FIELD OBSERVATIONS OF CUTHBERTIA (COMMELINACEAE) WITH DESCRIPTION OF A NEW FORM

OLGA LAKELA[1]
Herbarium, University of South Florida, Tampa, Florida, 33620

The genus *Cuthbertia* Small includes three closely related species that are endemic to the South Atlantic Coastal Plain. The combination *Cuthbertia rosea* (Vent.) Small (1903) superseded *Tradescantia rosea* Vent. (Jard. Cels. pl. 24, 1800). In addition, Small described *C. graminea* and *C. ornata* as new species (1933). Later Anderson and Woodson (1935) reduced *Cuthbertia* to synonomy under *Tradescantia* and made Small's three species into varieties, thus *Tradescantia rosea* var. *rosea*, *T. rosea* var. *graminea* (Small) Anders. & Woods., and *T. rosea* var. *ornata* Anders. & Woods. The authors apparently did not recognize the morphological distinctions of the involucral bracts that Small used to seperate the two genera.

Woodson, after a comprehensive study of American and tropical genera of Commelinaceae, chose to emphasize the structure of the inflorescence in the delimitation of genera. Reevaluation of his earlier revision led him to transfer *Tradescantia rosea* var. *rosea* to *Tripogandra rosea* (Vent.) Woods. However, he did not make any transfers involving *T. rosea* var. *graminea* or *T. rosea* var. *ornata* because he was not certain of their proper taxonomic status. Woodson stated that none could be made until "extensive field study" had been completed.

After several years of observation of the plants, both in the field and in cultivation in the botanical garden, I am convinced that Dr. Small's delimitation of *Cuthbertia* is valid. Other workers (Giles, 1942, 1943; Tomlinson, 1966) concur with this position, using other lines of evidence to reach the same conclusion. The following taxonomic diagnosis is offered based on my field and garden observations.

CUTHBERTIA

Perennial herbs in small or large tufts. Stems and leaves glossy green or yellowish green, nodose, never hirsute, stems erect to spreading. Leaves fleshy, semiterete, or flat, folded when young, with a closed sheathing base; stomata abaxial; sheaths red-striate, or sometimes whitish-striate, with oblique orifice. Roots fibrous, lanate or glabrate, clustered or spreading and fistulose (even at extremities).

Flowers ephemeral, bisexual, trimerous, radially symmetrical; sepals green or petaloid; petals free, roseate, or rarely white, crenulate on margins; stamens six in two alternating cycles of three's, all fertile and morphologically similar; anther connective trapezoidal; pollen yellow; stamen

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hairs roseate, rarely white, moniliform, in groups on the lower part of the filament, the upper part hairless; ovary superior, 3-locular, typically 6-ovulate; pistil white; style declinate, tubular, dilating to tubular stigma. Capsule loculicidal, valves coriaceous, persistent; seeds hemispherical, ribbed-reticulate, hilum punctiform. (*Tradescantia* L. of authors; *Tripogandra* Raf. of authors.)

KEY TO SPECIES

1. Leaves loosely spreading, blades linear or linear-lanceolate, flat, as wide or wider than the sheaths; roots slender, yellow; capsules obovoid-trigonal. . . . . 1. *C. rosea*
1. Leaves erect or ascending; blades linear, narrower than the sheaths; roots dilated at bases; capsules globose—oblong-trigonal.
   2. Plants in small tufts with a few erect stems; roots copiously lanate, clustered. . . . . 2. *C. ornata*
   2. Plants cespitose, with numerous branching, close-set stems; roots moderately lanate, glabrate. . . . . 3. *C. graminea*

1. CUTHBERTIA ROSEA (Vent.) Small. in Fl SE. U.S. 237. 1903.

Tradescantia rosea Vent. Jard. Cels. pl. 24, 1800.

Tripogandra rosea (Vent.) Woods. Ann. Mo. Bot. Gard. 29: 141-154. 1942.

Plants 2—5.5 dm tall; leaf blades 0.8—2.5 dm long, 4—15 mm wide, puberulent or glabrous; cymes 10—15-flowered; involucral bractlet 3—5 mm long, simple or cleft, rarely acuminate to 14 mm long. Sepals 3—5 mm long, suffused with rose; petals ovate, 8—12 mm long, shallowly crenulate, bright rose; capsules 3—4 mm long; seeds silvery gray, ribbed-reticulate, 2 mm wide. Sandy banks, hammocks; Southampton Co., Virginia to vicinity of Jacksonville, Florida.

