

Additions to the Vascular Flora of Illinois

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ABSTRACT

Descriptions are provided for 15 non-native taxa that are new to the flora of Illinois. A previous report of *Phyllostachys aureus* was misidentified and is corrected as *P. aureo-sulcata*.

INTRODUCTION

Continued botanical study of urban environments and abandoned homesites in southern Illinois has led to the discovery of 15 non-native taxa that are new to the flora. These taxa are considered naturalized in Illinois because they have established populations that have the potential to be self-sustaining (Swink and Wilhelm 1994). Mohlenbrock (1986) stated that approximately 30% of all plant species in Illinois are non-native, 10-15 new taxa are recorded for Illinois each year, and the majority of these new additions are non-native. Nomenclature for associated taxa follows Mohlenbrock (1986). Voucher specimens have been deposited either at the Illinois Natural History Survey Herbarium (ILLS) in Champaign-Urbana or in the author's personal herbarium (mab).

RESULTS AND DISCUSSION

Akebia quinata (Houtt.) Decne. (Chocolate vine, five-leaf akebia, Lardizabalaceae): Jackson Co., IL, naturalized from an original planting at plant biology greenhouse on the Southern Illinois University campus, NW/4 Sec. 28 T9S R1W, 14 July 1999, M.A. Basinger 11973a (ILLS); Pope Co., IL, 0.75 mi south of IL 146 on the Bay City Road, E.F. Ulaszek, 2295, 2340, 2341 (ILLS); Pope Co., IL, is persistent and spreading over a large vacant lot in Golconda south of IL 146 on Bay City Road, 17 July 1999, M.A. Basinger 11986a (ILLS). These collections represent the addition of a new family and genus to the Illinois flora. Associated species at these two sites were *Acer saccharum* Marsh., *Albizia julibrissin* Duraz., *Ampelopsis cordata* Michx., *Cercis canadensis* L., *Elymus virginicus* L., *Euonymus fortunei* (Turcz.) Hand.-Maz., *Forsythia* sp., *Parthenocissus quinquefolia* (L.) Planch., *Sanicula canadensis* L., and *Toxicodendron radicans* (L.) Kuntze.

This species is a woody, high climbing vine to 10 m or more long that is native to east Asia. The plant has alternate, palmately compound leaves usually with five elliptic to obovate leaflets. The fragrant flowers are monoecious in axillary racemes and are a purplish color. The fruit is a purple-violet berry 6 to 13 cm long and is rarely produced in

the United States (Rehder 1940, Bailey 1949, Radford et al. 1968). The Plant Conservation Alliance (2001) lists this species as an invasive vine in the eastern United States because of its rapid growth rate.

Aphanes microcarpa (Boissier & Reuter) Rothm. (Roaceae): Hardin, Co., IL, is locally abundant at a scenic overlook of the Ohio River at Cave-in-Rock State Park, 12 June 2000, M.A. Basinger 12255 (ILLS). Associated species were *Cynodon dactylon* (L.) Pers., *Lepidium virginicum* L., *Myosotis stricta* Link, *Oxalis dillenii* Jacq., *Poa annua* L., *Sherardia arvensis* L., and *Trifolium repens* L.

This annual species is native to southern Europe and is distinguished by its small stature (usually less than 10 cm tall), trifid leaves with deeply three-lobed segments, and large stipules that are twice as long as the leaves. Flowers are borne within inflated stipules in axillary clusters of 3 to 7. Each flower has 4 sepals, 0 petals, 1 stamen, and 1 carpel. The fruit is an achene (Fernald 1950, Radford et al. 1968, Gleason and Cronquist 1991). Fernald (1950) and Radford et al. (1968) call this plant *Achemilla microcarpa* Boissier & Reuter and Gleason and Cronquist (1991) suggest that *Aphanes* is quite similar to *Achemilla* and is sometimes included in that genus.

