

## THE STATUS OF *PARNASSIA* (SAXIFRAGACEAE) IN THE WEST GULF COASTAL PLAIN

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### ABSTRACT

A recent find of *Parnassia grandifolia* DC. from central Louisiana led to a review of the status of *Parnassia* in the West Gulf Coastal Plain.

KEY WORDS: *Parnassia grandifolia* DC., *Parnassia asarifolia* Vent., Saxifragaceae, Louisiana, Texas

*Parnassia asarifolia* Vent., a southeastern species, is found in only one area of east Texas: northern Nacogdoches and southern Rusk counties (Correll & Johnston 1970; Correll & Correll 1972; Godfrey & Wooten 1981; Johnston 1990; Jones *et al.* 1997). It is not known from Louisiana, Oklahoma, Arkansas, or Mississippi. The closest known occurrence to the Texas site is in Coosa Co., Alabama, 775 km east (Alfred Schotz, pers. comm.).

*Parnassia grandifolia* DC., a southeastern species, is considered to be rare, threatened, or of special concern throughout most of its range - Virginia south to Florida and westward to Texas and Oklahoma (Correll & Johnston 1970; Correll & Correll 1972; Eakes 1989; Godfrey & Wooten 1981; Johnston 1990; Jones *et al.* 1997). It is found in northern Arkansas (Smith 1988). There are several *P. grandifolia* sites in southern Mississippi (Stone, Perry, Forrest, Newton, and Pearl River counties) (Lowe 1921; Eakes 1989; Steve Leonard, pers. comm.; Ken Gordon, pers. comm.) and in Alabama (Freeman 1978). Although there are numerous seeps in the coastal plain area of Oklahoma, Taylor & Taylor (1978) found *P. grandifolia* in only one, where it was common (Connie Taylor, pers. comm.). It has been reported



from two sites in Texas. Reverchon found *P. grandifolia* in 1902 near Swan, Texas, in Smith County; Bob O'Kennon saw it in northern Newton County in 1985 (Lindsay Woodruff, pers. comm.; Geraldine Watson, pers. comm.; Bob O'Kennon, pers. comm.), but there is no voucher for the Newton Co. locality. It was reported from Louisiana by Riddell in 1852, a report that has been overlooked by subsequent collators of Louisiana plant taxa (Thomas & Allen 1982; MacRoberts 1984, 1989; Louisiana Natural Heritage Program 1995). We searched for Riddell's collection of *Parnassia* from Louisiana but were unable to locate it at US or NO, two repositories where his specimens and those of other early Louisiana botanists may have been housed (MacRoberts 1984). Riddell referred to the specimen as "*Parnassia Caroliniana*, Michx. var. *grandifolia*." Where in Louisiana it was found remains unknown.

On March 21, 1997, while surveying for rare plants on the Winn Ranger District of the Kisatchie National Forest, Natchitoches Parish, Louisiana, we found dozens of *Parnassia grandifolia* growing in a small (5 m  $\times$  3 m) seepage area in a pine-hardwood forest ravine at the base of a 20° west-facing slope, approximately 200 feet from the top of the adjacent ridge and approximately 20 feet from a 2nd order perennial stream. The plants were growing in sandy, mucky soil at the edge of slow moving water that was surfacing at the seep. The plants were not in flower, but from leaf form and dried scapes of the previous year they were unmistakably *Parnassia*. To confirm our initial identification, we monitored them until they flowered in mid-October. On October 29, 1997, the population had 32 flowering stems: 2 in flower and 30 buds.

Soil information is given in Table 1. Soil at two places in the seep was taken from the upper 10 cm next to the *Parnassia* and analyzed by A & L Laboratories, Memphis, Tennessee.

Table 1. Soil characteristics of *Parnassia grandifolia* site.

Sample	pH	Exchangeable Ions (ppm)				OM%
		P	K	Ca	Mg	
1	5.8	4	39	316	84	2.1
2	5.2	5	51	438	134	3.7

The Louisiana *Parnassia* soils are essentially the same as those analyzed by Eakes (1989) for southern Mississippi *Parnassia* sites except that there may be slightly more calcium and magnesium in the Louisiana samples.

Associated species were *Aster* sp., *Athyrium filix-femina* (L.) Roth, *Callicarpa americana* L., *Carex atlantica* Bailey, *Carex crinita* Lam., *Carex debilis* Michx., *Chasmanthium laxum* (L.) Yates, *Dichanthelium sphaerocarpon* (Ell.) Gould,



*Eupatorium fistulosum* Barratt, *Gelsemium sempervirens* (L.) St. Hil., *Hypericum hypericoides* (L.) Crantz, *Lyonia ligustrina* (L.) DC., *Melanthium virginicum* L., *Mitchella repens* L., *Myrica cerifera* L., *Myrica heterophylla* Raf., *Osmunda cinnamomea* L., *Osmunda regalis* L., *Oxypolis rigidior* (L.) Raf., *Platanthera clavellata* (Michx.) Luer, *Rhododendron canescens* (Michx.) Sw., *Rhododendron oblongifolium* (Small) Millais, *Rhynchospora glomerata* (L.) Vahl., *Rhynchospora gracilentia* A. Gray, *Rubus* spp., *Scleria triglomerata* Michx., *Smilax glauca* Walt., *Smilax laurifolia* L., *Solidago patula* Muhl. ex Willd. var. *strictula* Torrey & A. Gray, *Solidago rugosa* P. Mill., *Toxicodendron vernix* (L.) Kuntze, *Vaccinium* spp., and *Viola primulifolia* L. Canopy species included *Acer rubrum* L., *Magnolia virginiana* L., *Nyssa sylvatica* Marsh., and *Pinus palustris* P. Mill., with a midstory of *Nyssa sylvatica* and *Persea borbonia* (L.) Spreng. The seep was well shaded with total canopy cover.

