NOTEWORTHY COLLECTION

FIRST OCCURENCE OF JAPANESE STILTGRASS, *MICROSTEGIUM VIMINEUM* (TRIN.) A. CAMUS (POACEAE), IN WISCONSIN

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Microstegium vimineum (Trin.) A. Camus
Poaceae
Japanese stiltgrass; Nepalese browntop

Significance of the Report: *Microstegium vimineum* (Trin.) A. Camus, an invasive grass species, has been recorded for the first time in the state of Wisconsin, at the Coulee Experimental State Forest (CESF), La Crosse County.

Previous Knowledge: *Microstegium vimineum* was first identified in the United States in Tennessee in 1919. Since then, it has spread significantly, and now ranges from New York south to Florida, and from the Atlantic coast to Texas, as well as into Ontario and the Caribbean. *M. vimineum* has a number of common names, including Japanese stiltgrass, Nepalese browntop, and Asian stiltgrass (Fairbrothers and Grey, 1972; Evans et al., 2009).

Microstegium vimineum is a highly adaptable plant that poses a significant threat to vulnerable areas. Growing in dense, sprawling mats (Figure 1), it can outcompete native plants and impact regeneration of timber-producing tree species. (Oswalt et al., 2007) Monotypic cultures can form in three to five years. It grows

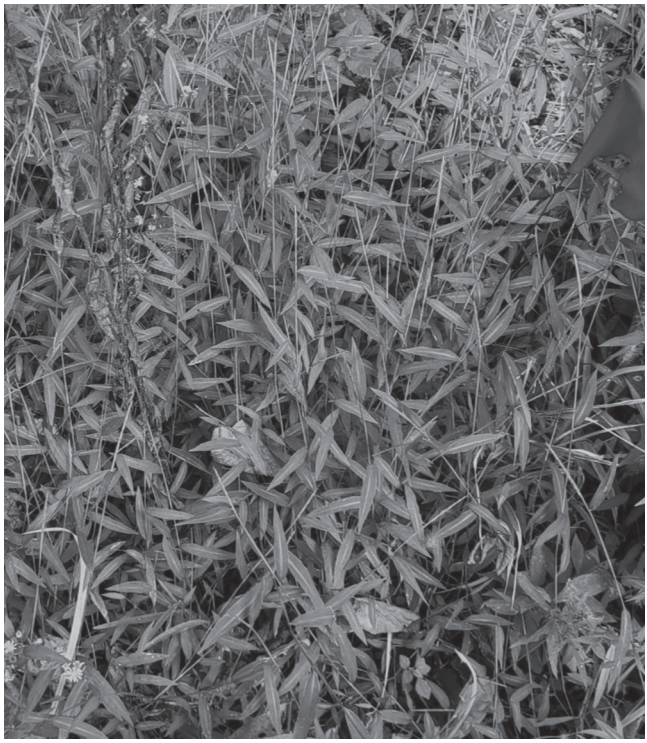

FIGURE 1. A thick patch of Microstegium vimineum at the Coulee Experimental State Forest, Bangor, Wisconsin. The white midrib is clearly visible on the leaves. Photo by Amanda K. Weise.

well along roads and streambanks, and in heavily disturbed soils (Gibson et al., 2002). *Microstegium vimineum* generally favors moist soils but can also establish itself in dry uplands. Despite using C4 photosynthetic pathways, it is remarkably shade tolerant, and responsive to changes in light conditions (Horton, 1998).

Discussion: The Coulee Experimental State Forest is a 3,000-acre property managed by the Wisconsin Department of Natural Resources near the village of Bangor in La Crosse County. A small population of *Microstegium vimineum* was found in 2020 near a gravel parking area and along a trail leading up to a flat top ridge (Wisconsin Department of Natural Resources, 2009) Interestingly, this infestation is geographically far-removed from other known occurrences, indicating either human-assisted spread, or that *M. vimineum* may already be more widespread than is known.