Buxus sempervirens L. (Boxwood, Buxaceae): Jackson Co., IL, is a rare and local small shrub that escaped into dry-mesic upland forest and adjacent pine plantation at Marberry Arboretum along Pleasant Hill Road in Carbondale, 12 September 1999, M.A. Basinger 12114 (ILLS, mab). Associated species were *Elephantopus carolinianus* Willd., *Liriodendron tulipifera* L., *Parthenocissus quinquefolia*, *Phryma leptostachya* L., *Pinus echinata* Mill., *P. strobus* L., *Rehsonia sinensis* (Sims) Stritch, *Sanicula canadensis*, and *Toxicodendron radicans*.

Boxwood is a commonly cultivated shrub native to southern Europe, northern Africa, and western Asia that can grow to 10 m tall. It has opposite, elliptic to oblong leaves that are dark green above and yellow-green beneath. The leaves are broadest below the middle and have an obtuse or emarginate apex. Branches are usually quadrangular and slightly puberulent. Boxwood is monoecious with apetalous staminate and pistillate flowers in axillary clusters. Fruits are round, three-carpeled capsules with two seeds per carpel (Rehder 1940, Bailey 1949).

Callicarpa dichotoma (Lour.) K. Koch (Asian beautyberry, Verbenaceae): Jackson Co., IL, is a rare small shrub that has escaped along the Thompson Lake footpath near the wooden foot bridge on the Southern Illinois University campus, Carbondale, Sec. 28 T9S R1W, 13 July 1999, M.A. Basinger 11972a (ILLS). Associated species were *Acer rubrum* L., *Alliaria petiolata* (Bieb.) Cavara & Grande, *Cornus drummondii* C.A. Mey., *Corylus americana* Walt., *Cryptotaenia canadensis* L., *Impatiens capensis* Meerb., *Quercus imbricaria* Michx., *Sanicula canadensis*, and *Toxicodendron radicans*.

Asian beautyberry is native to China and Korea. It grows to 2 m tall and has opposite, elliptic to obovate leaves that are serrate in the upper half of the blade. The four-merous pink flowers are in cymes, and the violet fruits are two to four-seeded drupes (Rehder 1940, Bailey 1949).

Carex pendula Hudson (Drooping sedge, Cyperaceae): Jackson Co., IL, was originally planted but is now spreading and naturalized along an intermittent drainage in Thompson Woods on the Southern Illinois University campus, NE/4 NW/4 Sec. 28 T9S R1W, 27 June 1999, M.A. Basinger 11960 (ILLS). Associated species were *Acer negundo* L., *Aster simplex* Willd., *Betula nigra* L., *Cryptotaenia canadensis*, *Impatiens capensis*, *Lycopus virginicus* L., *Polygonum punctatum* Ell., *Sambucus canadensis* L., *Ulmus americana* L., and *Viburnum carlesii* Hemsl.

Drooping sedge is a clump-forming, perennial sedge that is found throughout Europe in damp woods and shaded ravines. Broad, keeled leaves from 1 to 2 cm wide characterize this species. The flowering culms have 4 to 5 green, pendulous pistillate spikes with a brownish male spike terminating the inflorescence. The scales subtending the perigynia are reddish-brown and oval-shaped with an acute tip (Polunin 1969).

Corylus maxima Mill. (Filbert, Corylaceae): Jackson Co., IL, forms a large cluster of shrubs along margin of woodland adjacent to Thompson Lake Trail across from Stone Alumni Center (president's residence) on the Southern Illinois University campus, Carbondale, Sec. 28 T9S R1W, 14 August 1999, M.A. Basinger 12091(ILLS). Associated species were *Acer rubrum*, *Alliaria petiolata*, *Carex blanda* Dewey, *Carya ovata* (Mill.) K. Koch, *Lonicera japonica* Thunb., *L. maackii* (Rupr.) Maxim, *Osmorhiza longistylis* (Torrey) DC., *Quercus imbricaria*, and *Toxicodendron radicans*.

Filbert is a colonial shrub native to eastern Europe and western Asia. The ovate to obovate leaves are similar to *Corylus americana* Walt. also having a slight cordate base, glandular-hairy petioles, and doubly serrate margin. The fruit is reminiscent of *Corylus cornuta* Marsh., with a pubescent, tubular involucre that surrounds the nut (Rehder 1940).