The ravine in which the seep occurred and surrounding ravines had numerous seeps and three hillside pitcher plant bogs, but none had *Parnassia grandifolia*. However, very few sites appeared to be permanently flowing like the *P. grandifolia* site.

The distribution of *Parnassia asarifolia* and *P. grandifolia* in Arkansas, Texas, Oklahoma, Mississippi, and Louisiana is shown in Figure 1.

## DOCUMENTATION

*Parnassia grandifolia*: LA: Natchitoches Parish, MacRoberts, MacRoberts, Stacey, Moore s.n. [NLU]; MacRoberts & MacRoberts 3341, 3736 [LSU]. OK: Choctaw Co., Taylor & Taylor 23223, 23596, 23797, 27365 [DUR-BRIT]. TX: Smith Co., Reverchon s.n. [BRIT].

*Parnassia asarifolia*: TX: Rusk Co., Banks 3957 [ASTC]; Nacogdoches Co., Nixon 15086 [ASTC], Lacey 789 [BRIT], MacRoberts & MacRoberts 3344 [TEX], MacRoberts & MacRoberts 3343 [LSU].

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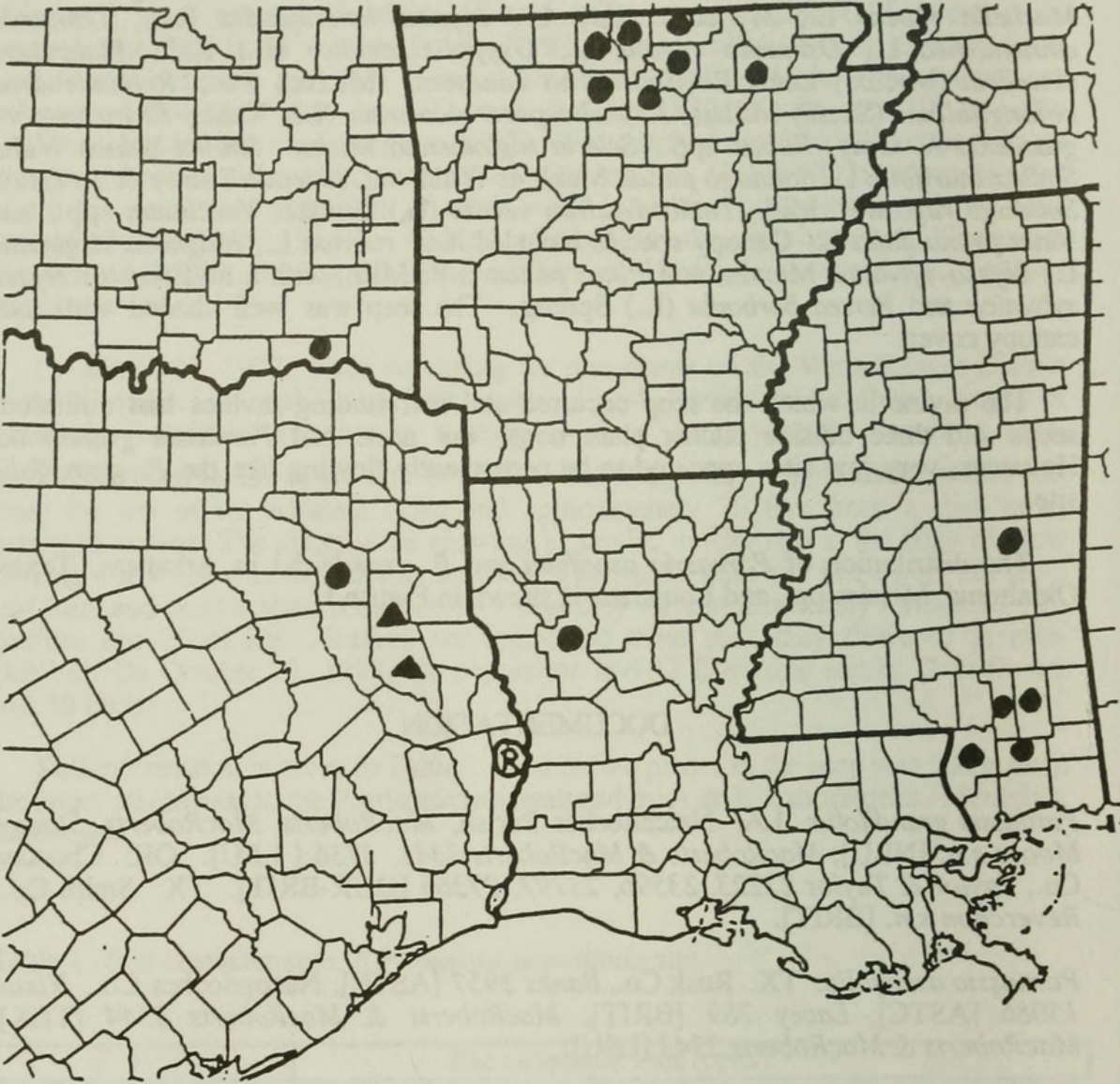


Figure 1. Distribution of Parnassia grandifolia (circles and R) and P. asarifolia (triangles) in Arkansas, Louisiana, Mississippi, Oklahoma, and Texas.



Bradburn and Susan L. Richardson provided information about J.L. Riddell and *Parnassia*. Connie Taylor and R. Dale Thomas reviewed an earlier version of the paper.

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