314. *SCHOENOCAULON OFFICINALE* A. Gray (LILIACEAE) — Sabadilla (Anglicized), Cebadilla (Spanish)

According to Roark, the seed has been used as an insecticide since the 16th century, mostly for the destruction of lice on man and domestic animals. Following a war-induced shortage of rotenone in 1939, sabadilla was tested (and sold) for control of hemipterous insects, e.g., squash bugs, chinch bugs, harlequin bugs, and Lygus bugs. (Around 1945, annual imports exceeded 50 MT, mostly from Venezuela.) To increase the toxicity, powdered seeds are heated in kerosene or some other solvent to about 150°C. If the seed were destined for dusting powders, it was heated without the solvents. According to the *Wealth of India,* the alkaloidal mixture, especially cevadine, is a powerful insecticide against hair lice, thrips, and a variety of pests of horticultural crops and vegetables. Toxicity of the seed powder to houseflies is increased by incorporating pyrethrum as a synergist.[1] "Veratrine can be safely used on food crops even shortly before harvest, since it decomposes rapidly on exposure to sunlight. It has no residual effect."[1]

Reported to be cathartic, emetic, *Poison,* sternutatory, and vermifuge, cebadilla is a folk remedy for arthritis, cancer, gout, hypertension, inflammation, neuralgia, pediculosis, and rheumatism.[2,32] Homeopathically used as a mucal and neural stimulant, for angina, grippe, headache, hysteria, migraine, neurasthenia, etc.[33]

Seeds contain 4(1 to 6)% steroid alkaloids which work rather like veratrine, composed mostly (*circa* 75%) of cebadine (an angelic acid ester of veracevine) ($C_{32}H_{49}NO_9$) and 25% veratridine (a veratric acid ester of veracevine) ($C_{36}H_{51}NO_{11}$). Vanilloylcevine is hypotensive.[1] Also, cevacine ($C_{29}H_{45}NO_9$), vanillylveracevine ($C_{29}H_{45}NO_{11}$), veracevine ($C_{27}H_{43}NO_8$), neosabadine ($C_{27}H_{43}NO_8$), sabadine ($C_{29}H_{47\text{-}49}NO_8$), hydroalkamine S ($C_{27}H_{45}NO_8$), veragrinine ($C_{31}H_{53\text{-}57}NO_{13}$), sabatine ($C_{29}H_{47\text{-}49}NO_8$). The seed contains 9 to 20% oil composed mostly of palmitic and oleic acids, phytosterols, wax, resin, and angelic-, acetic-, cevadic-, chelidonic-, tiglic-, vanillic-, and veratric-acids.[2,33]

Toxicity — Cebadilla is an acrid, drastic emeto-cathartic; in overdoses preparations produce numbness and tingling, followed by anesthesia and coldness. Large doses paralyze heart action and respiration. Internal use is extremely dangerous.[2] The oral LD_{50} in rats is 5000 mg/kg.