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## Ohio flora: Additions, noteworthy finds, and deletions

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### Abstract

Additions to the species list for the flora of Ohio are presented, based upon reports vouchered by herbarium specimens. Included are seven new genera and 49 new species and subspecies, representing 10 families. Of these, the following genera are first reports for the state: Calibrachoa, Callicarpa, Cyclosporum, Dittrichia, Hippophae, Photinia, and Sideritis. None of the discoveries included in this work represents a new family for Ohio. Also included are noteworthy finds and discussions of taxa deleted from the flora and from county records, along with our rationale for each change.

### Disciplines

Ecology and Evolutionary Biology | Horticulture

### Comments

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## OHIO FLORA: ADDITIONS, NOTEWORTHY FINDS, AND DELETIONS

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### ABSTRACT

Additions to the species list for the flora of Ohio are presented, based upon reports vouchered by herbarium specimens. Included are seven new genera and 49 new species and subspecies, representing 10 families. Of these, the following genera are first reports for the state: *Calibrachoa*, *Callicarpa*, *Cyclosporum*, *Dittrichia*, *Hippophae*, *Photinia*, and *Sideritis*. None of the discoveries included in this work represents a new family for Ohio. Also included are noteworthy finds and discussions of taxa deleted from the flora and from county records, along with our rationale for each change.

As is the case in many other Midwestern states, the Ohio flora is continuing to expand as new treatments are published and new discoveries are made. In the last comprehensive catalog of the flora of Ohio, Cooperrider et al. (2001) listed 2,998 taxa, including species, major infraspecific taxa, and interspecific hybrids. Of this total, 979 (23 percent) are not native to the state. Vincent et al. (2011) added 80 new taxa of native and introduced vascular plants to this ever-growing list, and now, following an additional eight years of survey work, as well as examination of numerous herbarium sheets of previously unrecorded or recently recognized species once lumped in synonymy, we present another 66 taxa to include in the Ohio flora.

While additions to the state's flora and other significant finds are important to record as vouchers and in peer-reviewed articles, so too is making known any necessary deletions that result from new information or application of higher inclusion standards. In many cases, this means verifying key characters from flowering and non-flowering material necessary for positive identification of specimens, or at the very least, from label information which includes details of such characteristics of the given plant not revealed on the voucher itself.

In this paper, we not only list new and noteworthy finds from Ohio (Section I), but also present a list of historical state and county records (Section II) deleted on the basis of our efforts to verify specimens used in support of existing published and online reports. The additions and deletions referenced in this work represent the latest effort to record and maintain an accurate, up-to-date catalog of the dynamic flora of Ohio, a moving target in no small part due to climate change, habitat creation, site alteration, and other anthropogenic forces (Vincent et al. 2011).

## Methods

Field surveys were conducted throughout Ohio with collections included made by numerous botanists and naturalists along with additional specimens found through our examination of holdings from 21 herbaria, including BGSU, BH, BHO, BUT, CINC, CLM, CM, DAWES, ISC, KE, MICH, MIL, MIN, MO, MU, NCU, NY, OS, SWF, UWO, and YUO (acronyms from Thiers [continuously updated]). State and county deletions found in Section II are based on determinations made by the authors and/or the Ohio Rare Plant Advisory Committee at biennial meetings since 2002.

All taxa included here are documented by herbarium specimens with material sufficient for positive identification. Because some specimens fell short of meeting this standard, many *Crataegus* and *Rubus* specimens examined in preparation for this article were omitted or are cited only in passing. To ensure that sufficient material was available for proper identification (especially for *Crataegus*, *Prunus*, and *Rubus*), multiple sheets were often collected to capture the range of variability within populations, as well as to document flowering and fruiting characteristics. For this reason, where vouchers include multiple sheets, the total number of duplicates corresponding to a given collection is indicated next to the corresponding herbarium code. Furthermore, it should be noted that information presented herein was taken directly from specimen labels created by many different botanists dating back to the late 19<sup>th</sup> century; for this reason, some inconsistencies occur. For each voucher cited, whenever possible, the authors have included the following label information: township, section, short description of site or habitat where plant was found, town or specific location where collected, date collected, collector's last name, and personal collection number, and, in parentheses, the herbarium where each specimen is deposited.

## Section I. Additions and noteworthy finds

1) ***AMBROSIA BIDENTATA*** Michx. × ***AMBROSIA ARTEMISIIFOLIA*** L. (Asteraceae) – hybrid ragweed. **Pike Co.:** Newton Twp., one mature, sparsely-fruited plant observed growing amongst both parent species on dry, disturbed/scraped, open, W-facing (hilltop) embankment, 5 Sep 2012, *Riley 2191* (OS).

This naturally occurring, unnamed hybrid has not previously been reported, though other hybrid ragweeds have been recognized (Strother 2006). Because of the rarity of this hybrid, we do not propose a binomial.

2) ***AMELANCHIER HUMILIS*** Wiegand (Rosaceae) – low serviceberry. **Lucas Co.:** Holland, 5 May 1934, *Thomas & Campbell s.n.* (OS); Swanton Twp., section 21, shrubs, about 1-1.5 m tall, sandy bank at edge of oak woods, Oak Openings Park, 25 Apr 1976, *Cusick s.n.* (KE); colonial shrub 1 m tall, Oak Openings Park, 3 Jun 1987, *Cusick 26494 & Denny* (OS); Spencer Twp., section 35, locally common species along trail on dry, sandy site along utility line clearing, 26 Aug 2006, *Riley 354* (OS); *ibid.*, 30 Jun 2012, *Riley 2193 & Boone* (OS), *2194* (MU), *2195* (CLM).

*Amelanchier humilis* is distinct due to its strongly rhizomatous growth habit forming scattered colonies (Campbell et al. 2014). This characteristic is most certainly evident in populations found within Ohio's Oak Openings Region where it occurs exclusively in dry, sandy soil. Campbell et al. (2014) reported the distribution of this wide-ranging species to include Manitoba, Ontario, Quebec, Saskatchewan, and 18 states including Ohio. In Michigan, *Amelanchier humilis* is treated as conspecific with *Amelanchier sanguinea* (Pursh) DC and *Amelanchier spicata* (Lam.) K. Koch, as it shares characters of both species complexes (Michigan Flora Online 2019).

3) **AMELANCHIER INTERIOR** E.L. Nielsen (Rosaceae) – inland serviceberry. **Erie Co.:** Kelleys Island, Long Point, Monagan Rd., north of Camp Patmos, 17 May 2013, *Cusick 37704 & Hayes* (MU). **Lucas Co.:** Spencer Twp., section 35, rare, one fruiting, arborescent shrub growing in dry, sandy soil along edge of mature oak woods, Holland, 26 Jun 2012, *Riley 2196-2197 & Boone* (OS), 2198 (CLM), 2199 (MU); *ibid*, 23 Jul 2016, *Riley 3384* (KE), 3385 (CLM).

There are three earlier specimens of this taxon from Erie County, two at OS and one at KE: the first collection was made at Cedar Point on 28 Jun 1915, *Grover s.n.* (OS), while the latter two were found at Kelleys Island on 21 Apr 1977, *Cusick s.n.* (KE), and on 12 May 1988, *Cusick 27356* (OS). At the time of its rediscovery in 2012, this species was considered extirpated from Ohio (ODNR 2018).

4) **ANAGALLIS MINIMA** (L.) E.H. Krause (Primulaceae) – chaffweed. **Gallia Co.:** Greenfield Twp., section 16, rare, small, local population growing under oak canopy, Gallia, 3 Jun 2017, *Riley 3712* (OS). **Pickaway Co.:** Wayne Twp., locally abundant in and around open, shallow, seasonally wet depressions on edge of fallow field, Circleville, 21 May 2012, *Riley 2204* (OS); Wayne Twp., 100s of plants in low areas along edge of fields and swales, Wildlife Production Area, 22 May 2012, *Gardner 7193 & Riley* (OS); Harrison Twp., section 1, small, local population growing on recently disturbed, sparsely vegetated, seasonally wet, open site, Teays Valley East Middle School, Ashville, 24 Jun 2012, *Riley 2205* (OS), 2206 (MU). **Pike Co.:** Jackson Twp., section 10, locally scattered population growing within small canopy opening on dry, upland (ridgetop) site, Beaver, 9 Jun 2018, *Riley 4056* (OS); Camp Creek Twp., extremely large population growing on semi-shaded site at edge of lawn and adjacent mesic woods, Lucasville, 22 Jun 2018, *Riley 4057* (OS), 4058 (KE); *ibid*, 15 Jun 2019, *Riley 4273* (CM). **Ross Co.:** NE ¼ Jefferson Twp., rare, two plants found growing around edge of small, wet, tire rut depression on N central side of recently clear-cut riparian/floodplain forest, 3 Jun 2012, *Riley 2207* (OS – photograph only). **Scioto Co.:** Madison Twp., section 25, small, local population growing in open, rather sparsely vegetated site at gravesite, Minford, 3 Jun 2017, *Riley 3713* (OS); S-SW Washington Twp., very local and relatively small population growing within sparsely vegetated, semi-shaded lawn, 24 Jun 2017, *Riley 3714* (OS); central Nile Twp., locally abundant, growing in open, sparsely vegetated, shallow (tire-rut) depressions along bridle trail, Shawnee State Forest, 24 Jun 2017, *Riley 3715* (OS), 3716 (KE); S-SW Union Twp., very local population growing within dry, somewhat open, upland (ridgetop) mature oak forest community, Shawnee State Forest, 9 Jun 2018, *Riley 4059* (OS); extreme western Morgan Twp., very small and local but healthy and robust population growing on sparsely vegetated, shaded – mostly shaded site, 22 Jun 2018, *Riley 4060* (OS).

Historical collections of this species, housed at OS, were made in Jackson and Ross counties by Floyd Bartley in 1935. At the time this species was rediscovered in Pickaway County in 2012 by Riley, it was listed as presumed extirpated in Ohio, since it had not been reported for 77 years (ODNR 2018). Collections from Gallia, Pike, Ross, and Scioto counties represent new county records for this elfin annual. Riley also observed this species in Jackson County in 2018, though no vouchers were made.

5) **ARISTIDA BASIRAMEA** Engelm. ex Vasey (Poaceae) – forked three-awn. **Lucas Co.:** Swanton Twp., sections 28 & 29, sloped dune barren, about 10-15% coverage, area periodically burned, Oak Openings Preserve, 20 Sep 1996, *Walters 1996:198 & Jacksy* (CLM); Swanton Twp., dry sand

savanna, Badger Barrens, Oak Openings Preserve MetroPark, 24 Aug 2012, *Gehring & Klavins s.n.* (MICH).

This species occurs on dry, sandy ground in 22 counties throughout Michigan's lower peninsula and in Delta and Schoolcraft Counties in the state's upper peninsula (Michigan Flora Online 2019). A duplicate of *Walters 1996:198* is housed in the collection of Metroparks Toledo.

6) ***CALIBRACHOA PARVIFLORA*** (Juss.) D'Arcy (Solanaceae) – seaside petunia. **Greene Co.:** Ramp off Interstate 675 southbound to Dayton Yellow Springs Road, gravelly edge of road, 30 Jun 2018, *Boone s.n.* (MU). **Hamilton Co.:** Mud flat of Great Miami River, Shawnee Lookout, 20 Oct 2015, *Boone s.n.* (MU); Miami Township Community Park, sandy, rocky and muddy flats of Great Miami River, 28 May 2018, *Boone s.n.* (CINC, MU).

*Calibrachoa parviflora* is native to the southwestern United States, Mexico, and South America (Jepson Flora Project 2019). USDA NRCS (2019) reported collections from 15 states, ranging from the Pacific coast to the Atlantic seaboard, with most occurrences located in the southern half of the continental United States. The BONAP website (Kartesz 2015) lists the species for 18 states, where it is listed as native to Arizona, California, and Utah and as introduced in fifteen other states.

7) ***CALLICARPA DICHOTOMA*** (Lour.) K. Koch (Lamiaceae) – purple beautyberry. **Licking Co.:** Growing in full shade, east side, SW of Boy Scout Pond area, The Dawes Arboretum, 7 Sep 2017, *Dixon s.n.* (DAWES). **Wayne Co.:** Escaped from cultivation, 1917, *Anonymous s.n.* (OS).

*Callicarpa dichotoma* is an ornamental shrub up occasionally planted for its attractive pink or white flowers, as well as for its equally attractive fruits (drupes) which at maturity are purple or, in the case of f. *albifructa* T. Yamaz., white. The escaped Licking County collection cited here is f. *albifructa*. Beautyberry is native to China and Korea (Rehder 1947), and was first introduced into cultivation in 1857. Kartesz (2015) reported escaped collections from eight states, including Alabama, Arkansas, Delaware, Missouri, North Carolina, Pennsylvania, South Carolina, and Virginia, while USDA NRCS (2019) reported collections from only six states, including Kentucky and Tennessee.

8) ***CAREX ALBICANS*** Willd. ex Spreng. var. ***ALBICANS*** × ***CAREX UMBELLATA*** Schkuhr ex Willd. (Cyperaceae) – hybrid sedge. **Cuyahoga Co.:** Upland immediately west of Rocky River, Rocky River Reservation, North Olmsted, 14 May 1999, *Wilder & McCombs 10743* (MICH).

The only specimen of this hybrid known from Ohio was determined by Dr. A.A. Reznicek in 2007. On this voucher, Dr. Reznicek notes that the plant is sterile and that the anthers are not exerted, and that the basal spikes, small perigynia, and thin culms are further evidence of this interspecific hybrid.

9) ***CAREX FLACCA*** Schreb. (Cyperaceae) – glaucous creeping sedge. **Portage Co.:** Charlestown Twp., rather large, local, colonial population dominant within open, moist, shallow depression surrounded by successional woods, Camp Ravenna Joint Military Training Center, Ravenna, 27 Feb 2018, *Riley 4040* (OS – three sheets); *ibid*, 5 Jun 2018, *Riley 4074* (OS), *4075* (KE – two sheets), *4076* (MICH); *ibid*, 14 Jun 2018, *Riley 4077* (OS), *4078* (KE), *4079* (CLM), *4080* (CM).

The origin of this population is a bit of a mystery given that *Carex flacca* typically occurs in calcareous soils throughout Europe (Ball & Reznicek 2002), the likes of which do not occur at this site. Ball & Reznicek (2002) reported this species as being introduced in the lower Great Lakes region, including Ontario, Quebec, Michigan, and New York. In Ohio, this rather attractive species was discovered at a location somewhat removed from the nearest homesite, which predates 1940 when the US Government purchased the land from private citizens to establish the Ravenna Army Ammunition Plant (renamed Camp James A. Garfield Joint Military Training Center in October 2018). Until recently, this species was not widely available in the nursery industry or horticultural trade. Due to the size of this population, it is likely that it has been established at this site for a considerable time.

