

A New Yellow-Flowered Rain Lily in Texas

V. L. Cory¹

Most of us know one or both of the white-flowered rain lilies (*Cooperia Drummondii* Herb. and *C. pedunculata* Herb.) which spring up suddenly and burst into full bloom several days after a significant rainfall; but most of us have never seen a yellow-flowered rain lily. Before April, 1939, no yellow-flowered rain lily (*Cooperia*) was known. One such (*Cooperia Smallii*) was then described by Dr. E. J. Alexander in *Addisonia*, pl. 676. Bulbs of the new species, collected in or near Brownsville, Texas, had been sent in 1930 to Dr. John K. Small of the New York Botanical Garden, by Robert Runyon, the discoverer and collector. The bulbs were grown under cultivation at the New York Botanical Garden to provide adequate material for study. Before this material became available, Dr. Small died. Thus Alexander's 1939 study was not based on material growing in the wild.

Recently, Mr. Fred B. Jones of Taft, San Patricio County, Texas, has become interested in lilies of the genera *Cooperia*, *Habranthus*, and *Zephyranthes*, and has begun growing some of the species under cultivation. He has sent me material of three different yellow-flowered rain lilies. Two of these seemingly represent distinct species, while the third is intermediate between these two, and is possibly a hybrid between them. He has also sent notes and descriptions, of which I here make free use. In quotations, I have occasionally made slight changes of arrangement and wording, without changing the sense.

In early July of 1949, Mr. Jones saw for the first time the yellow-flowered rain lilies. The large-flowered one, *C. Jonesii*, was growing near a compress warehouse in Taft, along with the small-flowered one, *C. Smallii*.

Mr. Jones says: "After seeing these and checking through references I had at hand and deciding that the smaller one was *C. Smallii* and the larger one possibly a new species, I set about ascertaining how abundant these species were in this area and of learning just where one could expect to find them. . . . The two species usually occur in the same habitat, namely, on the marginal higher ground, often tillable land, around the ancient lake-beds or swales characteristic of this area. The lake-beds are usually, if not always, the last remains of ancient river channels which wound around through the ice-age delta, which includes much of this coastal bend area. There are several lake-beds close to Taft, one almost within the city limits. The town itself, I presume, is mainly on an ancient terrace. In any case the soils in which the yellow-flowered rain lilies grow may vary in type but, as I think, always are subject to flooding from the overflow of the swale nearby because of the surrounding higher terraces which delay the flow of run-off water after heavy rains. Sinton also appears to be

¹Field Botanist, Southern Methodist University, Dallas.

on the site of a lake-bed and terrace system, for very low and non-tillable swales occur there.

"On November 9 I noticed in Sinton a few of the large yellow-flowered *Cooperia* in full bloom. Nearer home I saw a number of the small yellow-flowered *Cooperia*. Of the white-flowered rain lilies, very few of the small one, *C. Drummondii*, were in bloom and none at all of the large one, *C. pedunculata*. Perhaps the yellow rain lilies may bloom later in the season than do the whites; but of course, there may be another explanation.

"The occurrence of the species of rain lilies at Taft and at individual lake-beds several miles from the two towns, was similar to that noted at and near Sinton. However, I could not find any rain lilies in the Rockport-Ingleside area, nor in the eastern part of the county. I presume *C. Smallii* is abundant from here southward to Brownsville, where Runyon found his plants. I do not know the limits of *C. Jonesii*, but if it is also to be found in the lower Rio Grande valley, it does seem that either professionals or amateurs would have noticed it by this late date. In my opinion it is endemic to the coastal bend area of Texas."

Other statements by Mr. Jones are of informative value.

"*C. Drummondii* grows almost everywhere in this area and on all soil types. As a rule it occurs with *C. Jonesii* and *C. Smallii*, while nearby, usually on better drained and drier land, one is likely to find *Habranthus Andersoni texanus*. In the lower part of these swales, as you know, one finds *Zephyranthes pulchella*. Once this summer I was in Ingleside when *Z. pulchella* was in bloom, and I recalled your visit to that place as recorded in *Herbertia* (Vol. 4, 1937, pp. 117-120, '*The Genus Zephyranthes in Texas.*') The large white rain lily, *C. pedunculata* (or the form or forms of it here) as a rule is not found in lake-bed areas, unless on an adjoining well-drained terrace. It requires good drainage—not occurring in nature where water stands at all—and is usually on sandy loam slopes. Locally a number of swales have *C. Smallii* without *C. Jonesii*. In one lake-bed near my home, *Z. pulchella*, *H. Andersoni texanus*, *C. Drummondii*, *C. Smallii*, *C. Jonesii*, and intermediate (hybrid?) forms between the last two occur.

"Since I am resident here and have all these interesting things almost at my doorstep, I think I shall continue to study them in a general way. The article, '*The Genus Cooperia*,' by H. Harold Hume, *Bull. Torr. Bot. Club*, Vol. 65, No. 2, Feb., 1938, pp. 79-87, and the various notes from time to time in *Herbertia*, do not cover the subject too well, I am sure. For example: after watching the various varieties or forms of *C. Drummondii* this summer, I do not think that the present descriptive material quoted in Hume's article is adequate." I have now referred for the first time to Hume's article and (without trying to find my old manuscript which described a variety from the Edwards Plateau of Texas) I feel fairly certain that my plant was described in 1836 as *C. chlorosolen* Herb. (now considered as a good variety of *C.*

Drummondii). I do not recall having made any effort to have my manuscript published.

Because of his discovery of the large-flowered yellow rain lily and his courtesy in supplying material and notes, I wish to dedicate the new species to Mr. Jones.

