

92. *CITRULLUS COLOCYNTHIS* (L.) Schrad. (CUCURBITACEAE) — Colocynth, Bitter Apple, Wild Gourd

This is the wild gourd of two kings, mistaken for melons by one of the prophets during the death of Gilgal, and shred into a pot of pottage making it impotable.<sup>35</sup> Pulp of ripe fruits dry to form a powder used as a bitter and drastic purgative. This powder is inflammable enough to be collected for kindling. Arabs smear a bitter black extract of the rind of the fruit onto waterbags to repel camels.<sup>59</sup> The fruit is used to repel moths from wool. Seed, often removed from the poisonous pulp and eaten in Central Sahara regions, contains a fixed oil, which can be used as an illuminant. It is also used to darken gray hair.<sup>59</sup> The bitter fruits are eaten by grazing animals, the seeds gathered by desert rodents. Bedouins are said to be able to survive nearly 2 weeks on the seed after soaking in water, though probably with diarrhea. Goats and wild game eat the stem and leaves.<sup>59</sup>

Considered cathartic, ecboic, emmenagogue, febrifuge, hydragogue, purgative, and vermifugal, colocynth is used in folk remedies for amenorrhea, ascites, bilious disorders, cancer, dropsy, fever, jaundice, leukemia, rheumatism, snakebite, tumors (especially of the abdomen), and urogenital disorders. The plant figures into remedies for cancer, carcinoma, endothelioma, leukemia, corns, tumors of the liver and spleen, even the eye.<sup>4</sup> This folk cancer "remedy" contains three antitumor ingredients: cucurbitacin B (active against PS and KB tumor systems), cucurbitacin E (active against LL and KB systems), and the D-glucoside of beta-sitosterol (active against CA, LL, and WA tumor systems).<sup>10,132</sup> For rheumatism the Bedouins tie a slice of fresh gourd onto the heel before retiring (I was told that Sinai Bedouins could taste the bitter gourd the following morning as a result). Milk soaked in the empty gourd is said to serve as a vermifuge. A tar-like exudate of the seeds is used to treat camels. Arabs use the fruit as an abortifacient. A pinch of powdered colocynth in cider was said to have arrested dropsy in Tripoli. Lebanese used the powdered pulp in resinous gum for piles. In Beirut, the pulp was used for open varicose veins. Lebanese also allude to its use for cancer, gangrene, and wounds. In Algeria, colocynth is used as a gargle and a mouthwash, a counterirritant in chest cold plasters. The rind with salt is poulticed onto frostbite. Ayurvedics use the root for arthritic pain, breast inflammation, ophthalmia, and uterine pain, the fruit for adenopathy, anemia, ascites, asthma, bronchitis, constipation, dyspepsia, elephantiasis, fetal atrophy, jaundice, leucoderma, splenomegaly, throat diseases, tubercular glands, tumors, ulcers, and urinary discharges.<sup>26</sup> Unani, considering the fruit abortifacient, carminative, and purgative, use it for brain disorders, epilepsy, hemicrania, inflammation, leprosy, ophthalmia, and weakness of the limbs.<sup>38</sup>

Active drug contains an ether-chloroform soluble resin, a phytosterol glycoside (citrullol), other glucosides (elaterin, elatericin B, and dihydroelatericin B), pectins, and albuminoids. Bitter substance is colocynthin and colocynthetin. Roots contain alpha-elaterin, hentriacontane, and saponins. Per 100 g, the seed is reported to contain 556 calories, 6.7 g H<sub>2</sub>O, 23.6 g protein, 47.2 g fat, 19.5 g total carbohydrates, 1.5 g fiber, 3.0 g ash, 46 mg Ca, 580 mg P, and 0.11 mg thiamine.<sup>21</sup> The oil contains oleic, linoleic, myristic, palmitic, and stearic acids. Seeds contain phytosteroline, two phytosterols, two hydrocarbons, a saponin, an alkaloid, a polysaccharide or glycoside, and tannin. The two phytosterols may be the beta-sitosterol and lanosterol detected in all parts of the plant by Nag and Harsh.<sup>133</sup> *Hager's Handbook* lists also quercetin, and salts of acetic-, malic-, citronic-, and tartaric-acids, as well as caffeic-, chlorogenic-, ferulic-, and *m*-coumaric acids and alpha-spinasterol.

**Toxicity** — The purgative action is so drastic as to have caused fatalities.<sup>3</sup> One woman who took 120 gr to induce abortion died in 50 hr.<sup>3</sup> In case of poisoning, stomach evacuation is recommended, followed by oral or rectal administration of tincture of opium, followed by stimulating and mucilaginous beverages.<sup>33</sup>