10) **CAREX FORMOSA** Dewey (Cyperaceae) – handsome sedge. **Portage Co.:** Charlestown Twp., rare, in meadow at edge of young woods, Camp Ravenna Joint Military Training Center, Ravenna, 2 Jun 2010, *Gardner 6920* (OS, MICH).

*Carex formosa* was first collected in Ohio in Wood County in 1958 [*Easterly 531* (OS)]. Prior to its 2010 rediscovery, this sedge was presumed extirpated in Ohio, since it had not been observed in the state for more than 20 years, but is currently listed as State Endangered (ODNR 2018).

11) **CAREX HAYDENII** Dewey (Cyperaceae) – Hayden’s sedge. **Cuyahoga Co.:** 10-15 clumps in gently sloping, wet meadow; mistakenly introduced as *Carex stricta* during wetland restoration activities in 2009 or 2010, South Chagrin Reservation, 21 May 2018, *Reinier 1199* (Herbarium of Cleveland Metroparks); *ibid*, 1 Jun 2018, *Reinier 1211* (KE).

The Cuyahoga County collections of this species, verified by Dr. A.A. Reznicek, were gathered from a naturalized planting at a wetland restoration site rather than from a naturally occurring population. All other Ohio records cited in Braun (1967) and Kartesz (2015) were found to be misidentified. See species entry in Section II for details concerning these recently annotated specimens.

12) **CAREX LUPULINA** Muhl. ex Willd. × **CAREX LURIDA** Wahlenb. (Cyperaceae) – hybrid sedge. **Portage Co.:** NW ¼ Paris Twp., four local plants observed growing within shaded swamp woods, Camp Ravenna Joint Military Training Center, 8 Jul 2016, *Riley 3414* (OS), *3415* (MICH); *ibid*, 13 Jul 2016, *Riley 3416* (KE); NE ¼ Paris Twp., one or two robust plants observed growing next to large *Salix sericea* shrub on E edge of open wetland, Camp Ravenna Joint Military Training Center, 23 Aug 2016, *Riley 3417* (OS); *ibid*, 7 Aug 2017, *Riley 3782* (CLM), *3783* (CM). **Trumbull Co.:** Braceville Twp., south shore of beaver pond, robust form, 15 Jul 1945, *Rood s.n.* (YUO).

ODNR Chief Botanist Richard L. Gardner (pers. comm.) informed us that this hybrid was collected Ashtabula County by Ms. Kashmiri Asnani. Her specimen will be housed at OS.

13) **CAREX OKLAHOMENSIS** Mack. (Cyperaceae) – Oklahoma sedge. **Cuyahoga Co.:** Hundreds of fruiting culms in routinely mowed powerline corridor, Middleburg Heights, 16 Jun 2014, *Reinier 305* (CLM); *ibid*, 23 Jun 2014, *Reinier 313* (OS).

*Carex oklahomensis* is native to the southern and southeastern states. According to Kartesz (2015), the closest populations to Ohio are within the Mississippi Embayment physiographic region of

western Kentucky, which are considered native (Jones 2005), and two counties in southwestern Indiana (Daviss and Posey), which are considered to be introduced. Jones (2005) mentioned “wet woodlands and meadows” as habitats for this species.

14) **CAREX SYLVATICA** Huds. (Cyperaceae) – European woodland sedge. **Portage Co.:** Charlestown Twp., locally common species growing in young, mesic woods and in open grass/roadside strip, Camp Ravenna Joint Military Training Center, 21 May 2015, *Riley 3118* (OS), *3119* (KE); *ibid*, 26 May 2015, *Riley 3120* (OS), *3121* (MICH); *ibid*, 2 Jun 2015, *Riley 3122* (OS), *3123* (CLM); *ibid*, 9 Jun 2015, *Riley 3124* (CM), *3125* (MU); *ibid*, 1 Jun 2016, *Riley 3433* (OS), *3434* (CM), *3435* (MICH); *ibid*, 6 Jun 2016, *Riley 3436* (OS), *3437* (MU).

Although this Old World sedge has been reported from eastern North America (Ball & Reznicek 2002), it was not previously known from Ohio. The origin of this population, located not far from an old homesite predating 1940, is unknown, since this species has not been widely used in horticulture until recently. It is just as conceivable that this population was an accidental introduction as it is to believe that it was deliberately planted here 80 or more years ago.

15) **CAREX VIRIDISTELLATA** Derieg, Reznicek, & Bruederle (Cyperaceae) – greenstar sedge. Confirmed collections of this recently described species from **Adams, Greene, Seneca, and Wyandot Counties** are cited in Derieg et al. (2013). Additional collection: **Champaign Co.:** Concord Twp., section 11, infrequent in narrow cinquefoil-sedge fen, 11 Jun 2013, *Gardner 7236*, *Gibson, & Schneider* (OS).

16) **CARYA GLABRA** (Mill.) Sweet var. **MEGACARPA** (Sarg.) Sarg. (Juglandaceae) – pignut hickory. **Portage Co.:** SE ¼ Windham Twp., one mature, double-stemmed tree growing at S-SW corner of mature, dry, upland white oak woods growing in shallow soil over sandstone bedrock, Camp Ravenna Joint Military Training Center, 29 Sep 2015, *Riley 3130* (OS), *3131* (KE).

This uncommon variety is recognized by its larger leaflets and fruit 2.5-5 cm long with husks 3.5 mm thick. The range of this variety extends from New York to southern Illinois, south to southern Florida, Alabama, and Louisiana (Fernald 1950).

17) **CARYA OVATA** (Mill.) K. Koch var. **NUTTALLII** Sarg. (Juglandaceae) – small-fruited shagbark hickory. **Portage Co.:** NE ¼ Brimfield Twp., uncommon, one declining tree from original woodland growing on dry site, Lions Community Park, Brimfield, 27 Sep 2015, *Riley 3134* (OS), *3135* (KE), *3136* (MU).

Fernald (1950) distinguished this variety by its small, subglobose nut that is strongly compressed laterally and only 1.5-2 cm long. Its known distribution spans from Massachusetts and Pennsylvania west to Missouri.

18) **CASTANEA MOLLISSIMA** Blume (Fagaceae) – Chinese chestnut. **Franklin Co.:** Madison Twp., section 35, few locally escaped seedlings and saplings originating from nearby planted parent trees, Columbus, 31 Aug 2013, *Riley 2643* (OS), *2644* (BHO), *2645* (MU), *2646* (CLM). **Portage Co.:** extreme central Charlestown Twp., uncommon, one locally escaped sapling growing on W edge of mesic woods, Camp Ravenna Joint Military Training Center, 6 Sep 2017, *Riley 3787* (OS), *3788* (KE).



This species has been widely planted throughout the United States for the last century. Chinese chestnuts have long been produced commercially in Carroll County (Route 9 Cooperative 2019). Escapes of this species are typically local and limited to a few individuals at most, such as the case for both of these populations.

19) **CRATAEGUS COCCINIOIDES** Scheele (Rosaceae) – Kansas hawthorn. **Mahoning Co.:** NW ¼ Milton Twp., several flowering trees growing on dry slope on N side of Lake Milton tributary at public fishing access site, Lake Milton Public Hunting and Fishing Area, 19 Jul 2014, *Riley 2931* (OS); *ibid*, 5 May 2016, *Riley 3467* (OS), 3468 (KE), 3469 (UWO); *ibid*, 28 Apr 2017, *Riley 3801* (CM – two sheets). **Portage Co.:** NE ¼ Edinburg Twp., locally common, small trees with platy bark scattered along fencerow and within low, well-drained successional woods on open, mesic site, West Branch Wildlife Area, 12 May 2015, *Riley 3150* (UWO); *ibid*, 8 May 2016, *Riley 3470* (OS), 3471 (KE), 3472 (UWO); NE ¼ Edinburg Twp., mature trees growing along fencerow on N-NW side of grassy trail and on N side of pond, West Branch Wildlife Area, 8 May 2016, *Riley 3473* (OS), 3474 (UWO); NE ¼ Paris Twp., uncommon, two trees growing on W edge of mesic woods, Camp Ravenna Joint Military Training Center, 12 May 2016, *Riley 3475* (OS), 3476 (KE), 3477 (UWO); NE ¼ Paris Twp., one of five mature trees counted and several saplings observed growing on rich, loam soil on edge of young woods, Camp Ravenna Joint Military Training Center, 26 Apr 2017, *Riley 3802* (OS), 3803 (KE), 3804 (CLM). **Summit Co.:** single tree growing along north wooded fence line, Stow Armory, Stow, 26 Apr 2017, *Riley 3805* (OS), 3806 (KE). **Trumbull Co.:** SW ¼ Newton Twp., two small trees observed growing on S edge of rich, mesic woods, Pricetown UM Church, Newton Falls, 28 Apr 2017, *Riley 3807* (OS); SW ¼ Newton Twp., one healthy, medium-size, double-stemmed tree with others in the area growing on S side of ditch and on S edge of narrow woodlot, Newton Falls, 28 Apr 2017, *Riley 3808* (OS), 3809 (KE).

Based on Lance (2014), a few specimens are var. *dilatata* (Sarg.) Eggleston, in which the anthers are pink-light purple instead of cream or off-white as in the typical variety. Phipps (2014) treated this variant as a synonym of the species, while Lance (2014) recognized it as distinct. Lance stated that the typical variety does not occur in Ohio, while var. *dilatata* occurs throughout the southeast quarter of the state. Of the specimens cited above (most of which include flowers), var. *dilatata* has only been collected in the northeast quarter, at West Branch Wildlife Area in Portage County.

20) **CRATAEGUS COMPACTA** Sargent (Rosaceae) – Thames hawthorn, clustered hawthorn. **Portage Co.:** Edinburg Twp., rare, one of two mature, fruiting trees located on E side of gravel access lane leading south from parking area to ag field, West Branch State Wildlife Area, 13 Jun 2017, *Riley 3810* (OS), 3811 (KE), 3812 (UWO); *ibid*, 17 Jun 2017, *Riley 3813* (UWO); *ibid*, 8 Jul 2017, *Riley 3814* (UWO – two sheets); *ibid*, 20 May 2018, *Riley 4104* (OS – two sheets), 4105 (KE); *ibid*, 24 May 2018, *Riley 4106* (OS – two sheets), 4107 (KE); *ibid*, 4 Aug 2019, *Riley 4274* (CLM), 4275 (CM), 4276 (MICH), 4277 (MU); Edinburg Twp., rare, one double-stem tree with non-glaucous pomes growing on S edge of mesic woods, West Branch State Wildlife Area, 4 Aug 2019, *Riley 4278* (OS), 4279 (KE). **Trumbull Co.:** Vernon Twp., one healthy tree with non-glaucous pomes growing on edge of mesic to moist-mesic successional woods (thicket) at W end of open meadow, Shenango State Wildlife Area, 31 Aug 2019, *Riley 4280* (OS – two sheets), 4281 (KE).

According to Lance (2014), *Crataegus compacta* “is today known to occur sporadically in the U.S. from Michigan to Pennsylvania with rare appearances in Ohio and the Virginias.” *Crataegus compacta* was described in 1907 from London, Ontario, approximately 210 km (130 miles) north of the Portage County populations and approximately 188 km (117 miles) north of the Trumbull County population cited above, all of which occur at the southern edge of its range.

21) **CRATAEGUS PENNSYLVANICA** Ashe (Rosaceae) – Pennsylvania hawthorn. **Portage Co.:** Paris Twp., rare, locally scattered, mature, heavily fruiting trees growing near and along south edge of rich, mesic woods & red pine plantation, Camp Ravenna Joint Military Training Center, 11 May 2015, *Riley 3156* (OS), *3157* (CM), *3158* (UWO); *ibid*, 12 May 2015, *Riley 3162* (KE), *3163* (CLM); *ibid*, 3 Aug 2015, *Riley 3168* (OS), *3169* (KE), *3170* (CM), *3171* (UWO); *ibid*, 20 Aug 2015, *Riley 3172* (OS), *3173* (KE), *3174* (UWO), *3175* (CM); *ibid*, 3 May 2016, *Riley 3482* (OS), *3483* (KE), *3484* (CLM), *3485* (CM); *ibid*, 6 May 2016, *Riley 3486* (OS), *3487* (KE), *3488* (MU), *3489* (MICH); *ibid*, 24 Apr 2017, *Riley 3830* (OS), *3831* (KE); Paris Twp., rare, two mature, healthy, flowering individuals in narrow strip between State Route 5 & RR, Camp Ravenna Joint Military Training Center, 11 May 2018, *Riley 4113* (OS), *4114* (KE), *4115* (CLM), *4116* (OS), *4117* (KE), *4118* (CM).

As explained in our discussion of county-record deletions (Section II), it is now known that this uncommon hawthorn does not naturally extend further west than northeastern Ohio. Due to its extreme rarity, *Crataegus pennsylvanica* was added to the Ohio Rare Plant List as a State Endangered species in 2018 (ODNR 2018).

22) **CRATAEGUS ×PERSIMILIS** Sargent (Rosaceae) – plumleaf hawthorn. **Crawford Co.:** Auburn Twp., mesophytic woods adjacent to the Celeryville Reservoir, 10 Jul 1965, *Ferencak & Jarzen s.n.* (KE). **Portage Co.:** NW ¼ Charlestown Twp., one young tree near S edge of early successional woods, Camp Ravenna Joint Military Training Center, 11 Aug 2015, *Riley 3141* (KE), *3142* (UWO); *ibid*, 22 May 2017, *Riley 3815* (OS), *3816* (KE), *3817* (UWO). **Trumbull Co.:** Braceville Twp., shore of beaver pond, 10 Jun 1943, *Rood 1914* (KE).

Phipps (2014) stated that *Crataegus ×persimilis* is plausibly an intersectional hybrid between *Crataegus crus-galli* L. and *Crataegus succulenta* (Loudon) Rehder “in the broad sense.” Morphologically, this hybrid more closely resembles *Crataegus crus-galli*. The stamens in the Portage County individual cited above averaged ten per flower with dark pink to purple anthers.

23) **CRATAEGUS SUBORBICULATA** Sargent (Rosaceae) – Caughuawaga hawthorn. **Portage Co.:** Edinburg Twp., single tree growing on upland mesic site on edge of young, successional woods, West Branch Wildlife Area, 1 Sep 2016, *Riley 3493* (UWO); *ibid*, 9 May 2017, *Riley 3844* (OS), *3845* (KE), *3846* (UWO); *ibid*, 13 Jun 2017, *Riley 3847* (OS), *3848* (KE), *3849* (UWO – two sheets); *ibid*, 17 Jun 2017, *Riley 3850* (UWO); *ibid*, 4 Aug 2019, *Riley 4282* (CLM), *4283* (CM), *4284* (MICH).

