

305. *SAMBUCUS CANADENSIS* L. (CAPRIFOLIACEAE) — Elderberry

Fruit not very tasty when fresh, but flavor improves with drying. Dried berries simmered in water with sugar and lemon make excellent summer drink. Also, used in pies, cobblers, and jellies. Elderberry wines and cordials have been made for centuries. They may be substituted in any recipe calling for blackberries. Fruit is excellent source of vitamin C. Elderberry flowers (Elder Blow) used in cooked products by adding to batter for pancakes, waffles, and muffins, or the entire flower cluster, excluding the tough stem, may be dipped into fritter batter and fried in deep hot fat, or used plain with meal or with whipped cream or granulated sugar as a dessert. Elder Blow wine is something special, delicious, with a beautiful pale yellow color; flowers also used for tea. Flower extracts are used in perfumery. Unopened flower buds are pickled and used as substitute for capers. Young shoots from which pith has been extracted used for whistles and an Italian musical instrument called the Zampogna. Pith used for pith-balls for electrical experiments, and in soups to thicken them. New shoots may be cooked and served like asparagus; older green parts are reported to be poisonous. Leaves yield a green dye, and bruised leaves have been used in summer for keeping flies away. Bark yields a black dye. Pith is removed from stems to make nesting sites for solitary bees, especially near alfalfa fields where their presence aids in pollination. Many game birds eat the berries.<sup>62</sup>

Leaves are poulticed to relieve pain and promote healing of bruises and sprains. Dried flowers with mint leaves used in dyspepsia. The flower infusion is alterative and laxative. Juice of fruit with honey makes an effective cough syrup, this mixture along with sumac extract (fruit of *Rhus glabra*) makes a healing gargle for treating sore throat. Inner bark used in preparing ointments. Meskwaki women used elderberries to assist in parturition.<sup>11</sup> Considered alterative, aperient, carminative, cathartic, cyanogenetic, depurative, diuretic, emetic, excitant, hydragogue, intoxicant, laxative, poison, refrigerant, stimulant, sudorific, elderberry is used in folk remedies for abrasions, asthma, bronchitis, bruises, burns, cancer, chafing, cold, dropsy, epilepsy, fever, gout, headache, neuralgia, psoriasis, rheumatism, skin ailments, sores, sore throat, swelling, syphilis, toothache.<sup>32</sup>

Per 100 g, the fruit is reported to contain 72 calories, 79.8 g H<sub>2</sub>O, 2.6 g protein, 0.5 g fat, 16.4 g total carbohydrate, 7.0 g fiber, 0.7 g ash, 38 mg Ca, 28 mg P, 1.6 mg Fe, 300 mg K, 360 µg β-carotene equivalent, 0.07 mg thiamine, 0.06 mg riboflavin, 0.5 mg niacin, and 36 mg ascorbic acid. The leaf is reported to contain 47.8 g H<sub>2</sub>O, 10.2 g protein, 2.1 g fat, 37.9 g total carbohydrate, 15.7 g fiber, and 2.0 g ash. Most of the chemical work has been done in the European elder, *S. nigra* L., according to Leung who gives a long list of compounds.<sup>29</sup> Seeds contain 10.6% protein, 20.1% oil (with 5.8% palmitic-, 2.8% stearic-, 0.6% arachidic-, 4.0% oleic-, 53.0% linoleic-, and 34% linolenic-acid).<sup>1,33</sup> Leaves contain 3.5% rutin, immature flowers 5.2%, and mature flowers 3.0%.<sup>59</sup> Bark contains baldrianic acid. Young shoots contain the iridoid morroneiside (0.1% in April, 0.05% in May).<sup>33</sup>

**Toxicity** — Because partly of HCN content, leaves have been approved for use in alcoholic beverages only provided HCN does not exceed 25 ppm (0.0025%) in the flavor (§ 182. and 182.20).<sup>29</sup> According to Lewis and Elvin-Lewis, children using pea shooters made of elderberry stems may be poisoned by alkaloids and cyanide. As little as 60 mg cyanide has caused death in man. The largest dose from which man has recovered is 150 mg.<sup>11</sup>

**To the physician** — Hardin and Arena suggest emesis or gastric lavage and treatment for cyanide poisoning (see Malug).<sup>34</sup>