

NOTEWORTHY COLLECTION

MICHIGAN

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(mcr268@nau.edu)*Petasites hybridus* (L.) G. Gaertn., B. Mey. & Scherb.

Asteraceae

Butterfly dock, common butter bur

Significance of the Report. The third Michigan collection record of this highly invasive non-native species.

Previous Knowledge. *Petasites hybridus* is native to Europe and central Asia, where it grows along riverbanks and other damp places. In northern Europe, as well as in areas where it has been introduced near the edge of its range, female individuals of *P. hybridus* are absent or rare. It is likely this plant spreads through its complex rhizomatous growth (Dingwall 1976).

For centuries, *Petasites hybridus* has been used as a medical plant for migraines and as a remedy for hay fever due to its rich suite of sesquiterpene phytochemicals (Saritas et al. 2002; Lipton et al. 2004). Within its native range, there is a diverse geographical distribution of these sesquiterpenes as well as of a suite of alkaloids that varies between populations. As a result of this phytochemical variation, some populations are more frequently used as a source of medicinals than others (Chizzola et al. 2002). In addition to their medicinal uses, these phytochemicals play an important role in defense from herbivory (Hägele et al. 1998).

Petasites hybridus has been introduced locally across eastern North America, likely due to its medicinal properties and to the horticultural value of its unusually large leaves. Naturalized populations have been recorded from 10 different states within the United States, most of which are documented in the Midwest and northeast (USDA, NRCS 2017). In Michigan, there are only two documented locations, one in Eaton County in the south-central portion of the Lower Peninsula, and the other in Marquette County in the Upper Peninsula (Voss and Reznicek 2012). In both counties the plant has spread aggressively. For instance, the banks of tributaries near the Dead River in Marquette, Michigan, as well as several miles of roadsides, are dominated by *P. hybridus*. In the last 15 years this plant has spread throughout the city of Marquette and Marquette Township and has become a management priority for local conservation groups. There are also additional scattered reports of this plant across Michigan in the Midwest Inva-



FIGURE 1. *Petasites hybridus* growing along the West Branch of the Flat River, Montcalm County, Michigan. This is one of two large colonies in this population that is growing on the edge of private property into the state game area. Photo by Michael C. Rotter.

sive Species Information Network database (MISIN 2017). The degree of naturalization of these plants is unknown but may represent additional source populations for further invasion.

Discussion. *Petasites hybridus* was found along the west branch of the Flat River in Montcalm County, Michigan within the Langston State Game Area (43°17'43.43"N, 85°15'47.31"W) near Hunter Lake during the summer of 2016 (Fig. 1). The population was found growing abundantly and seemed to be spreading from a location on private residential property. Discussions with the previous home owners revealed that it was planted as an ornamental and spread after dumping yard waste into the flood plain (the landowner mentioned that the plants were "taking over the garden"). The former owners obtained them because of their unusually large leaves. Escape from cultivation is likely the main source of establishment in North America. For this reason, Wisconsin, for example, has listed *P. hybridus* as a prohibited species (WDNR 2017).

Petasites hybridus is highly invasive in most conditions such that it is able to easily outcompete other plants for resources. In particular, its large leaves shade out other species, and its aggressive vegetative growth make it a potential threat to wetlands in eastern North America. Surveillance is important for detecting this species early before it has a chance to take over natural areas and for controlling new populations. Additionally, educating the public about the ecological threats this plant poses to native plants and working with land owners will help to counter widespread planting of this species.

Diagnostic Characters. In Michigan, *P. hybridus* can be recognized by its large leaves (up to 1m across) that resemble those of cultivated rhubarb (Fig 2).



FIGURE 2. A leaf of *Petasites hybridus*. The large size is reminiscent of the unrelated cultivated rhubarb. Photo by Michael C. Rotter.

Plants can grow up to 6 feet high and form a dense canopy. Flowers are produced in early spring before the foliage, and the inflorescences consist of spikes of pink-purple flowers. *Petasites hybridus* can be distinguished from the native *P. frigidus* (L.) Fries and *P. sagittatus* (Pursh) A. Gray by its pink-purple flowers, in contrast to the creamy-white flowers of the native species. The leaves of *P. hybridus* are much larger than those of either of the native species. *Petasites japonicus* (Siebold & Zucc.) Maxim. is another cultivated species that may escape cultivation and has been found in Ontario and the Pacific Northwest (Kartesz 2015). *Petasites hybridus* can be distinguished from *P. japonicus* by the regularly dentate lobes on *P. hybridus*.

Specimen citation. Montcalm County. Observed on private property and found to be spreading into state land along the west branch of the Flat River near Hunter Lake. 43°17'43.43"N, 85°15'47.31"W. Large leaves (up to 1m wide) present, but only small leaves collected. Leaves collected on August 17, 2016, and flowers collected on March 3, 2017. Several large patches (each about 10m in area) were observed spreading in seep areas and along the Flat River. Associated species: *Acer saccharum*, *Fraxinus americana*, *Caltha palustris*, *Fagus grandifolia*. Rotter 717 (MICH).

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