This shrub to small tree was reported from Ohio by Braun (1961) and Kartesz (2015) based on incorrectly identified and unrelated collections from five scattered counties including one from a somewhat ambiguous location in Ottawa County with no date or collector information given. See the entry in Section II for more details. Given its similarity to the common and widespread *Crataegus pruinosa* (Wendl.) K. Koch and its four recognized varieties (Phipps 2014), it is extremely important

to collect mature, fruiting specimens while noting diameter of mature pomes and number of stamens. Mature, non-deformed pomes examined later in the growing season will reveal whether or not they are pruinose – a relatively easy to discern distinction between *Crataegus pruinosa* and *Crataegus suborbiculata*. If collecting flowering material, the color of fresh anthers should also be included on the label. In the case of the Portage County, Ohio, population discovered in 2016, this species occurs in association with other members of series *Pruinosae*, including *Crataegus pruinosa* and *Crataegus macrosperma* Ashe.

24) **CYCLOSPERMUM LEPTOPHYLLUM** (Pers.) Sprague ex Britton & P. Wilson (Apiaceae) – marsh parsley. **Franklin Co.:** Ornamental grass planting array, SW corner of Recreation and Physical Activity Center, east side of Lincoln Tower Park, 150 m N of John Herrick Drive, Ohio State University, Columbus, 26 Jun 2014, *Klips s.n.* (OS).

*CyclospERMUM leptophyllum* is a weedy annual native to South America, that has spread to both subtropical and temperate areas around the world (Ronse et al. 2010). USDA NRCS (2019) reported occurrences from every state in the continental US south of the 37<sup>th</sup> parallel as well as every state bordering the Atlantic seaboard from New York south to Florida. Prior to the Franklin County, Ohio discovery, the closest and only Midwestern occurrences of this species were from Champaign County, Illinois, where it was found growing as a weed within an ornamental planting and within turfgrass along a nearby roadside (Illinois Wildflowers 2019). Neither a one-time waif nor a long-term naturalizer, the species was collected once in an ornamental grass planting where it grew in association with *Senecio vulgaris* and *Sonchus* sp. According to Dr. Robert A. Klips (pers. comm.), this population persisted for a few years until the ornamental grass planting was replaced with sod.

25) **DIOSPYROS VIRGINIANA** L. var. **PUBESCENS** Nutt. (Ebenaceae) – common persimmon. **Mahoning Co.:** Jackson Twp., weed along RR tracks, NW of Jackson Center, 19 Jul 1960, *Cooperrider 7054* (KE). **Pickaway Co.:** Walnut Twp., section 30, three non-fruiting saplings, locally escaped from planted trees in nearby private orchard, Stages Pond State Nature Preserve, Ashville, 27 Aug 2017, *Riley 3870* (OS). **Trumbull Co.:** Braceville Twp., adventive from cultivated trees, 20 Jun 1954, *Rood 2821* (KE).

Variety *pubescens*, with villous or densely tomentose branchlets and leaves abaxially hairy, occurs just south of Ohio. The natural range of this variety spans from Florida west to Arkansas, north to Virginia, southern Illinois, and southern Iowa (Fernald 1950). All Ohio collections cited here are local escapes from cultivated trees selected for their fruit size and yield.

26) **DISTICHLIS SPICATA** (L.) Greene (Poaceae) – saltgrass. **Portage Co.:** N ½ Ravenna Twp., large, local, rhizomatous population growing in black, saline soil along N edge of SR 14, Ravenna, 27 Jun 2017, *Riley 3871* (OS), 3872 (KE), 3873 (CLM), 3874 (CM).

Vincent and Cusick (1998) cited a single collection from Lake County, collected 20 Sep 1991 by J.K. Bissell. Given the fact that the only other collection from Ohio occurred 26 years after the first, it would seem that this halophyte is not rapidly spreading despite the abundance of suitable habitat along salted highways and other disturbed areas.

27) ***DITTRICHIA GRAVEOLENS*** (L.) Greuter (Asteraceae) – stinkwort. **Portage Co.:** SE ¼ SE ¼ Streetsboro Corporation Limit, locally abundant, weedy population consisting of thousands of individuals growing in full sun on dry, gravelly, saline soil along NE edge/berm of SR 14, Streetsboro, 16 Sep 2018, *Riley 4139* (OS), *4140* (KE), *4141* (CLM), *4142* (CM); *ibid*, 18 Sep 2018, *Riley 4143* (OS), *4144* (KE), *4145* (BHO), *4146* (MU), *4147* (MICH).

Preston (2006) reported this species as being introduced in the US (California, Connecticut, New Jersey, New York), from southwestern Italy, India, South Africa, and Australia, where it occurs in disturbed fields, roadways, and estuarine borders. The highway along which the Ohio population was found was closed from 3 Oct 2016 to 23 Mar 2017 for bridge repair. This now very abundant species had not been observed or collected at this site before the closure, though it was later seen by Riley in similar disturbed roadside habitats elsewhere in Portage County in September 2019. Given this sudden and prolific occurrence, it comes as no surprise that Preston (2006) made reference to late 1940s collections from New York that described it as “abundant in areas where road construction was underway.” Due in part to contaminated construction equipment, additional populations are likely to become established in similar open and disturbed areas throughout Ohio and beyond, as has already been the case in at least four other states, including California where it is spreading most rapidly and displaying the potential to become a noxious weed (Preston 2006).

28) ***ELEOCHARIS MACROSTACHYA*** Britton (Cyperaceae) – pale spikerush. **Fayette Co.:** Union Twp., extremely abundant in open wetland along either side of boardwalk trail, Shaw Wetland, Washington Court House, 30 May 2012, *Riley 2359* (OS); Union Twp., extremely abundant in dense, clonal colonies within marshy shallows around perimeter of Crooked Creek detention pond, Washington Court House, 15 Jun 2013, *Riley 2706* (OS), *2707* (MU), *2708* (MICH), *2709* (BHO), *2710* (CLM). **Pickaway Co.:** Perry Twp., locally common, moist mud of man-made marsh, Deer Creek Wildlife Area, 28 Sep 2007, *Gardner 5670 & McCormac* (MICH); Perry Twp., small, local population growing in seasonally wet depression beside gravel access at SW corner of field, Deer Creek Wildlife Area, 6 Jun 2012, *Riley 2360* (OS), *2361* (MICH); Perry Twp., locally scattered, dense, clonal populations occurring in seasonally wet depressions throughout a fallow field, Deer Creek Wildlife Area, 23 Jun 2013, *Riley 2711* (OS), *2712* (BHO), *2713* (MU), *2714* (CLM), *2715* (MICH).

This species was first discovered in Ohio in Sep 2007 by Gardner and McCormac at Deer Creek Wildlife Area in Pickaway County. A specimen from this site/collection was identified as *Eleocharis macrostachya* by Dr. A.A. Reznicek after co-author Riley had found it nearby in neighboring Fayette County in May 2012. In 2014, this species was determined to be native by the Ohio Rare Plants Advisory Committee. The basis for this determination was that these multiple occurrences were located within an area of the state well-known for many extant and extirpated western disjuncts and prairie wetland endemics.

29) ***ERAGROSTIS CURVULA*** (Schrad.) Knees (Poaceae) – weeping lovegrass. **Jackson Co.:** Jefferson Twp., section 14, local, 7 individuals in full sun on dry, sandy soil on E side of narrow, grassy trail, Jackson Lake State Park, Oak Hill, 8 Jun 2018, *Riley 4149* (OS). **Lawrence Co.:** Elizabeth Twp., section 31, locally common in powerline right-of-way, dry, sandy soils, Wayne National Forest, 8 Jun 2009, *Gardner 6252* (OS); Decatur Twp., section 26, ca. 30 locally scattered individuals/clumps on dry, sandy SW-facing slope along Tarkiln Bridal Trail, Dean State Forest, 1 Sep 2014, *Riley 2955-2956*

(OS); *ibid*, 24 Jun 2017, *Riley* 3876 (OS), 3877 (BHO), 3878 (KE). **Portage Co.:** woodlot, men's dorm, Kent State University, 28 Jun 1955, *P.A. Bricker s.n.* (KE).

The provenance of the Portage County specimen is uncertain; it is unclear whether it was from cultivation or from a naturalized or escaped population.

30) ***EUONYMUS BUNGEANUS*** Maxim. (Celastraceae) – winterberry euonymus. **Licking Co.:** Alternative farm, NW corner of white pine plantation, The Dawes Arboretum, 6 Jun 2015, *Brandenburg & Messinger s.n.* (DAWES).

Like other species of its genus, *Euonymus bungeanus* has a propensity to spread, primarily via birds (Li et al. 2006). Native to northern China and hardy to zone 4 (Univ. of Connecticut 2018), this species is likely to spread in Ohio, first in and around areas where planted ornamentally and, in time, well beyond.

31) ***EUPATORIUM GODFREYANUM*** Cronq. (Asteraceae) – Godfrey's thoroughwort. **Hocking Co.:** Laurel Twp., on ledge of steep, rocky cliff in oak-pine forest, west cliff of Hood Hollow, Crane Hollow Preserve, 12 Aug 2011, *Moosbrugger 11-309* (BHO). **Jackson Co.:** Liberty Twp., old field near Oakland School, 3 Aug 1958, *Bartley 2402* (NY). **Lawrence Co.:** Washington Twp., dry, open, S-SW facing roadside slope within narrow powerline clearing on upland/hilltop site, 10 Aug 2013, *Riley* 2720 (OS), 2721 (BHO); *ibid*, 25 Aug 2017, *Riley* 3879 (OS), 3880 (KE). **Pike Co.:** Jackson Twp., growing in full sun on dry, upland, W-facing sandstone outcrop, 26 Aug 2017, *Riley* 3881 (OS). **Scioto Co.:** Nile Twp., 70-80 flowering plants growing in patch in open powerline cut in dry, rocky, acidic soil over sandstone on SW facing slope, Shawnee State Forest, 10 Aug 2018, *Gibson 235* (OS).

Cronquist (1985) reported a collection from Jackson County, which is cited above. Perhaps best described in the casual sense as a “hairy *Eupatorium sessilifolium*,” this species was long presumed to be a stable hybrid between *Eupatorium rotundifolium* L. and *Eupatorium sessilifolium* L. until elevated to the rank of species by Cronquist (1985). Its ancestral hybridity was ultimately later confirmed by Siripun & Schilling (2006a). Where it occurs throughout its range, populations are persistent and occur with or without both putative parents nearby. For comparative purposes, there is a voucher of a true, F<sub>1</sub> *Eupatorium rotundifolium* × *Eupatorium sessilifolium* hybrid at OS (*Riley* 2379), which is also cited herein as a new taxon in the Ohio flora. It should be noted that this F<sub>1</sub> cross morphologically resembles *Eupatorium godfreyanum*, which evolved from as a cross between these same two species (Siripun & Schilling 2006a).

32) ***EUPATORIUM PILOSUM*** Walt. (Asteraceae) – rough boneset. **Athens Co.:** York Twp., few local populations growing in wet, acidic, *Sphagnum* seeps and depressions on open mine-spoil site within large powerline clearing/right-of-way, Wayne National Forest, 17 Aug 2013, *Riley* 2722 (OS), 2723 (BHO), 2724 (CLM); *ibid*, 18 Aug 2013, *Riley* 2725 (MU); *ibid*, 22 Aug 2015, *Riley* 3216 (KE), 3217 (CM). **Gallia Co.:** Cheshire Twp., palustrine emergent depression, low pH acid impaired (strip mine) sandy clay substrate, 12 Jul 2010, *Walters 12842 & Kusnier* (CLM, MICH). **Hocking Co.:** Green Twp., small, locally scattered individuals occurring within acidic, marshy area along small drainage on edge of mature forest, Dorr Run APV Area, Wayne National Forest, 10 Aug 2014, *Riley* 2962 (OS). **Lawrence Co.:** Hamilton Twp., section 7, small, local population of mostly sterile individuals

occurring on poorly drained, acidic, open, 0.50-acre mine-spoil site, Hanging Rock Recreation Area, Wayne National Forest, 26 Jul 2014, *Riley 2963* (OS); *ibid*, 1 Sep 2014, *Riley 2964* (OS); Hamilton Twp., section 1, uncommon, small population consisting of perhaps six to eight locally scattered individuals growing on dry to moist soil at/near SE end of successional opening within abandoned strip-mined area, Hanging Rock Recreation Area, Wayne National Forest, 1 Sep 2018, *Riley 4151* (OS).

The Ohio Rare Plants Advisory Committee determined in 2016 that it would be most appropriate to treat this species as native to the region, but adventive in Ohio. Although this species is believed to have established at each of the four known sites naturally, these sites are man-made spoil areas from un-reclaimed mining operations and coal-ash deposits. As such, the presence of this species in Ohio is unlikely to have pre-dated European settlement. Further substantiating this claim is the known distribution of *Eupatorium pilosum*, which does not include Ohio but does include the bordering states of Kentucky, Pennsylvania, and West Virginia (Siripun & Schilling 2006b).

The following three entries are all unnamed interspecific *Eupatorium* hybrids, which, in each case, were found growing in association with their respective putative parents.

33) ***EUPATORIUM PERFOLIATUM* L. × *EUPATORIUM ALTISSIMUM* L.** (Asteraceae) – hybrid thoroughwort. **Muskingum Co.:** Newton Twp., section 16, small, local population of several hybrid individuals growing in association with both parent species on E side of gravel road/access lane within abandoned strip-mine area, Avondale Wildlife Area, 31 Aug 2012, *Riley 2376* (OS).

34) ***EUPATORIUM SEROTINUM* Michx. × *EUPATORIUM SESSILIFOLIUM*** (Asteraceae) – hybrid thoroughwort. **Ross Co.:** Harrison Twp., section 23, 5-10 plants, maybe more, near horse trail along mid-slope, steep, brushy, cut over open oak woods, Boblett Hollow, Tar Hollow State Forest, 4 Aug 2012, *Minney s.n.* (OS). **Vinton Co.:** Vinton Twp., section 35, small, local population growing in association with both parental species in mature, dry, upland oak woods, Vinton Furnace Experimental Forest, 5 Aug 2012, *Riley 2377-2378* (OS).

35) ***EUPATORIUM SESSILIFOLIUM* × *EUPATORIUM ROTUNDIFOLIUM*** (Asteraceae) – hybrid thoroughwort. **Jackson Co.:** Liberty Twp., section 25, two local individuals growing among both parental species on open, ridgetop site within a recently clear-cut area, 5 Sep 2012, *Riley 2379* (OS).

