

---

**JUSSIAEA URUGUAYENSIS CAMB. IN OKLAHOMA****ROBERT STRATTON, Oklahoma A. and M. College, Stillwater**

In July, 1946, my attention was called to a large, showy, yellow-flowered specimen of *Jussiaea* by Dr. H. I. Featherly of the Department of Botany and Plant Pathology, who desired my opinion as to its identification. He took me to the spot whence it came. There we found a large colony of the plants in the north end of an old reservoir which at one time supplied part of the water for the city, but now forms the west border of a city park. This reservoir, now partially filled by sedimentation, has a narrow extension about 50 feet wide and about 3 feet deep in the middle, which was occupied by this species practically from shore to shore. The plant had also spread up the bank on the three sides at the north end of this arm of the pond. Some 15 to 20 specimens were collected.

I identified it according to Small (1913 and 1933) as *J. grandiflora* Michx. When specimens were sent to the National Museum, the N. Y. Botanical Garden, and the Gray Herbarium, Morton (1946), Moldenke (1946), and Smith (1947), taxonomists of these herbaria, informed me that Muns (1942) had reported *J. uruguayensis* Camb. as the correct name for this

species. Fernald (Smith 1947) and Munz (1946) both agree that the plant species found here is *J. uruguayensis*. Woodson (1946) reported two Oklahoma sheets (B. F. Bush 157, Sapulpa, and 158, Verdigris) of *J. grandiflora* in Missouri Botanical Garden. Munz (1942: 272) identified these as *J. repens* L. var. *glabrescens* O. Kuntze. Monachina (1945) reported *J. uruguayensis* from Staten Island, N. Y. Specimens from Berks Co., Pennsylvania, have been identified by Munz as *J. uruguayensis* and by Fernald (1944) as *J. Michauxiana* Fernald since *J. grandiflora* Michx. is preoccupied by *J. grandiflora* Ruiz and Pavon. Both agree, however, that the Oklahoma species is *J. uruguayensis*.

Upon a second survey, I found another colony of *J. uruguayensis* across the road and north of the first colony. The plants in the second location evidently had not been established so long as the others, as shown by the narrowness of the strip occupied along the shore line.

In January, 1947, the U. S. Weather Bureau thermometer at Stillwater registered  $-15^{\circ}$  F. The ponds were frozen over. I visited the *Jussiaea* colony afterwards and found green stems on the soil in the water and a few which still had green leaves. From this it seems evident that the plant can persist through very cold weather when protected by a water covering.

No mature fruits were found on the plants; the fruit seems to fall before becoming quite mature. Since the plant is often found near residential areas, Dr. Munz (1946) suggests the possibility of its being introduced for ornamental purposes. Since *J. leptocarpa* was discovered on the north shore of Lake Carl Blackwell (which is a large artificial lake recently established west of Stillwater) where ducks congregate by the thousands, is it not possible that ducks are establishing these aquatic plants since the fruit falling to the ground may easily disintegrate and leave the seed in the mud?

Herewith is included an amended description of the species listing my own observations on locally collected material.

*Description.* Plant perennial, villous to almost hirsute. Stem over 2 m long, decumbent with upright tips 6-10 cm long, spreading, and rooting at the prominent nodes with roots both in the soil and in the water. Leaves narrowly lanceolate to oblong-lanceolate, tapering at both ends, villous below but less so above; blades 5-12 cm long, 5-35 mm wide; petioles 0.5-4 cm long. Calyx villous on lower side, persistent until fruit is almost mature, then falling before fruit falls or sometimes with it; sepals 4-6, 10-18 mm long, broadest at base and long tapering. Flowering stem branched above, flowers being borne singly in leaf axils of main stem and branches. Peduncles 2-5 cm long; bracteoles 2 mm long or less; hypanthium 10-12 mm long. Flowers reflexed in bud, erect in anthesis; corolla large, yellow, showy, 4-6 cm broad. Petals suborbicular, retuse, narrowed into short claws, 1.5-2.8 cm long, 1.7 cm wide. Stamens usually of two lengths and twice as numerous as sepals or petals; anther curved when dry, about 3 mm long, versatile but attached below middle at a point one-fourth to one-third its length from lower end, marginally dehiscent. Pistil one, compound, 9 mm long, enlarged upward at top; stigma convex. One flower was observed with 6 sepals, 6 petals, 12 stamens, and a 6-pointed star-shaped design at top end of ovary. Fruit reflexed, villous, 10-25 mm long, 3 mm in diameter, slightly constricted just below the star-shaped disk, falling with peduncle as a unit before maturity. The nearly mature fruit usually will pull off with the leaf. Seed obliquely truncate, triangularly prismatic, 1-2 mm long, 1 mm in diameter, placed end to end in as many rows as there are sepals.

Wet black mucky soil by and in water to a depth of 3 feet, Morning-side Park, East Third Street, Stillwater, Payne Co., Okla., July 18, 1946;

fruit, Aug. 7, 1946. Coll. by Dr. H. I. Featherly and Robert Stratton, No. 6564 R. S.

After my specimens were identified, it was found that one of my students, Miss Ernestine Miller, had collected an example, No. 104, at the same location, July 13, 1946.

*Distribution.* According to Munz (1942) the species has been found in Argentina, Bolivia, Brazil, Costa Rica, Ecuador, Guatemala, Paraguay, Peru, and Uruguay, and in the United States in N. C., S. C., Ga., Fla., La., Tex., and possibly Pa. Muenscher (1944) lists also Ala. and Miss. Monachino (1945) adds N. Y.; and this paper, Okla.

Oklahoma specimens of *J. uruguayensis* Camb. have been deposited at the Gray Herbarium, N. Y. Botanical Garden, National Museum, Mo. Botanical Garden, Okla. A. and M. College, and Instituto Miguel Lillo in Tucuman, Argentina.

#### REFERENCES

- Fernald, M. L. 1944. *Jussiaea Michauxiana*, nom. nov. *J. grandiflora* Michx. Fl. Bor.—Am. 1 267 (1803), not Ruiz and Pavon (1802). *Rhodora* 46: 197-198.
- Moldenke, H. N. 1946. Correspondence in August.
- Monachino, J. V. 1945. *Jussiaea uruguayensis* in Staten Island, New York. *Rhodora* 47: 237-239.
- Morton, C. V. 1946. Correspondence in July.
- Muenscher, W. C. 1944. Aquatic plants of the United States. Ithaca (N. Y.): Comstock Publishing Co.
- Munz, P. A. 1942. Studies in Onagraceae XII. A review of the New World species of *Jussiaea*. *Darwiniana* 4: 179-234.
- Munz, P. A. 1946. Correspondence in December.
- Small, J. K. 1913. Flora of southeastern United States. 2d ed. Lancaster (Pa.): New Era Publishing Co.
- Small, J. K. 1933. Manual of the southeastern flora. Lancaster (Pa.): Science Press Printing Co.
- Smith, L. B. 1947. Correspondence in January.
- Woodson, R. E., Jr. 1946. Correspondence in July.
-