

## INTERSECTIONAL HYBRID OF *LIATRIS* (ASTERACEAE: EUPATORIEAE) FROM NORTHWEST INDIANA

NATHANAEL J. PILLA  
225 Michigan St.  
Porter, Indiana 46304  
npilla@midwestbiologicalsurvey.com

### ABSTRACT

A spontaneous hybrid between *Liatris scariosa* var. *nieuwlandii* and *L. spicata*, described here as *L. ×boardii* Pilla, **hybrid nov.**, was discovered at a remnant silt-loam prairie in Lake Co., Indiana. The hybrid exhibits intermediate morphological features between the putative parents. This is the first recorded hybrid involving *L. scariosa*.

*Liatris* (Asteraceae: Eupatorieae) is represented by 37 species within North America (Nesom 2005). Natural hybridization between species has been well documented, with 14 named hybrids occurring in North America (Cruise 1964; Gaiser 1951; Levin 1967; Nesom 2006; Shinnery 1943; White and Nesom 2012). Cruise (1964) investigated artificial hybridization among 6 *Liatris* species: *L. aspera*, *L. cylindracea*, *L. punctata*, *L. pycnostachya*, *L. scariosa*, and *L. spicata*. All but *L. scariosa* successfully hybridized during the study.

In 2020, a single plant, apparently a hybrid between *Liatris scariosa* var. *nieuwlandii* (Lunell) E.G. Voss (sect. *Graminifolium*) and *L. spicata* (L.) Willd. (sect. *Suprago*) was discovered in a remnant silt-loam prairie in the city of Hobart, Lake Co., Indiana. Both parents were locally abundant in the prairie and were vouchered on the same date (*L. scariosa* var. *nieuwlandii* (Pilla & Pilla NJP.2009.1303, ILLS); *L. spicata* (Pilla & Pilla NJP.2009.1302, ILLS). The hybrid exhibits traits intermediate between the putative parents (Fig. 1; Table 1). No other species of *Liatris* were present in the vicinity.

This is the first record of hybridization involving *Liatris scariosa*.

***Liatris ×boardii* Pilla, hybrid nov.** [*L. scariosa* var. *nieuwlandii* × *L. spicata*] **TYPE: Indiana.** Lake Co.: Cressmoor Prairie Nature Preserve, N side of Hobart, 41° 32' 36.0" N, 87° 15' 53.4" W, a single plant in remnant prairie directly off the trail prior to the large loop. Associated species: *Agrimonia parviflora*, *Andropogon gerardi*, *Anemone virginiana*, *Asclepias syriaca*, *Daucus carota*, *Helianthus grosseserratus*, *Liatris scariosa* var. *nieuwlandii*, *Liatris spicata*, *Pycnanthemum virginianum*, *Solidago altissima*, *Solidago rigida*, *Symphotrichum ericoides*, *Vernonia missurica*, *Vitis riparia*, 13 Sep 2020, N. Pilla & M. Pilla NJP.2009.1301 (ILLS).

**Perennial.** **Stems** to 1.4 meters tall, stiff, erect, puberulent. **Leaves** linear to linear-lanceolate (Fig. 2), basal and lower cauline 1–5-nerved, glabrous to puberulent, gland-dotted, cauline gradually reduced in size distally. **Inflorescence** a dense racemiform array; peduncles strongly ascending 3–18 mm long, reduced in length up the inflorescence (Fig. 3). **Heads** cylindrical to subcylindrical, (6–)11–28 flowered, pedunculate, phyllaries appressed (Fig. 4), in (2–)3–5 series, slightly farinose, unequal, oblong, glandular, margins often with hyaline borders. **Corolla tubes** glabrous and glandular inside. **Pappus bristles** barbellate-setose.

The epithet (“*boardii*”) is here proposed in honor of the late amateur botanist and teacher Keith Board, who fought to protect the prairie where this hybrid was discovered. The suggested common name is Board’s blazingstar.



Figure 1. *Liatris xboardii* (center) and its parents: *L. spicata* (left) and *L. scariosa* var. *nieuwlandii* (right). Photos from Cressmoor Prairie, Hobart, Lake Co., Indiana, 9 and 13 September 2020.