36) ***EUPATORIUM* × *TRUNCATUM* Muhl. ex Willd. (*Eupatorium serotinum* × *Eupatorium perfoliatum*)** (Asteraceae) – truncate-leaved thoroughwort. **Gallia Co.:** Raccoon Twp., section 11, two individuals growing in association with both parental species in small opening on NW edge of young, low, wet woods, Tycoon Lake State Wildlife Area, 25 Aug 2017, *Riley 3886* (OS); Walnut Twp., section 19, one individual growing in association with both parent species within open, marshy, acidic wetland at entrance to Flagsprings Cemetery, 1 Sep 2018, *Riley 4152* (OS). **Hocking Co.:** Good Hope Twp., section 26, two plants growing at top of narrow, 25'-wide powerline clearing on NE-facing ridgetop, Rockbridge, 17 Sep 2011, *Riley 1997* (OS). **Jackson Co.:** Liberty Twp., section 25, one vigorous individual growing in presence of parental species within open, recent clear-cut, ridgetop site, 23 Aug 2014, *Riley 2968* (OS), 2969 (BHO). **Muskingum Co.:** Newton Twp., section 16, locally scattered hybrids growing along E & W sides of dirt road/access lane within abandoned strip-mine area,

Avondale Wildlife Area, 31 Aug 2012, *Riley 2374* (OS). **Portage Co.:** Windham Twp., two individuals growing in dry, open, weedy, gravelly area near concrete pad with both parental species nearby, Camp Ravenna Joint Military Training Center, 17 Sep 2013, *Riley 2729* (OS); *ibid*, 23 Sep 2013, *Riley 2730* (CLM). **Ross Co.:** Jefferson Twp., section 12, one robust individual growing with both parental species located near NE corner of recently clear-cut floodplain site, 5 Aug 2012, *Riley 2375*, *Boone, Minney, & Bens* (OS). **Trumbull Co.:** Braceville Twp., locally scattered, growing in association with both parental species within 150-foot wide clearing surrounded by mature, wet-somewhat poorly drained pin oak flatwoods, Camp Ravenna Joint Military Training Center, 2 Sep 2015, *Riley 3220* (OS).

This interspecific hybrid has been collected eight times in seven widely scattered Ohio counties since its discovery in 2011. Kartesz (2015) mapped its distribution in 18 states throughout the eastern US. While *Eupatorium perfoliatum* is extremely common and can most likely be found in all 88 Ohio counties, the other parent, *Eupatorium serotinum*, is less common but may become more widespread throughout the state in moist and dry open areas, where it is commonly found along railroads, thickets, disturbed yards, and roadsides (Michigan Flora Online 2019). Fisher (1988) reported collections of *Eupatorium serotinum* from only 15 counties, most located in the southern quarter of the state. Due to the broad distribution of *Eupatorium perfoliatum* and the spread of *Eupatorium serotinum* into parts of Ohio where it had not been seen until recently, additional hybrid populations are likely to occur.

37) **HIPPOPHAE RHAMNOIDES** L. (Elaeagnaceae) – sea-buckthorn, seaberry. **Ashtabula Co.:** Geneva Twp., small, local population of arborescent shrubs persisting and thriving in sandy-loam soil at old homesite on edge of wooded shoreline, Geneva State Park, 1 Jun 2014, *Riley 2974 & Beechey* (OS), 2975 (CLM).

Sea-buckthorn is known as an escape in Canada, in the provinces of Alberta, Ontario, Quebec, Saskatchewan, and Yukon (Brouillet et al. 2010+).

38) **HOUSTONIA PUSILLA** Schoepf (Rubiaceae) – tiny bluet. **Hamilton Co.:** along Miami-Whitewater Bike Trail, south of Baughman Rd., north of New Haven Rd., 3 May 2014, *Boone & Decker s.n.* (MU).

*Houstonia pusilla* is an annual native to the midwestern, southern, and southeastern US (including Indiana and Kentucky) with introduced populations reported from Arizona, Delaware, and New York (Kartesz 2015).

39) **JUNCUS SUBCAUDATUS** (Engelm.) Coville & Blake (Juncaceae) – whitetail (woodland) rush. **Fairfield Co.:** Madison Twp., section 13, locally abundant, thousands of plants growing in semi-shaded, marshy alder thicket at headwaters of Lake Ramona, Clear Creek Metro Park, 1 Aug 2012, *Riley 2436* (OS); *ibid*, 3 Aug 2012, *Riley 2437* (OS), 2438 (MICH); *ibid*, 22 Aug 2012, *Riley 2439* (CLM), 2440 (MICH). **Jackson Co.:** Liberty Twp., section 17, local population growing within shrubby thicket in marshy seep, 5 Aug 2012, *Riley 2441*, *Boone, Minney, & Bens* (OS).

Historical records for this species in Ohio are known from Hocking and Ross Counties (Braun 1967). At the time this species was rediscovered in 2012 by Riley (Fairfield County) and Minney (Jackson County), it was listed as presumed extirpated in Ohio (ODNR 2018), since it had not been

seen in at least 20 years. Both the Fairfield County and Jackson County populations represent new county records for this rush.

40) **MAGNOLIA STELLATA** (Siebold & Zucc.) Maxim. (Magnoliaceae) – star magnolia. **Portage Co.:** NW ¼ Streetsboro Twp., one escaped, non-fruiting individual growing on mesic, somewhat poorly drained site, S side of boardwalk trail within small canopy opening, Tinker Creek Area of Liberty Park, Streetsboro, 14 Sep 2014, *Riley* 2992 (OS), 2993 (KE), 2994 (CLM).

Vincent and Cusick (1998) cited two collections of star magnolia from Bishop Woods on the campus of Miami University in Butler County, collected in 1995 and 1997.

41) **MORUS ALBA** L. × **MORUS RUBRA** L. (Moraceae) – hybrid mulberry. **Brown Co.:** Pike Twp., mature, non-planted tree located along S edge of small woodlot & along wooded fence line on NE side of Sovereign Grace Baptist Church, White Oak, 18 Aug 2005, *Riley* 309 (OS); *ibid*, 1 Jul 2006, *Riley* 458 (OS). **Cuyahoga Co.:** tree, 6 m tall, in heavy forest cover, Hemlock Grove Picnic Area, Bedford Reservation – Cleveland Metroparks, 21 Aug 1985, *Goldsworth* 59 (KE). **Hocking Co.:** Good Hope Twp., section 28, one triple-stem tree growing on E edge of upland, mesic woods & on W edge of hayfield, Rockbridge, 17 Sep 2016, *Riley* 3538 (OS), 3539 (BHO), 3540 (KE). **Pickaway Co.:** Walnut Twp., section 30, mature, healthy tree growing on rich, open, mesic site within successional meadow, Stages Pond State Nature Preserve, Ashville, 27 Aug 2017, *Riley* 3909 (OS), 3910 (MU). **Portage Co.:** Charlestown Twp., one mature tree growing in rich, mesic woods near N side of old homesite, Camp Ravenna Joint Military Training Center, 4 Sep 2015, *Riley* 3252 (OS), 3253 (KE). **Summit Co.:** Boston Twp., moist alluvial woods, ½ mile N of Peninsula, 27 Jul 1960, *Cooperrider* 7525 & *Herrick* (KE). **Vinton Co.:** Vinton Twp., section 20, one healthy, naturally-occurring, double-stemmed tree growing on W edge of mesic woods in association with *Acer rubrum* and *Prunus serotina*, Radcliff, 5 Oct 2019, *Riley* 4285 (OS), 4286 (KE), 4287 (BHO), 4288 (MU).

Unlike the native *Morus rubra*, *Morus alba* is a non-native species introduced to eastern North America in the early 17<sup>th</sup> century (Burgess & Husband 2006). As stated by Burgess et al. (2005), this hybrid and its later-generation backcrosses are becoming common wherever one parental species is relatively infrequent in relation to the other. In all probability, this hybrid is much more common throughout Ohio than these few collections indicate. Extreme caution must be applied when making *Morus* collections, as even typical specimens of *Morus rubra* and *Morus alba* can be difficult to distinguish, especially when immature. For added certainty, all collections cited above were taken from large, mature, fruiting individuals, which clearly exhibited fully developed characteristics of both parental species, including growth habit and bark pattern.

42) **PHOTINIA VILLOSA** (Thunb.) DC. (Rosaceae) – Oriental photinia. **Licking Co.:** Shrub, ca. 1 m tall, growing spontaneously on wood edge, east side, The Dawes Arboretum, 6 Oct 2015, *Brandenburg*, *Messinger*, & *Byrd s.n.* (DAWES).

Nesom (2014) included Ohio in the North American distribution of this Asian species, while Kartesz (2015) did not. The source of the record cited by Nesom is unknown.



43) ***POLYGONUM RAMOSISSIMUM*** Michx. subsp. ***PROLIFICUM*** (Small) Costea & Tardif (Polygonaceae) – bushy knotweed. **Wood Co.:** US Rt. 6 west of I-75, near Rudolph Rd., 23 Aug 2015, *Boone s.n.* (MU).

*Polygonum ramosissimum* subsp. *prolificum* is a widely distributed annual occurring in wet, saline soil throughout the continental United States and the southernmost six Canadian provinces (Costea et al. 2005). Costea et al. (2005) reported that while subsp. *prolificum* occurs in Ohio's bordering states of Kentucky and West Virginia, it has not been found in Indiana, Michigan, or Pennsylvania.

44) ***PRENANTHES ALTISSIMA*** L. var. ***HISPIDULA*** Fern. (Asteraceae) – tall rattlesnakeroot. **Pickaway Co.:** Washington Twp., section 10, local, clonal colony growing on top of bluff above tributary along Perimeter Loop Trail, A.W. Marion State Park, 10 Aug 2013, *Riley 2783* (OS); *ibid*, 17 Aug 2013, *Riley 2784* (OS), 2785 (BHO).

Although the typical variety is common and widespread in open deciduous hardwood or mixed woods, slopes, bluffs, and roadsides from the Atlantic coast west to Oklahoma and Texas, specimens of this variety, characterized by its densely hairy stems and pale yellow pappi, have been mostly found in New York, New England, and eastern Canada (Bogler 2006).

45) ***PRUNUS ANGUSTIFOLIA*** Marsh. (Rosaceae) – Chickasaw plum. **Clermont Co.:** E-SE Batavia Twp., small, fruiting population along bridle trail, East Fork State Park, 15 Aug 2006, *Riley 473 & Weber* (OS). **Gallia Co.:** Walnut Twp., section 32, large naturalized population located on open ridgetop (possibly an old homesite), Wayne National Forest, 4 Aug 2007, *Riley 702* (OS), 703 (MU); *ibid*, 26 Jul 2014, *Riley 3012* (BHO), 3013 (KE). **Wood Co.:** Plain Twp., section 36, small, escaped, mature, clonal population located along W edge of Slippery Elm Bike Trail, Bowling Green, 10 Jul 2007, *Riley 704-705* (OS).

In Ohio, *Prunus angustifolia* occurs either in naturalized populations or as local escapes. This southern species, which is reported to be infrequent across Kentucky (Jones 2005), is not considered to have been native to Ohio prior to European settlement. Cooperrider et al. (2001) deleted Chickasaw plum from the Ohio flora, as they were unable to locate any documenting specimens.

46) ***PRUNUS AMERICANA*** Marsh. × ***PRUNUS HORTULANA*** L.H. Bailey (Rosaceae) – hybrid plum. **Marion Co.:** Big Island Twp., section 33, one naturally occurring clonal population growing in open, early successional managed prairie ecosystem, Big Island Wildlife Area, 2 Jul 2008, *Riley 980-982* (OS); *ibid*, 20 Aug 2010, *Riley 1667-1668* (OS); *ibid*, 26 Apr 2011, *Riley 2861* (OS – four sheets); *ibid*, 29 Apr 2011, *Riley 2862* (OS – two sheets); *ibid*, 9 Aug 2011, *Riley 2863* (OS – eight sheets). **Warren Co.:** Eastern Wayne Twp., mature, clonal thicket consisting of seven mature trees observed along S edge of tall-grass prairie restoration, Caesar Creek Wildlife Area, 10 Sep 2005, *Riley 306* (OS); *ibid*, 28 Aug 2010, *Riley 1669-1670* (OS); *ibid*, 22 Apr 2011, *Riley 2864* (OS – two sheets). **Wood Co.:** Plain Twp., section 36, large, clonal thicket in open area along wire fencerow, Bowling Green, 24 Apr 2007, *Riley 725* (OS), 726 (MU); *ibid*, 10 Jul 2007, *Riley 727* (BGSU), 728 (MU); *ibid*, 15 Aug 2007, *Riley 729* (OS), 730 (MU); Liberty Twp., section 12, small clonal fruiting population located along W edge of Slippery Elm Bike Trail, Portage, 19 Jul 2007, *Riley 733-734* (OS), 735-736 (MU); *ibid*, 10

Aug 2007, *Riley* 737 (BGSU); *ibid*, 29 Apr 2008, *Riley* 993 (OS). Montgomery Twp., section 12, one young clonal population of three individuals located along E side of parking lot, Bradner Preserve, Bradner, 25 Apr 2008, *Riley* 992 (OS); *ibid*, 2 May 2008, *Riley* 994 (OS); *ibid*, 11 Jun 2008, *Riley* 996 (OS); *ibid*, 2 Sep 2011, *Riley* 2865 (OS).

This naturally occurring hybrid is not uncommon in western and west-central Ohio where its parental species are sympatric. Both species are commonly found throughout the original prairie region of Ohio, as these collections suggest. It should be noted that there is a sterile specimen from Anderson Twp., Hamilton County at OS (*E.M. Herrick s.n.*, accession 59575) collected on 1 Jul 1957, which is labeled as *Prunus americana*, although it bears many characteristics of this hybrid, including scattered gland-tipped teeth along the leaf margin. Because this is only a sterile voucher with no corresponding flowering specimen to confirm its identity, it falls short of being accepted herein as this hybrid.

47) **PRUNUS SUBHIRTELLA** Miq. (Rosaceae) – Higan cherry. **Butler Co.:** Fairfield Twp., woods along heavily disturbed stream corridor, Jayfield Dr., Hamilton, 17 Sep 2018, *Vincent & Saupé* 17742 (MU, NY). **Pickaway Co.:** Walnut Twp., section 23, three locally escaped seedlings from parent tree across road growing in needle mulch directly under bald-cypress in residential yard, Ashville, 2 Sep 2013, *Riley* 2802 (OS), 2803 (MU). **Ross Co.:** Harrison Twp., section 22, one escaped, rather pendulous tree growing in canopy opening on upland, ridgetop site within mature oak-hickory forest, Tar Hollow State Forest, 26 Aug 2017, *Riley* 3931 (OS), 3932 (BHO). **Union Co.:** southeast Jerome Twp., locally escaped sapling originating from weeping cultivar planted in adjacent backyard, growing under *Pinus sylvestris* in far backyard, Plain City, 27 Jul 2017, *Riley* 3933 (OS), 3934 (KE), 3935 (MU).

This species has been previously reported for Ohio: Vincent and Cusick (1998) cited a Brown County collection, and Wilder and McCombs (2002) cited a specimen from Cuyahoga County. This widely planted ornamental, especially its weeping cultivar, is becoming more common in residential landscapes, and, thus, will likely become increasingly common as an escape, as these four additional county records suggest.

48) **PYRUS PYRIFOLIA** (Burm. f.) Nakai (Rosaceae) – Chinese pear. **Gallia Co.:** Ohio Twp., section 2, one healthy, escaped tree growing on S-facing slope in young, dry, semi-open woods, Crown City State Wildlife Area, 5 Jul 2019, *Riley* 4289 (OS), 4290 (MU). **Portage Co.:** Charlestown Twp., a single, naturalized, fruiting tree growing on edge of shrubby, successional field, Camp Ravenna Joint Military Training Center, 24 Oct 2013, *Riley* 2806 (OS), 2807 (MU); *ibid*, 6 May 2014, *Riley* 3030 (OS), 3031 (MU).