2. CUTHBERTIA ORNATA Small, Man. SE. Fl. 259. 1933.

Tradescantia rosea Vent. var. *ornata* (Small) Anders. & Woods. Contrib. Arn. Arb. 9: 111-116. 1935.

Small in describing *C. ornata* did not designate a type specimen. The LECTOTYPE selected is *Small and Winkler 9054*, sandhills of Avon Park to Sebring, De Soto County, 1 May 1919 (NY). A later civil division of De Soto County placed the type locality in Highlands County.

Plants 2.5—4.5 dm tall, yellowish green, essentially glabrous, branches few, internodes 2—4; leaf blades 1.7—2.5 dm long; sheaths red-striate, 0.3—1.7 mm long. Involucral bract 1—3 mm long; bracteoles 2 mm long, base greenish, whitish on margins. Cymes 3—15-flowered, pedicels 10—14 mm long; flowers opening two or three at a time; sepals 4—5 mm long, petaloid, apex slightly incurved; petals 10—15 mm long, prominently crenulate; stamen hairs often purplish; filament white, sometimes suffused with pink. Mature capsules 3—5 mm long; seeds 2 mm wide, typically compressed, silvery, ribbed. Distributed only in Florida; oak scrub and sandhills.

3. CUTHBERTIA GRAMINEA Small, Man. SE. Fl. 259. 1933.
Tradescantia rosea Vent. var. *graminea* (Small) Anders. & Woods. Contrib. Arn, Arb. 9: 111-116. 1935.

HOLOTYPE: *J. K. Small,* June 27-July 1, 1895, about Augusta, Richmond Co., Georgia (NY).

Plants 0.4—3.8 dm tall, glabrous with 6 or fewer nodes. Leaf blades 0.4—2 dm long, 1—5 mm wide; sheaths purple-striate, pilose about orifice, puberulent on surface. Roots from rhizomatous base crowns or in congested tufts from the lower nodes. Involucral bracts 3 mm or rarely 14 mm long, cleft or obscurely lobed. Flowers 3—13 or more; pedicels 8—12 mm long; sepals green, suffused with rose; petals 8—10 mm long, bright rose. Mature capsules 3.5 mm long; seeds 1.5—1.8 mm wide, ribbed-reticulate, typically silvery. $2n = 12, 24, 36$. Sandy woods; Coastal Plain, adjacent to the Fall Line, and in the interior formations throughout the range of the genus.

CUTHBERTIA GRAMINEA Small f. **leucantha** Lakela, f. nov. HOLOTYPE: *Lakela 32048* (USF). A typo different cum petalis, staminibus et pistillo albidis.

Grown from offshoots of plant collected 1 April 1969, sandhill, vicinity of University of South Florida campus, 18 May 1970, Plates 1, 2, 3. Differs principally from forma *graminea* in absence of anthocyanin pigments, hence bracteoles, sepals, and leaves margined with white; stem bases, nodes, sheath striations suffused with white; petals, stamen filaments, and hairs white; anthers and pollen yellow; pistil wholly white with lustrous stigma. $2n = 12$.

After several years of field acquaintance with pink-flowered *Cuthbertia,* the appearance of a color variant was more than a passing surprise. A luxuriant plant with many flowering stems and white budding cymes was discovered in an opening of a sandhill vegetation April 1, 1969. To facilitate continued observations, two stems were detached and transferred to the University Botanical Garden. Later, upon returning to the site for flowering and fruiting specimens, the plant was not there and others could not be found. Perpetuation of the novelty depended on the two plants in cultivation. The attractive white flowers opened at dawn and closed in the early afternoon. After ripening of the pollen, petals with stamens rumpled over the ovary and the style remained exserted beyond the closed sepals. Fruit did not form, however, and the flowers one after another fell with withered pedicels.

The flowerless rachis with persistent bracteoles did not wither. In due time, tips of green leaves appeared in axils of proximal bracteoles, and below, tips of rootlets were elongating. One of the plants on September 11, 1969, had an offshoot of five leaves 3—8 cm long. The stem was cut above the roots and pressed as a herbarium specimen. The other plant was more prolific by producing two offshoots of similar size. The reclining stem tip was secured in soil until the plants were independent. During the cooler months, the plants were placed in the lath house where they freely