Ginkgo biloba L. (Ginkgo, Ginkgoaceae): Jackson Co., IL, occurs as two seedlings, from planted trees, in Thompson Woods on the Southern Illinois University campus, Carbondale, NE/4 NW/4 Sec. 28 T9S R1W, 29 May 1999, M.A. Basinger 11857 (ILLS); Union Co., IL, numerous seedlings are at an old homesite from planted trees at Union County Conservation Area. Associated species at these two sites were *Acer saccharum*, *Corydalis flavula* (Raf.) DC., *Elaeagnus umbellata* Thunb., *Festuca arundinacea* Schreb., *Lamium amplexicaule* L., *L. purpureum* L., *Lonicera japonica*, *L. maackii*, *Toxicodendron radicans*, *Vitis aestivalis* Michx., and *V. cinerea* Engelm.

This gymnosperm is native to eastern China but has been cultivated in the United States for over 200 years. This species can attain a height of 40 meters. Alternate, deciduous, fan-shaped leaves with dichotomous venation characterize this species. Leaves are produced in clusters of three to five on spur shoots. Mature plants are dioecious, and the edible seeds of megasporangiate cones are covered with a fleshy aril that produces butyric acid, a foul-smelling chemical (Rehder 1940, Bailey 1949).

Ligustrum sinense Lour. (Chinese privet, Oleaceae): Pope Co., IL, is locally abundant at forest edge at Ohio River Recreation Area approx. 2 mile north of Golconda off of IL 146, 31 July 1998, M.A. Basinger and J. P. Shimp 11398 (ILLS); 17 July 1999, M.A. Basinger 11984 (ILLS); Jackson Co., IL, found along forest edge north of Lesar Law Building on the Southern Illinois University campus, Carbondale, 31 July 1999, M.A.

Basinger 12027. Associated species at these two sites were *Ailanthus altissimus* (Mill.) Swingle, *Ampelopsis cordata*, *Celastrus orbiculatus* Thunb., *Elaeagnus umbellata*, *Lonicera japonica*, *L. maackii*, *Melothria pendula* L., *Rehsonia sinensis*, *Robinia pseudoacacia* L., *Vinca major* L., and *Vitis* spp.

This privet is native to China and is quite similar to the common privet, *Ligustrum vulgare* L., which is more common in Illinois (Mohlenbrock 1986, Swink and Wilhelm 1994). *Ligustrum sinense* is characterized as a multi-stemmed shrub to 8 m tall with opposite, elliptic to oblong leaves that are pubescent on the main vein underneath. Young branches are densely pubescent. The flowers have pubescent calyx tubes. The white corolla tubes are shorter than their lobes, and the stamens are exserted. The blackish drupes are usually one-seeded (Rehder 1940, Bailey 1949, Radford et al. 1968, Randall and Marinelli 1996). Randall and Marinelli (1996) list a group of privet species, including Chinese privet, as invasive species due to their shade tolerance and prolific production of bird-dispersed fruit.

Magnolia stellata (Sieb. & Zucc.) Maxim. (Star magnolia, Magnoliaceae): Jackson Co., IL, is rare, with only two shrubs in Thompson Woods on the Southern Illinois University campus, Carbondale, NE/4 NW/4 Sec. 28, T9S R1W, 29 May 1999, M.A. Basinger 11980a (ILLS). Associated species were *Acer negundo*, *A. saccharum*, *Euonymus fortunei*, *Eupatorium rugosum* Houtt., *Fagus grandifolia* Ehrh., *Juniperus virginiana* L., *Lonicera japonica*, *L. maackii*, *Morus alba* L., *Parthenocissus quinquefolia*, *Quercus falcata* Michx., *Q. velutina* Lam., and *Toxicodendron radicans*.

Star magnolia is native to Japan and is commonly planted as an ornamental in Illinois. This species is flowers before the leaves appear, and the flowers have linear to oblong sepals and petals that are both white and fragrant. The leaves are alternate and elliptic to obovate. The cone-like fruit is an aggregate of follicles approximately 5 cm long (Rehder 1940, Bailey 1949).