*Pyrus pyrifolia* is native throughout China, Laos, and Vietnam, and, although not often seen as an escape from cultivation, previous collections have been made from Illinois, Virginia, and West Virginia (Catling & Mitrow 2014). This species is widely available in the nursery industry due its delectable fruits which are neither similar in taste nor shape to *Pyrus communis* L. The Ohio collection cited here was made from a fruiting, local escape located not far from an old homesite.

49) **QUERCUS COCCINEA** Münchh. var. **TUBERCULATA** Sarg. (Fagaceae) – scarlet oak. **Coshocton Co.:** SW ¼ Tiverton Twp., mature, canopy tree growing on flat, dry-xeric ridgetop woods, Tiverton Center, 19 Jul 2011, *Riley* 2103 (OS), 2104 (BHO). **Fairfield Co.:** Hocking Twp., section 7,

one mature tree growing on upper, S-SE-facing slope at SE corner of church property, Mt. Zion UM Church, Lancaster, 2 Jul 2012, *Riley 2516* (OS). **Scioto Co.:** Central Union Twp., one mature tree located in front yard near SW corner of house, Lombardsville, 2 Oct 2003, *Riley 572.01* (OS).

Braun (1961) reported that var. *tuberculata*, recognized by the thickened tuberculate scales of the acorn cup, occurs with the typical form in Pike and Scioto Counties. Such is the case for the three naturally occurring individuals cited above.

50) **QUERCUS** × **FERNOWII** Trelease (*Quercus alba* L. × *Q. stellata* Wangenh.) (Fagaceae) – Fernow’s oak. **Adams Co.:** SW ¼ Oliver Twp., one young, non-fruiting, double-stemmed tree located on S edge of woods in dry, open, blackjack-post oak opening, Johnson’s Ridge State Nature Preserve, 2 Jul 2005, *Riley 577.01-577.02* (OS). **Champaign Co.:** Urbana Twp., section 17, one mature tree located within Section 45 of the Oakdale Cemetery, Urbana, 1 Dec 2002, *Riley 577.03* (OS); *ibid*, 6 Jun 2005, *Riley 577.04-577.05* (OS); *ibid*, 7 Oct 2005, *Riley 577.06 & Weber* (OS). **Madison Co.:** Jefferson Twp., one mature individual located on S side of tennis courts at Westwood Memorial Park, West Jefferson, 13 Jun 2003, *Riley 577.07* (OS). **Scioto Co.:** Washington Twp., one large tree growing at top of hill at SW corner of house, West Portsmouth, 26 Nov 2004, *Riley 577.08* (OS).

Braun (1961) cited Scioto County in her statewide distribution for this nothospecies based on a 1951 specimen consisting of two sheets she collected from a tree at Copperhead Fire Tower within Shawnee State Forest. In 1961, this specimen was in the private collection of E.L. Braun. Unable to locate the specimen four decades later, Cooperrider et al. (2001) deleted *Quercus* × *fernowii* from the Ohio flora citing “no specimen.”

51) **RANUNCULUS SARDOUS** Crantz (Ranunculaceae) – hairy buttercup. **Adams Co.:** Meigs Twp., along St. Rt. 73 between Portsmouth and Jaybird Rd., pasture, 12 Jun 2008, *Becus 61208* (OS). **Butler Co.:** Weedy in lawn, university campus, Oxford, 5 Apr 2016, *Vincent 17492* (MU); *ibid*, 29 Apr 2016, *Vincent 17495* (MU). **Clermont Co.:** near Perrintown, horse pasture, 16 May 2008, *Becus 51608* (OS). **Hancock Co.:** Findlay, racetrack at county fairgrounds, East Sandusky St., weedy ground, 12 Jun 1996, *Cusick 33128* (OS). **Huron Co.:** Huron County Fairgrounds, west of Ridge Rd. south of Norwalk, moist, sunny ground, 8 May 1998, *Cusick 34305* (OS). **Licking Co.:** Hartford Twp., Hartford Fairgrounds, east of Fairgrounds Rd. grassy field, 9 Jun 1997, *Cusick 33852* (OS). **Lorain Co.:** Lorain County Fairgrounds, along Racetrack St., Rt. 18, Wellington, 2 Jun 1999, *Cusick 34992* (OS). **Madison Co.:** Madison County Fairgrounds, St. Rt. 38 North of London, weedy ground, 1 Oct 1996, *Cusick 33494* (OS). **Medina Co.:** Homerville, junction of US Rt. 224 and St. Rt. 301, weedy roadside, 2 Jun 1999, *Cusick 34989* (KE, OS). **Meigs Co.:** Meigs County Fairgrounds, northeast of junction of US Rt. 33 and St. Rt. 124, moist ground, 23 May 1998, *Cusick 34382* (OS). **Mercer Co.:** Mercer County Fairgrounds, Market St. west of Celina, wet ditch, 1 Jun 1998, *Cusick 34516* (KE, OS). **Noble Co.:** Olive Twp., County Fairgrounds, Fairground Rd., grassy fencerow, 5 Jun 1997, *Cusick 33835* (OS). **Ottawa Co.:** Limestone, Southwest of junction of Co. Rts. 62 and 75, weedy depression, 18 Jun 1996, *Cusick 33150* (OS). **Pickaway Co.:** Pickaway County Fairgrounds, center of racetrack, US Rt. 22, east edge of Circle, 15 May 2001, *Cusick 35867* (OS); extreme E Deer Creek Twp., horse pasture, 26785 Rector Rd. (T-106), 0.30 mi. N-NW of Hunsicker Rd. (T-108) & 1.80 mi. S of SR 138, 19 May 2012, *Riley 2524* (OS). **Pike Co.:** E Newton Twp., horse pasture and in adjacent wet ditch, Long Fork Rd. (CR 26), W-NW of SR 104, 19 May 2012, *Riley 2525* (CLM). **Portage Co.:** Randolph, animal barns

at county fairgrounds, St. Rt. 44, 13 Jun 2000, *Cusick 35497* (OS). **Summit Co.:** few plants in muddy puddle along oil well road S of Highland Rd. W of RR tracks, Brandywine Creek (SR 8) North Option, 11 Jun 2013, *Stover s.n.* (KE). **Trumbull Co.:** Mesopotamia Twp., Girdle Rd. south of Parks West Rd., horse pasture, 13 Jun 2000, *Cusick 35499* (OS). **Vinton Co.:** Elk Twp., about animal barns, 4-H Fairground, St. Rt. 93, 17 May 2000, *Cusick 35429* (OS). **Wayne Co.:** Marshallville, village park, South of Fulton Rd., weedy ground, 20 May 1994, *Cusick 31650* (OS). Baughman Twp., backyard at intersection of TR 221 and CR 32, Tope's Peat and Limestone, 24 May 1977, *Andreas 894* (KE).

*Ranunculus sardous*, a European species, is widely established in the southeastern United States and further north along the east coast, as well as in sites in northeastern California and Oregon (Whittemore 1997). Wilder and McCombs (2002) made the first mention of this introduced species in Ohio, citing a specimen collected in eastern Cuyahoga County.

52) **RUBUS ABLATUS** L.H. Bailey (Rosaceae) – plains blackberry. **Butler Co.:** Bishop Woods, east of Upham Hall, Miami University campus, Oxford, 2 Jun 1997, *Shockey 22* (MU – two sheets). **Coshocton Co.:** Lafayette Twp., fencerow at Fairfield Cemetery, 5 Jun 2001, *Cusick 35948* (ISC, OS – two sheets). **Darke Co.:** Greenville Twp., section 34, Shawnee Prairie Preserve, Ohio Route 502, just west of Greenville, 6 Jun 2003, *Vincent 11016 et al.* (MU). **Hamilton Co.:** McFarlan Woods, Mount Airy Forest Park, Cincinnati, 7 Sep 1935, *Hutchinson s.n.* (BH). **Lawrence Co.:** Hamilton Twp., uncommon, edge of woods at cemetery, 21 Jun 2001, *Cusick 35966* (ISC, OS – two sheets). **Muskingum Co.:** Cass Twp., frequent, RR embankment, Adams Mills, 5 Jun 2001, *Cusick 35952* (ISC, OS – two sheets). **Ottawa Co.:** South Bass Island, near the lighthouse, Put-in-Bay, 27 Jun 1947, *Gordon 47-8* (BH – two sheets); 31 Jul 1948, *Grover & Verduin 48-4* (BH). **Pickaway Co.:** Walnut Twp., SE ¼ section 30, very common species throughout open areas at Stages Pond State Nature Preserve, Ashville, 19 Jul 2005, *Riley 170* (OS); *ibid.*, 30 Jul 2018, *Riley 4190* (OS – three sheets). **Tuscarawas Co.:** 3 Jul 1948, *Davis & Davis 8777* (BH).

We suspect that this species may be much more abundant in Ohio than these records indicate, as it occurs throughout the Midwest and is especially common in Iowa and Missouri from where it was described (Widrechner 2013). Unfortunately, many vouchers of Ohio's representatives of *Rubus* section *Arguti* (Rydb.) L.H. Bailey are too fragmentary to identify to species.

53) **RUBUS ABORIGINUM** Rydb. (Rosaceae) – garden dewberry. **Athens Co.:** Jul 1939, *Abbott 1157* (MU). **Auglaize Co.:** St. Marys, 21 May 1898, *Wetzstein 5434* (MU). **Hocking Co.:** Benton Twp., section 9, edge of old road through young oak woods on ridgetop, Camp Oty-Okwa, 17 May 2000, *Cusick 35436* (OS); Good Hope Twp., section 28, locally scattered, not particularly abundant low-arching species with tip rooting primocanes and floricanes with large ascendate infructescences lacking stipitate glands on pedicels, population growing on dry, S-facing upper slope on edge of mature upland scarlet-chestnut oak woods, 19 Jun 2015, *Riley 3291* (OS – two sheets). **Jefferson Co.:** Salem Twp., floor of open ash woods, floricanes low arching, rooting at tips, Sanders farm, ¼ mi. NE of Annapolis, 29 May 1964, *Herrick s.n.* (OS). **Lucas Co.:** palustrine wet meadow with few shrubs, Kitty Todd Preserve, Mancy Tract (TNC), 1 Jun 1995, *Walters 1995:041* (CLM). **Mahoning Co.:** Poland Twp., occasional in openings on reclaimed soils, Carbon Limestone Sanitary Landfill Facility ca. 3.7 km SE of Poland Center, 26 May 1998, *Isaac 10601* (YUO – two sheets). **Ottawa Co.:** Camp Perry, wetland area in NW corner of site, 26 May 2005, *Godec CPO79* (MU). **Portage Co.:** SE ¼ Freedom Twp.,

local population consisting of low-arching, non-glandular canes with ascendate pedicels sprawling over pavement on E edge of D-Block Lane 3, Camp Ravenna Joint Military Training Center, 11 Aug 2017, *Riley 3943* (ISC – three sheets); *ibid*, 6 Jul 2018, *Riley 4195* (OS – four sheets). **Scioto Co.:** Madison Twp., NW ¼ Section 11, local population growing in full sun on dry-xeric, open roadside embankment, 6 Jul 2013, *Riley 2832* (OS – two sheets).

This species was the source of a number of popular dewberry cultivars in the late 1800s and early 1900s [as discussed under the synonym, *Rubus almus* L.H. Bailey, by Bailey (1943)]. However, in Ohio, we have not observed examples suggesting the persistence of old fruit cultivars; instead, the habitats in which this dewberry occurs are diverse and the plants more typical of unselected forms. We suspect that this species likely much more common than these few records indicate.

54) ***RUBUS ALUMNUS*** L.H. Bailey [syn. ***RUBUS COREI*** L.H. Bailey] (Rosaceae) – oldfield blackberry. **Darke Co.:** Jackson Twp., section 24, Coppess Nature Sanctuary, 16 Jul 2011, *Vincent 1946* & *Cusick* (MU). **Harrison Co.:** 28 Jun 1900, *Kellerman s.n.* (OS). **Lorain Co.:** 18 Jun 1963, *Fuller & Fuller F-63-1* (MIL). **Ottawa Co.:** 20 Jul 1947, *Gordon 47-11* (BH); South Bass Island, 25 Jul 1947, *Gordon 47-16* (BH); Kelleys Island, 26 Jul 1947, *Gordon 47-5* (BH); Put-in-Bay, 29 Jul 1947, *Gordon 47-19* (BH); 31 Jul 1948, *Grover & Verduin 48-1* (BH); 31 Jul 1948, *Grover & Verduin 48-3* (BH). **Vinton Co.:** Vinton Twp., section 36, locally common, thickets at edge of woods, Vinton Furnace Experimental Forest, 17 May 2006, *Gardner 5194* (ISC).

The specimens noted above from Lorain and Ottawa Counties were the basis for Widrlechner (1998) mapping those two as the only Ohio counties in which this species had been collected at the time of that publication. The Lorain County collection of 29 Jul 1947 serves as the type for *Rubus corei* L.H. Bailey (Core 1948).

55) ***RUBUS ARGUTUS*** Link (Rosaceae) – sawtooth blackberry, southern blackberry. **Gallia Co.:** Ohio Twp., section 2, locally common, upright, non-glandular canes growing on seasonally wet – predominately dry, acidic, sandy clay soil within successional, mine-spoil area, Crown City State Wildlife Area, 28 Jul 2018, *Riley 4198* (OS – five sheets), *4199* (ISC – four sheets).

*Rubus argutus* is an extremely common species to the south of Ohio; in many parts of the southeastern US, it is perhaps the most common species of *Rubus*, but evidently has not often made its way as far north as Ohio. See entry in Section II for details concerning Ohio counties from which misidentified specimens were previously attributed.

56) ***RUBUS BEAMANII*** Widrlechner & Riley [*Rubus vagus* L.H. Bailey (*nom. illeg.*)] (Rosaceae) – Beaman's dewberry. **Portage Co.:** Paris Twp., rare, locally scattered, low-arching, tip-rooting glandular dewberry growing on hummocks and small rises within mature, densely shaded, high-quality swamp woods, Camp Ravenna Joint Military Training Center, 29 Jun 2017, *Riley 3944* (OS), *3945* (KE); Ravenna Twp., rare, one robust individual growing on rich, loam, mesic, open site, Shaw Woods Working Lands Park, Ravenna, 8 Jul 2017, *Riley 3946* (OS – two sheets); Shalersville Twp., rare, local, non-vigorous, low-arching, tip-rooting population growing in dense shade on S edge of rich, mature, mesic woods & on N side of drainage channel within open wetland, Morgan Preserve, 13 Aug 2017, *Riley 3947* (OS – two sheets), *3948* (KE – two sheets), *3949* (ISC – two sheets); SE ¼ Shalersville

Twp., uncommon; very local, low-arching, tip-rooting, glandular population on rich site within small (mostly shaded) canopy opening within mature, mesic woods, Morgan Preserve, Shalersville, 18 Jul 2018, *Riley 4202* (KE – three sheets). **Trumbull Co.:** Braceville Twp., rare, rather large, local fruiting population with low arching, tip-rooting canes growing on slightly elevated and acidic, loam, soil on W edge of mature pin oak flatwoods, Camp Ravenna Joint Military Training Center, 24 Jul 2017, *Riley 3950* (KE – four sheets), *3951* (MU – two sheets), *3952* (MICH – two sheets), *3953* (CM – two sheets), *3954* (CLM – two sheets); SW ¼ Green Twp., small, very local, non-robust and non-tip-rooting population subjected to filtered sunlight within understory of mature, swamp/flatwoods, Mosquito Creek State Wildlife Refuge, 1 Jul 2018, *Riley 4203* (ISC – three sheets); S ½ Bazetta Twp., uncommon; small, local, population growing on loam, moist-mesic site on edge of vernal pool within understory of densely shaded, mature swamp forest/flatwoods, Elm Road Public Hunting Area, Cortland, 15 Jul 2018, *Riley 4204* (KE – two sheets).