Cooperia Jonesii sp. nov. Bulbus subglobosus 2.5-3 cm. diam: scapus ad 3 dm. altus vel ultra; folia subglaucoviridia 2-3 mm. alta 25-35 cm. longa non acuta; tepala lutea 3-4 cm. longa oblanceolata vel ovalia, tubus perianthi 5.5 cm. longus vel ultra, stylus albus 6-7.5 cm. longus, stigmatum stamina excedente, ovarium parum vel non stipitatum.

Cooperia Jonesii new sp. Bulb subglobose, 2.5-3 cm. in diameter, with its base seated usually about 7.5 cm. below surface of ground; scape up to 3 dm. high or more; leaves slightly glaucous green, 2-3 cm. wide and 25-35 cm. long, the tips not acute, perianth-segments yellow, 3-4 cm. long, oblanceolate to oval; perianth-tube up to 5.5 cm. long or more; style white, 6-7.5 cm. long, the stigma markedly exceeding the stamens (as much as 5 mm.); ovary slightly or not at all stipitate.

C. Jonesii differs from *C. Smallii*, heretofore the only described yellow rain lily, chiefly in that the flower is about twice as large. Also, its leaves are longer and are not as sharply pointed. Some other differences are shown in the following tabulation:

	<i>Smallii</i>	<i>Jonesii</i>
Spathes:	3.5 cm. long or less	up to 4 cm. long
Perianth-segments:	broadly oval 1.5-2 cm. long	somewhat oblanceolate, 3-4 cm. long
Perianth tube:	2-4 cm. long	up to 5.5 cm. long or more
Style:	green, 3-3.5 cm. long	white, 6-7.5 cm. long
Stigma:	exceeded by anthers	markedly exceeding anthers
Ovary:	markedly stipitate	slightly, if at all stipitate

Some minor discrepancies in the original description of *C. Smallii* are noted by Mr. Jones (one being that the ovary is not so markedly stipitate as in the original description). These discrepancies, he thinks, are due to the fact that Alexander's material was from cultivated plants, whereas the present material is of native plants.

Other observations by Mr. Jones concern the new species. "On the fifth to eighth day after a good rain the scape has made its growth and the flower opens slowly, beginning about 2:30 P.M. and is fully opened by about 5:00 P.M. The next morning it remains fully expanded, but fades rapidly to ivory. Its scent is markedly more delicate than that of *C. Smallii*. The perianth-tube is not as green as that of *C. Smallii*, the upper part being a pale whitish green, and the lower half tinged with pink or rose, with more green on it than on the upper half. What I consider a distinct characteristic of *C. Jonesii* is the elevated stigma. I have never seen this in any other species but, of course, it occurs in *C. Traubii*.

The TYPE specimen was collected by Fred B. Jones, September 25, 1949, in a lake-bed about six miles south of Taft, San Patricio County, Texas. It bears no number. It consists of the upper portion of five flowering plants, including about 10 cm. of peduncle and a similar

length of fruit and flower; two leaves which are about 17 cm. long and 1.5 mm. wide; and seven seed; and a drawing at full scale of three selected bulbs. Type materials are deposited in the Herbarium of Southern Methodist University.

The specimen of the intermediate form consists of the upper portion of a single plant. This has the longer perianth-tube of *C. Jonesii*, but otherwise more nearly resembles *C. Smallii*. Further experimental growing and study of intermediate form should be made before attempting a final disposition.

The Latin diagnosis is by Dr. Lloyd H. Shinnars.

Notes

HOFFMANSEGGIA Parryi (E. M. Fisher) Turner, comb. nov.—*Hoffmanseggia melanostricta* var. Parryi E. M. Fisher, Contrib. U.S. Nat. Herb. 1: 149. 1892. Recent collections of this plant have been made near the type locality, "cañons below the San Carlos". Brewster Co., 3 m. w of Terlingua in limestone soil on Reed Plateau, Parks, Warnock, & Turner, 1155, June 19, 1949. (S.M.U. Herbarium.) *H. Parryi* is a low, suffrutescent plant occurring infrequently in an area where several endemics are found. —B. L. TURNER, Graduate Student, Southern Methodist University, Dallas.

DALEA subvillosa (Rydberg) Turner, comb. nov. —*Parosela subvillosa* Rydberg, N. Amer. Fl. 24: 93. 1920. —**DALEA Bigelovii** (Rydberg) Turner, comb. nov. —*Parosela Bigelovii* Rydberg, N. Amer. Fl. 24: 75. 1920. —B. L. Turner.

LOBELIA Reverchoni Turner, nom. nov.—*Lobelia puberula* var. *pauciflora* Bush, Ann. Rep. Mo. Bot. Gard. 17: 122. 1906. Not *L. pauciflora* H.B.K. 1819. *L. Reverchoni* has its closest relative in *L. puberula* and may be distinguished from that species by the following characters:

L. puberula

anther tube 3-3.5 mm. long
corolla tube 5-8 mm. long
distance between the lower flowers in spike 0.5-2.5 cm.
base of calyx and pedicel glabrous to pubescent
lower corolla lobes not recurved, a white eye extending across the venation (not observable in herbarium material)
inflorescence few — 75-flowered

L. Reverchoni

anther tube 4-6 mm. long
corolla tube 9-15 mm. long
distance between lower flowers in spike 2.5-5 cm.
base of calyx and pedicel densely hirsute
lower corolla lobes recurved, two white lens-like markings following the venation between the lobes
inflorescence few — 16-flowered

L. puberula and *L. Reverchoni* were found growing side by side in a bog 14.5 m. s of Fairfield, Texas. Their dissimilarity was very striking, even to one unfamiliar with the species. In the area concerned, the two species seemed to be well marked and showed no signs of intergradation. TYPE LOCALITY: "swamps [at] Swan", Smith Co., Texas