Mahonia bealei Thunb. (Beal's mahonia, Berberidaceae): Jackson Co., IL, is naturalized in dry-mesic upland forest from homesite plantings at Marberry Arboretum off of Pleasant Hill Road, Carbondale, 12 September 1999, M.A. Basinger 12113 (ILLS); Jackson Co., IL, grows infrequently in dry-mesic upland forest at an old nursery site on Shawnee National Forest adjacent to Stone Creek Golf Club in Makanda, 27 February 2000, M.A. Basinger 12175 (ILLS). Associated species at these two sites were *Acer campestre* L., *A. saccharum*, *Elephantopus carolinianus*, *Elymus virginicus*, *Eupatorium rugosum*, *Hedera helix* L., *Phryma leptostachya*, *Phyllostachys aureosulcata* McClure, *Quercus alba* L., *Q. velutina*, *Rehsonia sinensis*, *Sanicula canadensis*, *Sasa palmata* (Bean) Nakai, *Taxus cuspidata* Sieb. & Zucc., *Toxicodendron radicans*, and *Ulmus alata* Michx..

Beal's mahonia is shrub native to China that grows to 4 m tall. It has pinnately compound leaves with 9 to 15 leaflets, yellow-green above, and glaucous below with 1 to 6 spinose teeth on each side of the leaflets. The lowest pair of leaflets is highly reduced in size compared to the others and is attached very close to the base of the petiole, making the leaf appear sessile. This species is similar to *Mahonia aquifolium* (Pursh) Nutt., which is native to western North America, and *M. japonica* (Thunb.) DC., which is native to Japan. *M. aquifolium* has between 5 to 9 leaflets, each with more than 10 teeth on each

side. *M. japonica* has 9 to 15 leaflets that are yellow-green below. Large ovate and acuminate bracts subtend its flowers.

Parietaria officinalis L. (Erect Pellitory-of-the-wall, Urticaceae): Jackson Co., IL, is rare with only two plants in dry-mesic upland forest in Thompson Woods on the Southern Illinois University campus, Carbondale, NE/4 NW/4 Sec. 28 T9S R1W, 6 June 1999, M.A. Basinger 11920a (ILLS). Associated species were *Bromus pubescens* Muhl., *Elymus virginicus*, *Euonymus fortunei*, *Lonicera japonica*, *L. maackii*, *Prunus serotina* Ehrh., *Sambucus canadensis*, *Ulmus alata*, and *U. americana*.

Erect Pellitory is native to southeast Europe where it is found in a variety of habitats such as roadsides, forest edges, and cracks in rock walls. This species is a perennial with simple to few branched stems to 1 m tall. Leaves are oval, cuneate at the base and long acuminate at the apex. The inflorescence is comprised of a large number of green axillary flowers that are much shorter in length than the petioles (Polunin 1969).

Phyllostachys aureosulcata McClure (Yellow groove bamboo, Poaceae): Jackson Co., IL, is vegetatively spreading from an old homesite into dry-mesic upland forest at Marberry Arboretum in Carbondale along Pleasant Hill Road, 28 June 1998, M.A. Basinger 11347.

This bamboo was previously misidentified in Basinger (1999) as *Phyllostachys aureus* (Carr.) Riv., which is referred to as *P. aurea* by Young and Haun (1961). Rehder (1940) does not reference *P. aureosulcata* in the key or text. Eric Ulaszek (pers. comm.) has determined that most specimens in the 13 southernmost counties of Illinois around old homesites are not *P. aurea* but are *P. aureosulcata*. Its distinguishing features are the yellow sulcus on internodes of young shoots, scabrous internodes on young shoots, and culms that occasionally have a zigzag growth pattern (Young and Haun 1961).

Sasa palmata (Bean) Nakai (Small bamboo, Poaceae): Jackson Co., IL, rare woody grass naturalized in dry-mesic upland forest at Marberry Arboretum along Pleasant Hill Road, Carbondale, 12 September 1999, M.A. Basinger 12115. Associated species were *Acer campestre*, *A. saccharum*, *Hedera helix*, *Mahonia bealei*, *Phyllostachys aureosulcata*, *Quercus velutina*, *Rehsonia sinensis*, and *Toxicodendron radicans*.