According to Widrlechner and Riley (2017), this potentially globally rare dewberry from section *Procumbentes* (Rydb.) L.H. Bailey (= *Flagellares* (L.H. Bailey) L.H. Bailey) was only extant in Ohio, with historical records from Kalamazoo County, Michigan. A recent review of all specimens of Michigan *Rubus* at MICH turned up records from three additional Michigan counties, including Benzie, Crawford, and Oscoda – the most recent having been collected in 1959. The Ohio vouchers referenced here do not include those which were previously cited in Widrlechner & Riley (2017). Beaman’s dewberry was accepted in 2018 as native to the Ohio flora by the Ohio Rare Plants Advisory Committee, which placed it on the Ohio Rare Plant List as an “Added” species with possible state legal status pending further review and additional searching. This matter will be discussed when the committee reconvenes in 2020.

57) ***RUBUS CANADENSIS*** L. (Rosaceae) – Canadian blackberry, smooth blackberry. **Cuyahoga Co.:** local in semi-shaded edge habitat along trail through rocky gorge with hemlock-hardwood forest, South Chagrin Reservation – Cleveland Metroparks, 23 Jul 2019, *Reinier 1817* (KE – five sheets); *ibid*, 24 Jul 2019, *Reinier 1818* (KE – three sheets); local in seasonally wet woods, North Chagrin Reservation – Cleveland Metroparks, 29 Jul 2019, *Reinier 1822* (ISC – two sheets, KE – two sheets); local on steep ravine slope under beech-birch-maple-oak forest, South Chagrin Reservation – Cleveland Metroparks, 29 Aug 2019, *Reinier 1844* (KE – two sheets). **Lake Co.:** locally abundant at margin of a depression in wet woods, North Chagrin Reservation – Cleveland Metroparks, 12 Aug 2019, *Reinier 1832* (ISC – two sheets, KE – two sheets).

In late July through August 2019, John E. Reinier of the Cleveland Metroparks made several collections from native populations of *Rubus canadensis* located on Metropark property in Cuyahoga and Lake Counties. These vouchers were later verified as such by co-author Mark Widrlechner in October 2019, resulting in the first positively identified specimens of *Rubus canadensis* from Ohio.

Previous sources which had included this taxon as native to the Ohio flora did so based on incorrectly identified specimens housed at CLM and CM. See entry in Section II for additional information regarding those collections.

58) ***RUBUS CELER*** L.H. Bailey (Rosaceae) – swift dewberry. **Ashtabula Co.:** tip-rooting, scattered, brushy field, S of South Ridge Rd., city of Conneaut, 22 Jul 1994, *Cusick 31877* (OS).

**Champaign Co.:** 5 Jul 1950, *Davis & Davis 9074* (BH). **Portage Co.:** NW ¼ Paris Twp., small, local population growing on edge of mesic woods, Camp Ravenna Joint Military Training Center, 10 Aug 2017, *Riley 3987* (OS – two sheets), 3988 (ISC – two sheets). **Scioto Co.:** SW ¼ Union Twp., uncommon, located along S-SW edge of logging road on dry, open site, Shawnee State Forest, 22 Jun 2018, *Riley 4240* (ISC – six sheets).

In Widrlechner (1998), only Champaign County in Ohio was mapped for this dewberry, which resembles *Rubus flagellaris* Willd. except for the shape of its unshouldered primocane central leaflets and a few other minor characters. Widrlechner verified the Ashtabula County specimen as such in 2000.

59) **RUBUS CENTRALIS** L.H. Bailey (Rosaceae) – heartleaf dewberry. **Adams Co.:** dry oak woods, along the edge of woods near Johnson Ridge, 9 Jul 2015, *Boone s.n.* (ISC, MU).

This dewberry resembles the more common *Rubus invisus* (L.H. Bailey) Britton, which occurs in the same habitats throughout southern and southeastern Ohio, but differs from it by having consistently 1-flowered inflorescences and primocanes with distinctly cordate terminal leaflets which are wide-ovate (Widrlechner & Riley 2017). *Rubus centralis* has been reported from ten counties in southern Indiana (Kartesz 2015).

60) **RUBUS CURTIPES** L.H. Bailey (Rosaceae) – shortstalk dewberry. **Gallia Co.:** Walnut Twp., section 32, locally common, low arching species growing on dry ridgetop site in association with young, successional *Pinus virginiana*, Wayne National Forest, 26 Jul 2014, *Riley 3044* (OS – two sheets); *ibid*, 25 Aug 2017, *Riley 3955* (ISC – two sheets). **Hocking Co.:** Good Hope Twp., section 21, common, non-glandular bramble with low-arching, tip-rooting canes growing on dry, acidic, rather nutrient-poor soil within open, underground, gas-line clearing on or near hilltop site, Rockbridge, 24 Jun 2018, *Riley 4205* (OS). **Jackson Co.:** Liberty Twp., section 12, common, low-arching, tip-rooting, non-glandular species growing on dry ground in understory and on edge of young *Pinus virginiana* stand at base of S-facing sandstone wall where plants receive full-near full sunlight, Jackson, 8 Jun 2018, *Riley 4206* (OS – two sheets), 4207 (ISC – two sheets). **Lawrence Co.:** Washington Twp., section 12, local population with low arching primocanes & racemiform inflorescence with very short pedicels, growing in full sun on dry, shallow, rocky, sandy soil near small sandstone outcrop within narrow roadside powerline clearing, 10 Aug 2013, *Riley 2811* (OS – four sheets); *ibid*, 24 Jun 2017, *Riley 3956* (OS – two sheets), 3957 (ISC – two sheets). **Lorain Co.:** NE Amherst Twp., on old railroad embankment, 17 May 1970, *Jones 70-5-17-255* (OS). **Lucas Co.:** 9 Aug 1924, *Mosley s.n.* (OS). **Ross Co.:** Liberty Twp., section 11, local population on dry, open, rocky, acidic-clay soil at base of state champion *Pinus rigida*, Peecher Cemetery, Londonderry, 8 Jun 2018, *Riley 4208* (OS – two sheets), 4209 (ISC – three sheets). **Vinton Co.:** Harrison Twp., section 27, local population growing on dry, open, S & W-facing hillside along logging road within a dry, open, 2011 clear-cut site, 28 Jul 2013, *Riley 2826* (OS – three sheets). **Wayne Co.:** 5 Jul 1957, *Davis & Davis 11865* (CM).

Widrlechner (1998) did not map any Ohio counties as having a confirmed specimen of this glandless dewberry, despite the fact that it is widely distributed from Iowa and Minnesota, east to New Jersey and south to Tennessee. *Rubus curtipes* is likely to be fairly common throughout Ohio and should be sought in dry, open, somewhat disturbed habitats and successional fields.

61) ***RUBUS DEAMII*** L.H. Bailey (Rosaceae) – Deam’s dewberry. **Lake Co.:** 3 Jun 1948, *Fuller F-48-1* (MIL). **Scioto Co.:** Green Twp., uncommon, local, healthy population (occasionally sprayed) with low-arching, tip-rooting, glandular-ascendate pedicels growing on disturbed, open site within ca. 375 square-foot area under overhead powerlines, Franklin Furnace, 9 Jun 2018, *Riley 4210* (OS – four sheets), *4211* (ISC – three sheets). **Vinton Co.:** Vinton Twp., section 30, oak-hickory forest, Vinton Furnace Experimental Forest, 10 May 1969, *Silberhorn 3341* (KE).

This species has been found to be scattered throughout the state, not common at any one location. In Ohio, *Rubus deamii* occurs on a variety of habitats, including oak-hickory forests, edges of successional woods, and in an open, successional meadow on rich, silt-loam soil. Kartesz (2015) presented a distribution map, which includes five Ohio counties (Erie, Hamilton, Knox, Montgomery, and Ottawa), based on Braun (1961) and Stuckey and Duncan (2010). We have not been able to verify the specimens upon which those records were based.

62) ***RUBUS DENSISSIMUS*** H.A. Davis & T. Davis (Rosaceae) – Morgantown blackberry. **Lucas Co.:** N of Monclova Rd. and E of the Girdham Sand Barrens, Oak Openings Metro Park, 1 Aug 2015, *Boone & Walters s.n.* (ISC – two sheets). **Mahoning Co.:** SW ¼ Berlin Twp., uncommon, small, very local, isolated population subjected to near full sun growing in small, shallow, wet depression within ca. 900 square-foot canopy opening in young, even-aged, privately-owned pin oak flatwoods adjacent W of Berlin Lake State Wildlife Area, 12 Aug 2018, *Riley 4213* (OS – six sheets). **Portage Co.:** Windham Twp., local in *Carex utriculata* – *Scirpus cyperinus* boggy meadow, 0.3 mi. W of Portage/Trumbull County Line, 0.1. mi S of boundary fence, Camp Ravenna Training & Logistics Site, 9 Jun 2010, *Gardner 6840* (ISC); Windham Twp., local, 7.5 square-meter-area on sphagnum hummocks in boggy swamp, 0.33 mi. W of Portage/Trumbull County Line, Camp Ravenna Training & Logistics Site, 7 Jun 2011, *Gardner 7060* (ISC – five sheets), *7061* (ISC – four sheets); Rootstown Twp., small, local population growing along SW side of trail, Triangle Lake Bog State Nature Preserve, Ravenna, 16 Jul 2013, *Riley 2814* (OS – three sheets); Charlestown Twp., local population growing in front of igloo 2-B-4, Camp Ravenna Joint Military Training Center, 1 Aug 2014, *Riley 3040* (KE – five sheets). **Trumbull Co.:** Southington Twp., pasture, border of woods, 10 Aug 1947, *Rood 2291* (KE); *ibid*, old pasture field, Braceville Twp., 7 Jun 1949, *Rood 2467* (KE – two sheets, MIN); Braceville Twp., locally common in open, wet meadow, LaBrae Athletic Club, Warren, 3 Jul 2013, *Riley 2815* (OS – five sheets).

This species, first collected in Ohio on 10 Aug 1947 in Trumbull County by Almon N. Rood (KE), was originally labeled as *Rubus argutus*. More than 50 years later (in 2011), it was also discovered at Camp Ravenna Joint Military Training Center in neighboring Portage County. Though known in Ohio from only the northeast corner of the state and a single site in the Oak Openings of Lucas County, where it occurs in the wet meadows, woodland edges, and fallow fields of the northeastern counties, it is sometimes locally abundant. The bright green primocanes bearing distinctly dense prickles make this member of section *Arguti* easy to identify even while dormant. West Virginia is the only other state in which this species is known to occur (Davis et al. 1969, Kartesz 2015).

63) ***RUBUS DEPAVITUS*** L.H. Bailey (Rosaceae) – Aberdeen dewberry. **Scioto Co.:** Union Twp., local, low-arching, tip-rooting species with short, ascendate, glandular pedicels located along S-



SW edge of logging road, Shawnee State Forest, 29 Jul 2017, *Riley 3967* (OS – three sheets), 3968 (ISC – two sheets); *ibid*, 22 Jun 2018, *Riley 4214* (OS – four sheets).

There is a single floricate specimen collected on 30 Apr 1991 in Green Twp., Scioto County (*J.S. McCormac 3486*) (MU) from “dry, cindery ground of RR embankment.” This sample resembles *Rubus depavitus* and was even annotated as such by Widrlechner in July 2017. Unfortunately, without a corresponding primocane, this collection cannot be positively confirmed as either *Rubus depavitus* or the very similar *Rubus kentuckiensis* L.H. Bailey. Given its preference for dry, upland woods and open areas, *Rubus depavitus* is presumed to be widely overlooked and under-collected throughout the southern third of Ohio.

64) **RUBUS FULLERI** L.H. Bailey (Rosaceae) – Fuller’s bristleberry. **Ashtabula Co.:** Dorset Twp., edge, E-facing thicket, Dorset Wildlife Area, 30 Jun 2001, *Stamp & Riccio 126.01* (CLM); growing in association with *R. hispidus* on Blakeslee silt loam in recent clearing on N and E sides of holding pond, along W edge of parking lot, Pymatuning State Park, 4 Jul 2016, *Riley 3615* (ISC – two sheets), 3617 (ISC), 3618 (ISC – five sheets). **Cuyahoga Co.:** abundant in wet acidic opening between SOM Center Rd. and Buttermilk Falls Pkwy., North Chagrin Reservation – Cleveland Metroparks; *ibid*, 25 Jun 2019, *Reinier 1796* (ISC – two sheets, KE – two sheets); *ibid*, 29 Jul 2019, *Reinier 1821* (ISC – two sheets, KE – two sheets). **Lorain Co.:** Frequent, disturbed, moist woods, city of Avon Lake, 25 Jun 1997, *Cusick 33893 & Schneider* (OS). **Portage Co.:** NE ¼ SE ¼ Windham Twp., rare and local, occurring on edge of wet, swampy woods along North Perimeter Fence, Camp Ravenna Joint Military Training Center, 17 Jun 2015, *Riley 3300* (ISC), 3301 (OS – two sheets); *ibid*, 24 Jun 2015, *Riley 3302* (KE – two sheets); *ibid*, 29 Jul 2015, *Riley 3303* (ISC – two sheets); SE ¼ SE ¼ Windham Twp., large, local population of growing along E edge of *Pinus strobus* plantation, Camp Ravenna Joint Military Training Center, 8 Sep 2015, *Riley 3304* (ISC – two sheets), 3305 (OS – three sheets); S ½ SE ¼ Windham Twp., somewhat large, local, population growing on moist somewhat poorly drained, shaded site located at corner of mature mesic to wet mesic, even-aged woods, Camp Ravenna Joint Military Training Center, 12 Jul 2016, *Riley 3616* (OS – six sheets); NE ¼ Ravenna Twp., rare, local, robust population growing on rich, loam, open site on mesic, E-SE facing slope, on W side/edge of overhead powerline clearing, Shaw Woods Working Lands Park, Ravenna, 1 Jul 2017, *Riley 3969* (OS – seven sheets), 3970 (KE – two sheets); S ½ SE ¼ Windham Twp., local population growing within small, shallow, open depression/poorly-drained site, Camp Ravenna Joint Military Training Center, 3 Jul 2017, *Riley 3971* (KE – two sheets). **Trumbull Co.:** SW ¼ Braceville Twp., native, locally scattered, growing on open, mesic site, along S side of North Perimeter Road, Camp Ravenna joint Military Training Center, 18 Sep 2015, *Riley 3306* (OS – three sheets), 3307 (ISC – two sheets); *ibid*, 7 Aug 2017, *Riley 3972* (CM – four sheets), 3973 (CLM – three sheets).