The infested area is mostly oak and mesic hardwood forest with an overstory primarily of Carya *ovata* (Mill.) K. Koch, *Juglans nigra* L., and *Quercus spp*. The understory is diverse, with *Ribes cynosbati* L., *Zanthoxylum americanum* Mill., *Prunella vulgaris* L., *Leersia virginica* Willd., *Erigeron* sp., *Galium* sp., *Monarda* sp., and *Fragaria* sp. forming significant parts.

Wisconsin Department of Natural Resources staff are managing the infestation. Survey and control methods are implemented each year and include chemical and non-chemical treatments. A combination of herbicide application and spot burning appear to have limited the spread but have not eradicated the population. Surveys to map the extent of the invasion are ongoing.

Microstegium vimineum is regulated in Wisconsin by the invasive species rule, making it illegal to possess, transport, transfer, or introduce this species. (Wis. Admin. Code § NR 40.04(2)(b)25)

Diagnostic Characters: *Microstegium vimineum* is a weakly rooted, annual grass that grows in dense, mats with stilt-like roots descending from the nodes. A characteristic off-center, white midrib is a helpful diagnostic character. Chasmogamous inflorescences are terminal racemes bearing paired spikelets. while axillary cleistogamous inflorescences are concealed within the upper sheaths. Auricles are absent. Awns may or may not be present and are highly variable in length, although they are present in the Wisconsin population. The collar and sheath margin are ciliate.

Microstegium vimineum is morphologically similar to *Leersia virginica* and the two can easily be mistaken. However, *L. virginica* has a glabrous sheath margin, distinctly pubescent stem node and flowers in singular spikelets borne in June and July. A perennial, *L. virginica* has a robust root system with thick, scaley rhizomes rather than the fibrous roots of *M. vimineum*. It also lacks the stilts and the white midrib (Evans et al., 2019) and flowers much later.

Specimen Citations: WISCONSIN. La Crosse Co.: Coulee Experimental State Forest, about 150 feet along the trail from the parking lot at the west end of Russlan Coulee Rd., N 43.86, W –91.023. Mesic deciduous forest, part of dispersed population along Russlan Coulee Rd. and along trail to top of coulee. September 17, 2022, *Evan Chalmers 22-01* (UWL). Ibid., N 43.86074, W –91.0238. Edge of *Acer saccharum-Quercus rubra-Populus deltoides-Acer negundo* woods. Associated species: *Elymus verginicus, Leersia verginica, Persicaria longiseta, P. virginiana, Rosa multiflora,* and *Vitis riparia*. September 29, 2020, *Mary Ann Feist & Brenda Molano-Flores 7918* (WIS). Ibid., N 43.86079, W –91.02391. July 23, 2020, *Maureen Ferry s.n.* (WIS) Ibid., N 43.858744, W –91.020362, right before the parking area closest to the trailhead. Edge of gravel road. September 16, 2024. *Carter Hellenbrad 1* (WIS); ibid. N 43.860478, W –91.023312. *2* (WIS); ibid., N 43.858558, W –91.016712. *3.* (WIS) Ibid., [N 43.86, W –91.023]. August 30, 2020, *Justin A. Nooker s.n.* (UWSP) Northeast Coulee Oak Woodland State Natural Area, SNA trail entrance at the end of a parking lot/turnaround, N 43.863240, W –091.032207. Several hundred plants, ruderal area within a rich mesic forest not far from a stream. Associated species: *Arctium minus, Brachyelytrum* cf. *erectum, Dichanthelium* sp., *Fagopyrum esculentum*, and other forbs. July 22, 2020, *Amanda K. Weise s.n.* (MIN)

ACKNOWLEDGEMENT

The authors thank Theodore Cochrane for his thorough review of the manuscript and for providing citations for the majority of specimens.

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Wisconsin Administrative Code § NR 40.04(2)(b)25 https://docs.legis.wisconsin.gov/code/admin_code/nr/001/40/04/2.

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