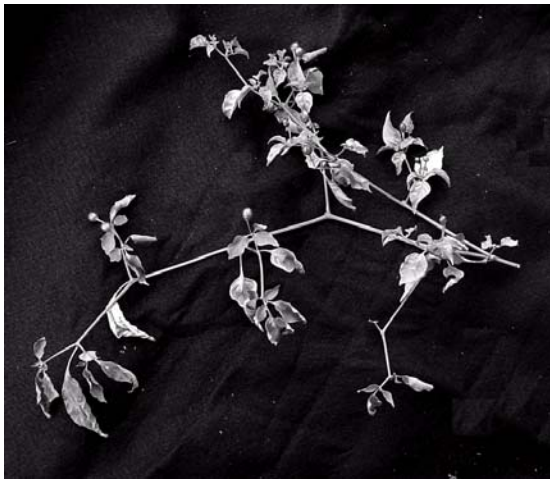
***Capsicum annuum* L.** bird pepper
SOLANACEAE

Synonyms: *Capsicum indicum microcarpum* var. *aviculare* Dierb.
Capsicum bacatum of authors, not of L.



General Description.—Bird pepper is also known as red pepper, wild pepper, wild chili, pimiento, and ají de gallina (Liogier 1995). The current growth is herbaceous, but it later hardens and becomes woody. The wood is brittle. Older plants are multistemmed and very branchy, with a thick, leafy crown. The leaves are dark green, ovate to lanciolate, 4 to 15 cm long, with petioles 0.5 to 3 cm long. The twigs are stiff and straight between nodes. The flowers are mostly solitary or in pairs. The corolla is greenish-white or yellowish-white, 1 to 2 cm broad, with blue, violate, or yellow anthers. The fruits, which are ellipsoidal berries with thin flesh, are 0.4 to 3 cm long (usually about 0.8 cm in wild plants) and red or orange-red. The seeds are cream to yellow in color (Howard 1989, Liogier 1995). The variety growing as a shrub in wildland vegetation in Puerto Rico, Florida, and elsewhere is *C. annuum* var. *glabriusculum* (Dunal) H. Pickersgill (Liogier 1995).

Range.—Bird pepper ranges today from the Southern United States to Argentina and throughout the West Indies (Liogier 1995). The species has been widely spread and cultivated by Native Americans and European settlers. Escapes from cultivation have masked the original range. Bird pepper may be found competing with native vegetation in Puerto Rico (author's observations), Florida (Nelson 1996), Texas (Everitt and Drawe 1993), and Arizona (Tewksbury and other 1999). It is felt that the species was introduced into Puerto Rico by the aboriginal inhabitants (Barrett 1925). Bird pepper is also widely cultivated and escaped in the tropical and subtropical Eastern Hemisphere (Bailey 1941). It is the wild ancestor of the pimento, the bell pepper, and some of the hot peppers (Bailey 1941). The domestication of these pepper varieties from bird pepper is reported to have taken place in Mexico or Central America (Hawkens 1991).

Ecology.—In Puerto Rico, bird pepper inhabits the subtropical moist forest and the wetter portion of the subtropical dry forest (about 800 to 2000 mm of annual precipitation). It is cold sensitive, and hot, dry weather is desirable for fruit ripening (California Antilles Trading Consortium 2001). In favorable habitat, bird pepper can grow under a broken canopy or in disturbed areas without tree cover. However, in Arizona, the plants were found exclusively under partially shading (nurse) plants (Tewksbury and other 1999). Under conditions of low fertility, moisture, and light, bird pepper plants do not become large and probably do not live more than 1 year. The species favors a near-neutral soil reaction and a generous supply of bases. Well-drained soil with a sandy loam or silt loam texture is best (California Antilles Trading Consortium 2001). After it is well established, bird pepper can survive dry seasons of 2 to 4 months. During this period, it will partially defoliate and take on a wilted appearance, but will refoliate and grow vigorously after the rains return.

Reproduction.—When conditions are favorable, bird pepper begins flowering at about 3 months of age (California Antilles Trading Consortium 2001) and flowers and fruits throughout the year. A sample of fruits collected in Puerto Rico weighed an average of 0.0926 $\pm$ 0.0057 g/fruit. Seeds from the sample weighed an average of 0.0039 $\pm$ 0.0001 g/seed or 260,000 seeds/kg. Bird pepper plants are prolific seed producers. Large plants may produce hundreds of fruits per year. Fruits in the above sample contained an average of 8.2 seeds/fruit. Twenty-eight percent of the seeds in this collection germinated between 17 and 118 days after being

sown in potting mix. Seedlings may be established by sowing in prepared seed spots in the field or grown in the nursery and transplanted. The seeds are dispersed by birds that are immune to the capsaicin the fruits contain. Rodents that would otherwise chew up and destroy the seeds will not eat the fruits (UniSci 2001). Seedlings and plants are common but scattered in early secondary forest in Puerto Rico. However, bird pepper may occasionally form small thickets.

Growth and Management.—Because the species name "annuum" means annual and because cultivated forms are, or are treated as, annuals, bird pepper has been assumed to be an annual (see Liogier 1995). In its wild state, it is, in fact, a short-lived perennial (Floridata 2001), living 3 or 4 years, if conditions are favorable. Plants may occasionally reach 5 m in height (Howard 1989). Heights in Puerto Rico are commonly 2 to 3 m. The stems are slender, about 1 cm in diameter, in larger plants (author's observation).

Benefits.—Bird pepper has been cultivated for thousands of years and is the wild ancestor for hundreds of named varieties of cultivated peppers. However, the wild fruits are still harvested and used today. Bird pepper fruits are "hot" to very "hot" with a slight musky flavor. They are used to flavor food and make sauces. Capsicum derivatives are used in a wide variety of medicinal applications, mostly related to pain relief (eg: sore muscles, toothache, phantom limb pain). Capsaicin causes the brain to release endorphins that promote a sense of well-being and deadens pain receptors (Floridata 2001). Concentrated pepper sprays are used for riot control and personal defense. Gardeners also use pepper extracts to protect crops from insects and animals. Extracts of leaves and fruits of bird pepper have shown insecticidal and fungicidal properties in laboratory tests (Hongo and Karel 1986, Patil and Joi 1992, Williams and Mansingh 1993). However, to sensitive individuals, exposure to *C. annuum* fruits can be dangerous. This species ranked fourth in plant poisoning incidents reported to American poison information centers (Krenzelok and Provost 1995). In Texas and Arizona, several species of birds including the Rio Grande turkey and the curve-billed thrasher eat the fruits (Everitt and Drawe 1993, UniSci 2001).

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