*Rubus fulleri*, a species with low-arching, tip-rooting canes, is in many ways similar to members of sections *Hispidi* (Rydb.) L.H. Bailey and *Setosi* (L.H. Bailey) L.H. Bailey, especially to *Rubus hispidus* L. and *Rubus wheeleri* L.H. Bailey, except for the fact that unlike those two species, *Rubus fulleri* is decidedly glandular along the primocane axis and on the pedicels of the inflorescence. Unlike *Rubus hispidus*, *Rubus fulleri* does not retain its obovate leaves of three to five leaflets throughout the winter. Where it occurs in Ohio, *Rubus fulleri* often grows in association with *Rubus hispidus*, typically on edges of high-quality wetlands and wet to rich-mesic acidic woods. According

to Allison W. Cusick (pers. comm.), the site at which the Lorain County collection was made has since been destroyed. Since 2018, *Rubus fulleri* has been listed in Ohio as State Endangered (ODNR 2018).

65) **RUBUS FURTIVUS** L.H. Bailey (Rosaceae) – openground bristleberry. **Ashtabula Co.:** Richmond Twp., growing on moist ground at edge of swamp, N edge of Pymatuning Lake, 12 Jun 1966, *Cusick 2321* (KE); *ibid*, common, swamp forest, 0.25 – 0.50 mi. N, Padanarum Area, Pymatuning State Park, 28 May 1977, *Cusick 16502* (KE); *ibid*, rare, small, local, non-robust, fruiting population encompassing ca. 400 ft.<sup>2</sup> area occurring on rich, silt-loam soil of hummocks within densely shaded, mature, even-aged swamp woods, Padanarum Area, Pymatuning State Park, 20 Aug 2017, *Riley 3974* (OS – two sheets), *3975* (KE – two sheets), *3976* (ISC – two sheets).

Davis et al. (1967) reported little about this seldom seen or “furtive” bristleberry, other than to mention that at the time, it had only been collected from a few locations in Tompkins County, New York. Their report was mistaken; Bailey’s type was from Van Etten, New York, which is actually in Chemung County (Bailey 1947). Aside from those specimens from Ashtabula County, efforts to locate any additional specimens collected in the 50+ years since the publication of Davis et al. (1967) have thus far proven futile. Based on this information, and the fact that the site where it occurs in Ohio is a very pristine, mature swamp forest in which several other northern endemics occur, we conclude that this species is truly rare and worthy of consideration for state listing in both New York and Ohio.

66) **RUBUS HUMILIOR** L.H. Bailey (Rosaceae) – humble blackberry. **Portage Co.:** Shalersville Twp., uncommon, two local mature individuals growing along edge of open, fallow field, Morgan Preserve, Shalersville, 17 Jul 2013, *Riley 2824* (OS – three sheets); *ibid*, 24 Jul 2013, *Riley 2825* (OS – three sheets); SE ¼ Freedom Twp., uncommon, local, healthy, somewhat low-arching, non-tip-rooting, population with primocanes 18 to 24-inches above ground growing on rich, mesic site where subjected to full sun, Camp Ravenna Joint Military Training Center, 22 Jul 2018, *Riley 4191* (ISC – five sheets), *4192* (OS – five sheets).

*Rubus humilior* appears to be a rather uncommon species, which Davis et al. (1969) erroneously classified as a member of section *Arguti* and lumped in synonymy under *Rubus uvidus* L.H. Bailey. The glandular inflorescences of *Rubus humilior* are evidence enough that it is best categorized as a member of section *Alleghenienses* (L.H. Bailey) L.H. Bailey. *Rubus humilior* is currently known to occur in northeastern Ohio and northwestern Pennsylvania from where the type specimen was collected. When encountered in the field, this low-arching blackberry, with its comparably small, ternate or quinate leaves and delicate, glandular racemiform inflorescences, bears a strong resemblance to a dwarf *Rubus allegheniensis*. While some collections are easy to discern, others exist which lack clear discontinuities between *Rubus allegheniensis* and *Rubus humilior*. One such intermediate Ohio collection was made southeast of Wooster in Wayne County, *H.A. & T. Davis 8786*, 29 Jun 1949 (CM – two sheets).

67) **RUBUS INVISUS** (L.H. Bailey) Britton (Rosaceae) – upland dewberry. **Athens Co.:** York Twp., section 8, common species growing in dry oak woods, Wayne National Forest, 17 Aug 2013, *Riley 2821* (OS – three sheets). **Butler Co.:** Hanover Twp., section 12, Hueston Farm and Forest Preserve, 2009, *Mathews 32* (MU). **Hocking Co.:** Perry Twp., section 36, locally common species along N-NE edge of upland oak woods along S edge and near SE corner of cemetery, Morgan Chapel

UM Church, Rockbridge, 24 Aug 2017, *Riley* 3980 (OS – four sheets), 3981 (ISC – two sheets). **Jackson Co.:** Milton Twp., section 16, scattered, along woods, by edge of pond, 20 May 1981, *Spooner* 615 (OS). **Lawrence Co.:** Decatur Twp., section 26, uncommon, small, local, low-arching population growing in full sun on dry, wooded ridgetop, Dean State Forest, 1 Sep 2014, *Riley* 3042 (OS – four sheets). **Montgomery Co.:** Randolph Twp., section 3, 30 plants, dry, rocky hilltop above Stillwater River, 30' S of Miami County line, Pigeeye Reserve, 17 May 1987, *Stine* 67 (MU); *ibid*, 5 Jun 1987, *Stine* 66 (MU). **Muskingum Co.:** on dry land, near Zanesville, 23 Jun 1947, *Bailey* 355, 358-359 (BH); Rest Area along Interstate 70 West, E of Zanesville, 18 May 2014, *Vincent* 16677 (MU). **Perry Co.:** Clayton Twp., section 20, locally common, growing along NE edge of forest access lane within dry, open (recently harvested) oak woods, 29 Jun 2013, *Riley* 2823 (OS – three sheets); *ibid*, 10 Aug 2014, *Riley* 3043 (ISC – four sheets). **Scioto Co.:** extreme S Nile Twp., local, rather shaded population growing on mesic site within young sweetgum-sycamore woods on E side of Moore Run Bridle Trail, Shawnee State Forest, 9 Jun 2018, *Riley* 4224 (ISC – three sheets). **Vinton Co.:** Harrison Twp., section 22, small, local somewhat shaded population growing on E-facing edge of mature, dry, upland, oak-hickory forest, 26 Aug 2017, *Riley* 3982 (ISC – three sheets).

Kartesz (2015) presented a distribution map depicting a collection from Lawrence County. The basis for this particular record was a 1950 collection made by Floyd Bartley (housed at CM). While this specimen falls within the range of variation for this species, it lacks a primocane, and, thus, we cannot confirm its identity. Notwithstanding, in 2014, Riley did collect this taxon in Lawrence County.

68) **RUBUS KENTUCKIENSIS** L.H. Bailey (Rosaceae) – Kentucky dewberry. **Tuscarawas Co.:** Wayne Twp., frequent, edge of railroad track, Dundee, 16 Jul 1967, *Andreas* 292 (KE).

This species is very similar to the aforementioned *Rubus depavitus*, differing in that its primocane leaves are always three-foliolate with the terminal leaflet being wide-elliptic to rhomboid and abruptly shouldered (Widrechner & Riley 2017).

69) **RUBUS LEVICULUS** L.H. Bailey (Rosaceae) - bottomland dewberry. **Adams Co.:** Green-Jefferson Twp. line, frequent, dry field, jct. of Lower Twin Creek and Sunshine Ridge Rds., 29 May 1980, *Cusick* 20032 (KE, OS); SE Green Twp., large population growing on dry, open, sandy terrace on E edge of successional field, W side of Sandy Springs Cemetery, Sandy Springs, 6 Jul 2013, *Riley* 2820 (OS – three sheets); *ibid*, 25 Jun 2016, *Riley* 3619 (ISC – six sheets). **Hocking Co.:** 13 Jul 1971, *Noblick* 499 (OS). **Jackson Co.:** Liberty Twp., 13 May 1934, *Bartley & Pontius s.n.* (OS); Franklin Twp., section 27, along Franklin Valley Road, 13 May 1981, *Spooner* 600 (KE); Liberty Twp., section 16, locally common species growing on dry, open, ridgetop, recently clear-cut site, 28 Jul 2013, *Riley* 2822 (OS – three sheets). **Lake Co.:** Jun 1928, *Beardslee s.n.* (OS). **Lawrence Co.:** Elizabeth Twp., sandy oak woods, 16 May 1969, *Silberhorn s.n.* (KE). **Lucas Co.:** Springfield Twp., section 6, moist, grassy field, Campbell Nature Preserve, 29 May 1987, *Cusick* 26479 (MU). **Perry Co.:** Growing along abandoned RR tracks, old 12, 3 mi. south of Corning, 15 May 1965, *Perine* 470 (BHO). **Ross Co.:** Green Twp., section 32, uncommon, small, local, somewhat depauperate population growing in acidic clay soil on open slope along N side of trail within dry, upland canopy opening, Great Seal State Park, Chillicothe, 19 Jun 2015, *Riley* 3309 (OS – two sheets); western Franklin Twp., low-arching, tip-rooting population growing in canopy opening within mature, dry, upland (ridgetop) oak-hickory woods, Scioto Trail State Forest, 22 Jun 2018, *Riley* 4225 (OS – three sheets), 4226 (ISC – two sheets); Harrison Twp.,

section 15, large population growing along either side of skid trail within small opening in mature, mesic, upland woods, Tar Hollow State Forest, 28 Jul 2018, *Riley 4227* (OS – six sheets). **Scioto Co.:** SE Nile Twp., small, local, somewhat depauperate population growing in small canopy opening on dry, acidic, nutrient poor, clay soil located on and along E side of skid trail on S-facing, upper slope within mature, upland oak-hickory woods, Shawnee State Forest, 22 Jun 2018, *Riley 4229* (ISC – three sheets). **Vinton Co.:** Vinton Twp., mixed oak woods, Vinton Furnace Experimental Forest, 15 May 2005, *Glasgow 37* (BHO).

Despite the common name given for this glandular dewberry with inflorescences with 1 to a few flowers bearing ascendate pedicels, it is typically found in Ohio in dry, upland, and sandy oak woods.

70) **RUBUS MERACUS** L.H. Bailey (Rosaceae) – dryslope dewberry. **Adams Co.:** dry ridge-top woods, along Sunshine Ridge, Edge of Appalachia Preserve, 19 Jun 2015, *Boone s.n.* (MU – two sheets). **Carroll Co.:** 30 Jul 1962, *Fuller & Fuller F-62-71* (MIL). **Erie Co.:** Sandusky, 31 May 190?, *Kellerman s.n.* (OS); Cedar Point, 29 Jul 1903, *Jennings s.n.* (OS); Berlin Twp., on brushy railroad embankment, w of Ceylon, 2 Jul 1971, *Jones 71-7-2-290* (OS). **Hamilton Co.:** oak woods on ridge-top, Bender Mountain, 27 Jun 2015, *Boone s.n.* (MU – two sheets). **Highland Co.:** East Monroe, 13 Jul 1899, *Kellerman s.n.* (OS). **Portage Co.:** extreme SE corner Windham Twp., uncommon, small, local, tip-rooting colony growing on slag of abandoned RR tracks where plants are subjected to half-full sun, Camp Ravenna Joint Military Training Center, 30 Sep 2016, *Riley 3614* (ISC – four sheets); *ibid.*, 12 Jul 2017, *Riley 3983* (OS – four sheets); SE ¼ Windham Twp., somewhat large population growing on slag ballast along E edge of RR tracks near SE edge of East Classification Yard on dry, open site, Camp Ravenna Joint Military Training Center, 20 Jul 2018, *Riley 4230* (ISC – four sheets). **Trumbull Co.:** SE ¼ Farmington Twp., rather common and abundant dewberry growing on open, moist-mesic site within 100 ft. wide overhead powerline clearing, Grand River State Wildlife Area, 22 Jul 2018, *Riley 4231* (ISC – two sheets).

According to Davis et al. (1968), *Rubus meracus* is a relative of *Rubus roribaccus* (L.H. Bailey) Rydb. widely distributed in the Midwest; at times, these two taxa can be difficult to distinguish [see Widrechner (2013)].

71) **RUBUS MISSOURICUS** L.H. Bailey (Rosaceae) – Missouri bristleberry. **Lorain Co.:** a tall (2 m) upright plant, among bushes in fencerow, Oberlin, 5 Aug 1948, *Grover 48-20* (BH – two sheets); *ibid.*, 6 Aug 1948, *Grover 48-24* (BH – two sheets).

According to Widrechner (2013), in Missouri, this member of section *Setosi* with its upright-arching primocanes and arching floricanes occurs in upland and bottomland prairies, edges of bottomland forests, streambanks, within pastures, and along fencerows. This plant has been found in similar habitats in eastern and southeastern Iowa and is an indicator of native prairies and savannas (Widrechner 1998). Despite descriptions to the contrary, *Rubus missouricus* is not a tip-rooting species (Widrechner 1998), one that is now known to occur as far east as Ohio.

72) **RUBUS PLICATIFOLIUS** Blanchard (Rosaceae) – plaitleaf dewberry. **Adams Co.:** Tiffin Twp., frequent in old field, Ohio Brush Creek Swirl Preserve, 17 May 2000, *Gardner 3051 & McCarty*

(OS). **Cuyahoga Co.:** Disturbed land N of Ridgewood Drive, ½ mi. W of the entrance road from Ridgewood Drive into West Creek Preserve, Parma, 27 Jun 2000, *Wilder & McCombs 13737* (SWF – two sheets). **Fulton Co.:** 8 Jul 1951, *Davis & Davis 9403* (MIL). **Geauga Co.:** Bainbridge Twp., roadside, Route 306 at Pettibone Rd., 5 Jul 1959, *Herrick s.n.* (OS). **Huron Co.:** Townsend Twp., on N.Y.C. RR track 3 mi. W of Wakeman, 18 Jul 1965, *Jones s.n.* (OS – two sheets). **Portage Co.:** Franklin Twp., roadside, Route 162, city of Kent, 6 Jul 1959, *Herrick s.n.* (OS); SW ¼ Deerfield Twp., locally common species growing within small canopy opening on SE side of grassy access lane, Dog Training Grounds/Public Hunting Area, Berlin Lake Wildlife Area, 13 Jun 2015, *Riley 3310* (OS – three sheets); *ibid*, 26 Jun 2015, *Riley 3311* (OS – five sheets); NE ¼ Charlestown Twp., small, local bramble growing on open, well-drained site along edge of woody brush on S side of range, Camp Ravenna Joint Military Training Center, 20 Jul 2018, *Riley 4232* (OS – four sheets).