This bamboo is native to Japan and is usually less than 2 m tall. The purplish stems have strongly reticulate leaf sheaths that are covered with round spots. Leaves are lanceolate and are bright green above and glaucous below. They are crowded at the tops of branches due to a series of short internodes (Rehder 1940, Bailey 1949).

Taxus cuspidata Sieb. & Zucc. (Japanese yew, Taxaceae): Jackson Co., IL, is rare, only seedlings were observed in dry-mesic upland forest, Thompson Woods, on the Southern Illinois University campus, NE/4 NW/4 Sec. 28 T9S R1W, 27 June 1999, M.A. Basinger 11969 (ILLS); Jackson Co., IL, is rare as seedlings in dry-mesic upland forest (Shawnee National Forest property) adjacent to Stone Creek Golf Club along US 51 in Makanda, 27 February 2000, M.A. Basinger 12176 (ILLS). Associated species at these two sites were *Acer saccharum*, *Aesculus pavia* L., *Aralia spinosa* L., *Hibiscus syriacus* L., *Ligustrum*

vulgare L., *Lonicera japonica*, *L. maackii*, *Mahonia bealei*, *Quercus alba*, *Q. velutina*, *Toxicodendron radicans*, and *Ulmus alata*.

Japanese yew is an evergreen shrub native to Japan and Korea and is a commonly planted ornamental shrub in Illinois. It grows to 16 m tall. The spirally arranged linear leaves have apiculate tips. Winter buds are covered with keeled scales. Plants are dioecious with the female plants appearing conspicuous when they form seeds that are partially covered by cup-shaped, red, fleshy arils (Rehder 1940, Bailey 1949).

Viburnum carlesii Hemsl. (Caprifoliaceae): Jackson Co., IL, is rare, only two shrubs were found along intermittent drainage in Thompson Woods on the Southern Illinois University campus, Carbondale, NE/4 NW/4 Sec. 28 T9S R1W, 29 May 1999, M.A. Basinger 11856 (ILLS). Associated species were *Acer negundo*, *Aster simplex*, *Betula nigra*, *Carex pendula*, *Cryptotaenia canadensis*, *Impatiens capensis*, *Lycopus virginicus*, *Polygonum punctatum*, *Sambucus canadensis*, and *Ulmus americana*.

This species is a deciduous shrub native to Korea and is a commonly planted ornamental shrub in Illinois. It grows to 1.5 m tall. Leaves are ovate to oval with dentate margins, each secondary leaf vein ends at a tooth, and both leaf surfaces are densely stellate pubescent. Young branches are also densely stellate-tomentose and the winter buds lack bud scales. The cymose inflorescence is densely stellate-tomentose. The whitish-pink flowers have a cylindrical corolla tube up to 1 cm long. The fruit is a bluish-black, one-seeded drupe (Rehder 1940, Bailey 1949).

Viburnum rhytidophyllum Hemsl. (Caprifoliaceae): Jackson Co., IL, is rare, only two shrubs were found in Thompson Woods (one near the Student Center, the other near the Agriculture Building) on the Southern Illinois University campus, Carbondale, NE/4 NW/4 Sec. 28 T9S R1W, 27 June 1999, M.A. Basinger 11968 (ILLS). Associated species were *Acer saccharum*, *Claytonia virginica* L., *Cornus florida* L., *Daucus carota* L., *Melilotus officinalis* (L.) Pallas, *Quercus velutina*, *Taxus cuspidata*, and *Toxicodendron radicans*.

This species is an evergreen shrub native to China and is a frequently planted ornamental in Illinois. It grows to 5 m tall. Leaves are opposite with entire margins and are dark green above and gray to yellow-brown and densely tomentose below. The upper leaf surface is rugose while the lower leaf surface is reticulate. Young branches are also covered with stellate-tomentose trichomes. Flowers are yellow-white in cymes that are formed during autumn and persist until flowering in spring. The fruit is a one-seeded drupe that is initially red but matures to black (Rehder 1940, Bailey 1949).

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