Figure 2. Leaves of *Liatris xboardii*.



Figure 3. Inflorescence of *Liatris xboardii*.



Figure 4. Late-flower heads of *Liatris* ×*boardii*.

Table 1. Morphological comparisons of *Liatris spicata*, *L. xboardii*, and *L. scariosa* var. *nieuwlandii*. Measurements for the parental species are based on personal observation, Shinnars (1943), Gaiser (1946a), Gaiser (1946b), and Nesom (2006).

	<i>L. spicata</i>	<i>L. xboardii</i>	<i>L. scariosa</i> var. <i>nieuwlandii</i>
<b>Peduncles</b>	None (rarely 1-2 mm)	2-18(-21) mm	10–50 mm
<b>Height</b>	(20-) 40-110 (-180) cm	Up to 143 cm	30-100 cm
<b>Stems</b>	Glabrous (often puberulent in and below inflorescence, especially in the Chicago region)	Puberulent	Puberulent
<b>Basal and lower cauline leaf nerves</b>	3-5	1-5	1
<b>Cauline leaves</b>	Gradually reduced distally.  Essentially glabrous or sparsely hirsute, gland-dotted	Gradually reduced distally.  Glabrous to puberulent and gland-dotted	Abruptly to gradually reduced distally.  Usually glabrous, sometimes pubescent; weakly if at all gland-dotted
<b>Inflorescence</b>	Dense to loose spiciform array	Dense racemiform array	Loose racemiform array

<b>Corolla tubes</b>	Glabrous inside	Glabrous inside	Usually pilose inside, rarely glabrous
<b>Flowers per head</b>	(4-)5-8(-18)	(6-)11-28	30-80
<b>Series of phyllaries</b>	(3-)4-5	(2-)3-5	(3-)4-5
<b>Phyllaries</b>	Glandular; somewhat farinose; glabrous	Glandular; somewhat farinose; glabrous to slightly puberulent	Glandular; glabrous or puberulent

*Liatris* × *steelei* (*Liatris aspera* × *L. spicata*) has been documented nearby in Lake and Porter counties, Indiana, but differs in key morphological features. Notably, specimens of *L. ×steelei* (Deam 51806 and 92659, IND) possess sessile to subsessile heads, whereas *L. ×boardii* has peduncles often exceeding 10 mm, especially lower in the inflorescence.

#### ACKNOWLEDGEMENTS

A thank-you to Bradford Slaughter, Orbis Environmental Consulting, for assisting me with the fieldwork and discovery of the hybrid; Matteo C. Pilla, aspiring botanist, for providing valuable assistance in data collection and measurements; Scott Namestnik, Indiana DNR, for graciously reviewing the draft manuscript; and Shirley Heinze Land Trust for their continued protection of sensitive natural areas such as Cressmoor Prairie.

#### LITERATURE CITED

- Cruise, J.E. 1964. Biosystematic studies of three species in the genus *Liatris*. *Canad. J. Bot.* 42: 1445–1455.
- Gaiser, L.O. 1946a. The genus *Liatris*. *Rhodora* 48(572): 165–183.
- Gaiser, L.O. 1946b. The genus *Liatris*. *Rhodora* 48(576): 273–326.
- Gaiser, L.O. 1951. Evidence for intersectional field hybrids in *Liatris*. *Evolution* 5: 52–67.
- Levin, D.A. 1967. An analysis of hybridization in *Liatris*. *Brittonia* 19: 248–260.
- Nesom, G.L. 2005. Infrageneric classification of *Liatris* (Asteraceae: Eupatorieae). *Sida* 21: 1305–1321.
- Nesom, G.L. 2006. *Liatris*. Pp. 512–535, in *Flora of North America North of Mexico*, Vol. 21. Oxford Univ. Press, New York and Oxford.
- Shinners, L.H. 1943. A revision of the *Liatris scariosa* complex. *Amer. Midl. Nat.* 29: 27–41.
- White, M. and G.L. Nesom. 2012. Two intersectional hybrids in *Liatris* (Asteraceae) from east Texas. *Phytoneuron* 2012-21: 1–6.