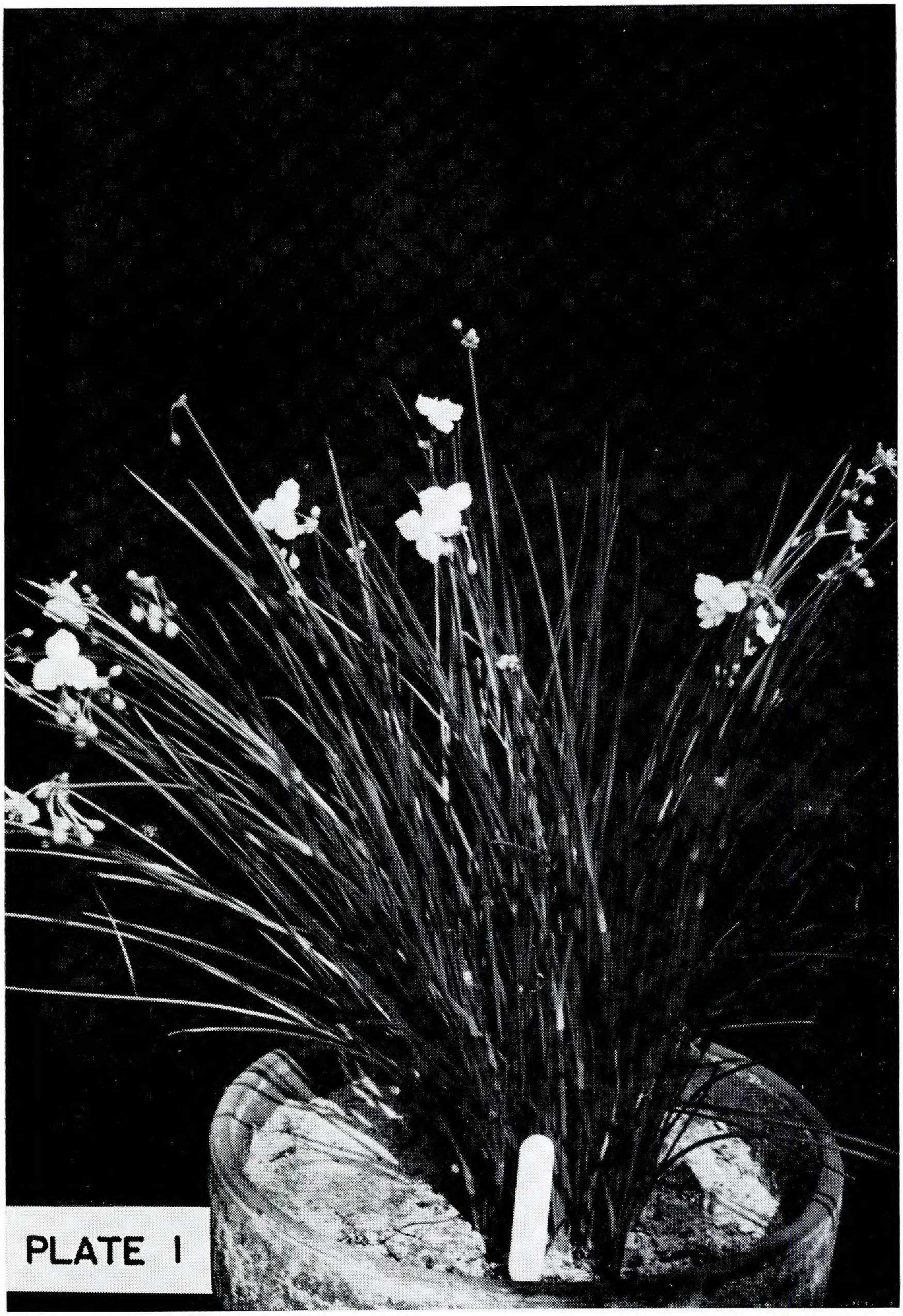

Plate 1. *Cuthbertia graminea* f. *leucantha*: plant grown from offshoots for type specimens, *Lakela 32048*.

