alkaloid is vincalcalekoblastine (vinblastine sulfate), sold as Velban. Vinleurisine, vinrosidine, and vincristine possess demonstrable oncolytic activity. Extracts of the plant show beneficial growth inhibition effects in certain human tumors. Vinblastine sulfate is used experimentally for treatments of neoplasms, and is recommended for generalized Hodgkin's disease and resistant choriocarcinoma. Vincristine sulfate (Oncovin) is used in treatment of leukemia in children. Using vincristine and vinblastine in combination chemotherapy has resulted in 80% remission in Hodgkins disease, 99% remission in acute lymphocytic leukemia, 80% remission in Wilm's tumor, 70% remission in gestational choriocarcinoma, and 50% remission in Burkitt's lymphoma.¹¹ In some cases, people cured of Hodgkin's disease entirely lost interest in sex. Serpentine is hypotensive, sedative, and tranquilizing. Emboden may have triggered some counterculture interest by recounting that side effects of this therapy were euphoria and hallucination. When this information became generally known, there was an outbreak of periwinkle smoking in Miami.⁵⁴

Interestingly, though this is *the* most important plant to date in the war against cancer, it is not among the folk cancer remedies so ably tallied by Hartwell of the NCI,⁴ nor would the extracts have indicated anticancer activity in the screens.¹¹ The NCI screened extracts and found no activity because the screening program did not include the P-1534 leukemia, and the periwinkle alkaloids were not active against the tumors in the screen at that time.¹¹ Decoction of roots is astringent, diaphoretic, emmenagogue, stomachic, and tonic, and is said to cause abortion.¹⁶ Leaves are used for diabetes and as a purgative in chronic constipation, dyspepsia, and indigestion. Roots are used for dysentery. Drug, also, has a slight digitalis reaction and is said to act as a heart poison. Root decoction said to be febrifugal. Leaf used for menorrhagia and rheumatism in Africa.³ Surinamese boil ten leaves and ten flowers together for diabetes.⁴² In Cuba flowers are used in a collyrium for the eyes of infants. Bahamians take the flower decoction for asthma and flatulence, the plant for tuberculosis. In Colombia, the infusion is gargled for chest complaints, laryngitis, and sore throats.⁴² In Mauritius, the leaf infusion is given for dyspepsia and indigestion. In Vietnam it is taken for diabetes and malaria. In many places the plant is used to regulate menstruation, the root considered ecboic in the Philippines.¹⁶ Curacao and Bermuda natives take the plant for high blood pressure.⁴² Indochinese use the stalks and leaves for dysmenorrhea.¹⁶

Quite a few alkaloids have been isolated from the plant, a number of them interesting pharmacologically: ajmalicine, akuammicine, akuammine, alstonine, ammocaline, carosidine, carosine, catharanthine, catharine, catharicine, catharine, catharosine, cavincidine, cavincine, cleavamine, deacetylvincalcalekoblastine, deacetylvindoline, dihydrositsirikine, isoleurodine, isositsirikine, leurocristine, leurosidine (vinrosidine), leurosidine, leurosine, leurosivine, lochnericine, lochnerine, lochnerinine, lochnerivine, lochroidine, lochrovine, maandrosine, mitraphylline, neoleurocristine, neoleurosidine, pericalline, permividine, permivine, perivine, perosine, pleurosine, reserpine, rovidine, rovidine sulfate, serpentine, sitsirikine, tetrahydroalstonine, tetrahydroserpentine, vinaphamine, vinaspine, vinblastine, vincalcalekoblastine, vincamicine, vincamine, vincarodine, vincathicine, sulfate, vinceine, vincolidine, vincoline, vincristine, vindolicine, vindolidine, vindoline, vindolinine, vindorosine, vinosidine, vinsedecine, vinsesine, virosine, yohimbine. The root bark contains 2.0% of a phenolic resin and 0.03% d-camphor. The leaves yield an oleoresin and a small amount of volatile