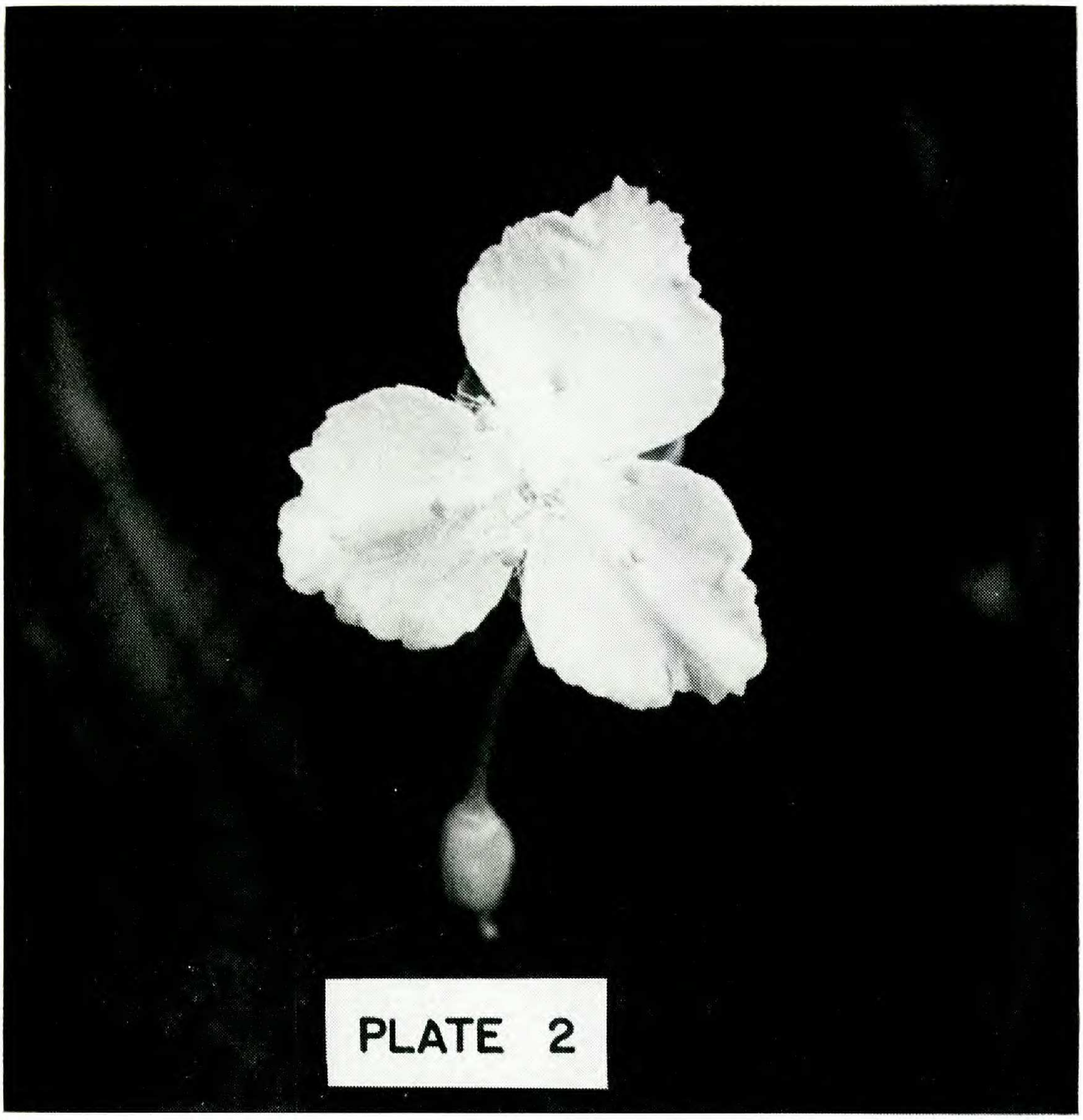

Plate 2. *Cuthbertia graminea* f. *leucantha*: flower with dehisced anthers, the other in post anthesis with mature stigma.

flowered and fruited through the spring of 1970. The plants, developing from the two offshoots since September 1969 comprise twenty flowering stems.

Seeking parallelism of rachial propagation in nature, at least one prone stem of *C. ornata* was found with a rooting propagulum in sand of the topo-site of forma *leucantha*. This is an undeveloped wooded area, west side North 30th Street, North Tampa. Although spoiled and destined for destruction by urban development its vegetation still features many native species typical to *Pinus palustris-Quercus laevis* association. In the undergrowth on mats of pine needles and among grasses, thrive fourteen Fabaceous genera, and various Florida endemics such as *Cacalia floridana*, *Baptisia Lecontei*, *Phoebanthus grandiflora*, *Cuthbertia ornata*, *Cuthbertia graminea* forma *graminea* and forma *leucantha*. The white-flowered variant reap-

Plate 3. *Cuthbertia graminea* f. *leucantha:* declining style with unripe stigma among mature stamens.

peared in 1971. At present its known distribution is extended to Pinellas County.

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