*Rubus plicatifolius* is widely distributed from Iowa and Minnesota, east to Maine and southeastern Pennsylvania (Widrechner 1998). This species is believed to be abundant throughout Ohio and should be sought in dry, open, somewhat disturbed areas and successional fields. The Cuyahoga County collection was originally reported by Wilder and McCombs (2002) as *Rubus recurvicaulis* Blanchard, based on Gleason and Cronquist (1991), who treated *Rubus plicatifolius* as a synonym of *Rubus recurvicaulis*.

73) **RUBUS RECURVANS** Blanchard (Rosaceae) – recurved blackberry. **Fulton Co.:** 8 Jul 1951, *Davis & Davis 9404* (MIL); *ibid*, 5 Jul 1962, *Fuller & Fuller F-62-13* (MIL). **Huron Co.:** 3 Jul 1949, *Davis & Davis 8769* (CM). **Ottawa Co.:** 23 Jun 1947, *Gordon 47-3* (BH); 23 Jun 1947, *Gordon 47-4* (BH). **Portage Co.:** SE ¼ Shalersville Twp., large, local population growing on open, well-drained, mesic site, Morgan Preserve, 23 Jul 2013, *Riley 2812* (OS – two sheets); *ibid*, 24 Jul 2013, *Riley 2813* (OS); *ibid*, 18 Jun 2015, *Riley 3312* (OS – four sheets). **Wayne Co.:** NW of Wooster on top of bank along Ohio 302, 5 Jul 1957, *Davis & Davis 11863* (CM).

In his distribution map, Widrechner (1998) included Fulton and Ottawa Counties as having a confirmed collection of this species. Kartesz (2015) also cited Ottawa County, and also included Darke and Wayne Counties in the state distribution of this species. While we have recently verified the Wayne County record, we discovered that the Darke County record cited by Kartesz was based on Braun's (1961) acceptance of an incorrect identification.

74) **RUBUS RORIBACCUS** (L.H. Bailey) Rydb. (Rosaceae) – Lucretia dewberry. **Portage Co.:** SE ¼ Ravenna Twp., small, local population growing on dry, W-facing slope within mature, upland oak woods, Havre Woods Park, Ravenna, 4 Jul 2013, *Riley 2828* (OS – two sheets); *ibid*, 25 Jul 2013, *Riley 2829* (OS – three sheets); SW ¼ Windham Twp., locally abundant, large population on W edge of canopy opening within mature, rich, mesic sugar maple woods, Camp Ravenna Joint Military Training Center, 7 Jul 2015, *Riley 3292* (OS – six sheets); SW ¼ Windham Twp., locally abundant, large population growing in open, young successional brushy area on E side of abandoned RR lane, Camp Ravenna Joint Military Training Center, 9 Jul 2015, *Riley 3293* (OS – two sheets), *3294* (ISC – two sheets); *ibid*, 28 Jul 2015, *Riley 3295* (OS – three sheets).

Cooperrider et al. (2001) treated this species as a synonym of *Rubus flagellaris*, both of which lack stipitate glands on the pedicels. Given the widespread general habitat in which this species occurs, it is likely much more common throughout Ohio than these few records indicate.

75) **RUBUS ROSA** L.H. Bailey [syn. **RUBUS ERIENSIS** L.H. Bailey] (Rosaceae) – rose blackberry. **Erie Co.:** Near Hummel’s Pond, Kelleys Island, 26 Jun 1947, *Gordon 47-5* (OS – two sheets). **Ottawa Co.:** Put-In-Bay Twp., South Bass Island, Lighthouse Point, canes arching to upright, in dense *Rhus typhina* thickets and along edge of road, 16 Jul 1970, *Duncan 1227* (OS).

Bailey’s holotype of *Rubus eriensis* was collected in Ottawa County and is located at BH. Widrlechner (1998) examined this specimen and determined it to be synonymous with *Rubus rosa*.

76) **RUBUS SATIS** L.H. Bailey (Rosaceae) – ample dewberry. **Ashtabula Co.:** Kingsville Twp., uncommon and local, growing on N edge of mesic woods near ledge of steep bluff high above Lake Erie, Sunset Park, North Kingsville, 23 May 2015, *Riley 3313 & Beechey* (OS); *ibid*, 25 May 2015, *Riley 3314 & Beechey* (OS – three sheets); *ibid*, 5 Jul 2015, *Riley 3315 & Beechey* (OS – six sheets). **Ross Co.:** Along Seney Road, Camp Sherman, Chillicothe, 27 May 2005, *Godec CS035* (MU). **Seneca Co.:** Thompson Twp., 4 mi. W of Flat Rock, 13 Jun 1969, *Jones 69-6-13-498* (MU).

According to Widrlechner (1998), the range of this large, mounding dewberry extends from the Atlantic Coast west to eastern Minnesota, Iowa, and Missouri. Because of the “generic appearance” of this large, mounding non-glandular dewberry, the diverse habitats in which it occurs, and the fact that Ohio is situated in the middle of its rather large distribution range, this species is likely more common than these few records might suggest.

77) **RUBUS SEMISETOSUS** Blanch. (Rosaceae) – swamp blackberry. **Lucas Co.:** Swanton Twp., section 33, common, sand barrens, Oak Openings Park, 28 Jun 1982, *Cusick 21734* (OS); Monclova Twp., section 11, floricanes low & arching, but not tip-rooting, common, sandy opening, Toledo Express Airport, 13 Jun 1989, *Cusick 28181* (OS); dry open sand, Oak Openings MetroPark, 18 Jul 2015, *Boone s.n. & Walters* (MU); Pin oak forest with open to shrubby understory, Kitty Todd Preserve, Mancy Tract (TNC), 17 Jun 1995, *Walters 1995:079* (CLM).

Despite rather significant morphological differences, Alice et al. (2014) treated this softly pubescent member of section *Setosi* in synonymy with *Rubus setosus* Bigelow. At the western edge of its native range in Iowa and Minnesota (Widrlechner 1998; Widrlechner & Smith 2008), *Rubus semisetosus* is quite rare, restricted to relatively undisturbed sedge meadows, acidic prairies, and sandy savannas, typically on sites with high water tables. In Ohio, we suspect that it may be restricted to sandy oak openings near Toledo.

78) **RUBUS SERISSIMUS** L.H. Bailey (Rosaceae) – everbearing blackberry. **Butler Co.:** Roadside and edge of pond, Windisch Road, south of Allen Road, 27 Aug 2015, *Boone s.n.* (MU – two sheets); large colony of robust plants to about 6 feet tall, canes arching, at edge of pond on W side of road, Windisch Rd., S of West Chester, 1 Aug 2017, *Vincent 17697* (ISC – three sheets, MU – three sheets).

Sometimes treated in synonymy with *Rubus pascuus* L.H. Bailey, this species likely originated under cultivation, with many of the typical characteristics of Old-World blackberries, and may actually be a stabilized hybrid between a European and a North American species (Alice et al. 2014; Widrlechner 2013). We view it as an invasive threat. Recent discussions with local field botanists indicate that its range is spreading rapidly in Kansas and Missouri.

79) **RUBUS STEELEI** L.H. Bailey (Rosaceae) – Steele’s dewberry. **Fulton Co.:** Swan Creek Twp., section 35, locally common species growing in abundance in open areas on dry, sandy soil, Windbreak Arboretum, Maumee State Forest, 23 Jul 2016, *Riley 3625* (OS – two sheets), *3626* (ISC – three sheets). **Holmes Co.:** Prairie Twp., section 15, frequent in RR ballast near TR 346, 15 Jun 1971, *Wilson 1788* (OS). **Mahoning Co.:** NW ¼ Milton Twp., small, local fruiting population located on wet-muddy soil at public fishing access site on N side of Lake Milton Tributary, Lake Milton Public Hunting & Fishing Area, 5 Sep 2014, *Riley 3047* (OS – four sheets). **Portage Co.:** NW ¼ Charlestown Twp., small, local population growing on E edge of West Perimeter Rd. on dry-somewhat moist site, roadside above W edge of large, open swamp, Camp Ravenna Joint Military Training Center, 3 Sep 2015, *Riley 3316* (ISC – three sheets); *ibid*, 13 Jul 2016, *Riley 3627* (OS – four sheets). **Ross Co.:** Scioto Twp., SW of Chillicothe, between Paint Creek and Alum Cliff Rd., Buzzard’s Roost, 16 Jun 2004, *Vincent 11731 et al.* (MU). **Summit Co.:** south central Green Twp., S end of Singer Lake, just E of dam, 31 May 1979, *Andreas 3564* (MU). **Trumbull Co.:** Braceville Twp., Erie RR embankment, 14 Jun 1950, *A.N. Rood 2499* (KE); east central Braceville Twp., local population growing on dry, open, disturbed site (soil pile) on N side of gravel parking lot, LaBrae Athletic Club, Warren, 28 Aug 2015, *Riley 3317* (OS – two sheets). **Wood Co.:** Weston Twp., section 25, canes tip-rooting, prostrate, cinders on RR embankment, 20 May 1987, *Cusick 26413* (OS).

Though Widrlechner (1998) did not map a single county record of this species for Ohio, *Rubus steelei* has an extensive native range, from northeastern Texas to the Atlantic Coast, north to northern Minnesota and south to Alabama and Georgia. The habitats in which this glandless species occurs are diverse and abundant (Widrlechner 2013). Where it occurs in Ohio, this slender dewberry is rather weedy in habit.

80) **RUBUS TRIVIALIS** Michx. (Rosaceae) – southern dewberry. **Clermont Co.:** Over 100 plants, some flowering, on bank of Ohio River near boat ramp, Steamboat Bend Park, 22 Jun 2005, *Boone s.n.* (ISC, MICH, OS); growing on the rocky edge of the boat ramp and along the bank of the Ohio River, Woodland Mound Park, 11 Jun 2006, *Becus 61106* (OS); extreme W-SW corner of Pierce Twp., large population growing on NE bank of Ohio River, Woodland Mound Park, 7 Jul 2007, *Riley 771 & Boone* (MU), *772* (OS); *ibid*, 14 Jul 2007, *Riley 773* (OS), *774* (MU).

Braun (1961) cited her own voucher from Hamilton County, which was collected on 18 Oct 1916 from dry fields at Ellenora (Mt. Washington) and is housed at CINC. After a very long gap, this dewberry, which is very common in the southern US (Kartesz 2015), was rediscovered in Ohio by Dan Boone in 2004 along the Ohio River in neighboring Clermont County, not far from the Hamilton County line. Since 2016, *Rubus trivialis* has been listed in Ohio as State Endangered (ODNR 2018).

81) ***RUBUS ULMIFOLIUS*** Schott var. ***ANOPLOTHYRSUS*** Sudre (Rosaceae) – thornless elmleaf blackberry. **Hamilton Co.:** Growing in the edge of a woods, could be remnants of an old berry garden, east of Harrison, south of Harrison Avenue, 18 Jul 2008, *Boone s.n.* (ISC – two sheets).

The occurrence of *Rubus ulmifolius* in North America was treated by Alice et al. (2014), who give its current range as Washington, Oregon, California, and Nevada in the western USA. In contrast, within the eastern USA, it had only been reported from New Jersey, where it has not been collected since 1897 (Alice et al. 2014). Additional modern collection of var. *anoplothysus* [or more likely of horticultural cultivars derived from var. *anoplothysus* (Scott & Ink 1966; Clark & Finn 2008)] from eastern North America include *S. Ross 636*, 1 Jul 2000 from Mecosta County, Michigan (MICH) and *J.W. Johnson s.n.*, 13 Jun 2010 from Bruce County, Ontario (MICH).

82) ***RUBUS ULMIFOLIUS*** Schott × ***RUBUS*** ? (Rosaceae) – hybrid blackberry. **Portage Co.:** SE ¼ Windham Twp., small, local, escaped, low-arching, sterile population with tip-rooting primocanes growing on dry, open, grassy site and on slag ballast along E edge of RR tracks near SE side of East Class Yard, Camp Ravenna Joint Military Training Center, 14 Sep 2016, *Riley 3609* (OS – two sheets), *3610* (ISC – three sheets); *ibid*, 6 Jul 2018, *Riley 4237* (ISC – three sheets); *ibid*, 20 Jul 2018, *Riley 4238* (OS – four sheets); *ibid*, 8 Aug 2018, *Riley 4239* (ISC).

This sterile *Rubus ulmifolius* hybrid is a bit of a mystery – a mystery as to how it became established at this site and what the other parent may be. Pictures of this glandless taxa reviewed by Dr. Abraham “Bram” van de Beek (Leiden University), as well as specimens examined by co-author Widrlechner, lead them to believe that the diploid *Rubus ulmifolius* is clearly represented in this cross, but what the other parent is remains unknown. It was noted by Widrlechner that the narrow panicles of the inflorescences displayed in the 2018 vouchers are very suggestive of series *Vestiti* (Focke) Focke and not that of any North American species found in the region. Given this characteristic, along with its lack of stem hardiness within USDA hardiness zone 6 (USDA, ARS 2012) and its tip-rooting habit, this hybrid would most likely be classified within series *Vestiti*, adding even greater uncertainty as to its origin at this site.

83) ***RUBUS WHEELERI*** L.H. Bailey (Rosaceae) – Wheeler’s bristleberry. **Portage Co.:** NW ¼ Paris Twp., rare, within shallow, seasonally wet depression on S edge of medium-aged, mesic woods, Camp Ravenna Joint Military Training Center, Ravenna, 9 Jun 2017, *Riley 3989* (OS); *ibid*, 3 Jul 2017, *Riley 3990* (OS – three sheets), *3991* (ISC – four sheets); *ibid*, 14 Jul 2017, *Riley 3992* (OS – four sheets); NE ¼ Paris Twp., small population within seasonally wet area, Camp Ravenna Joint Military Training Center, Ravenna, 3 Aug 2017, *Riley 3993* (KE – four sheets); NE ¼ Paris Twp., local, growing on moist, open site, Camp Ravenna Joint Military Training Center, 10 Aug 2018, *Riley 4236* (OS – three sheets). **Trumbull Co.:** SW ¼ Braceville Twp., local, growing on N edge of medium-aged, mesic-wet mesic pin oak flatwoods, Camp Ravenna Joint Military Training Center, 5 Jul 2017, *Riley – 3994* (OS – two sheets), *3995* (ISC – two sheets); *ibid*, 12 Jul 2017, *Riley 3996* (OS – two sheets), *3997* (ISC – two sheets); *ibid*, 13 Jul 2017, *Riley 3998* (KE – four sheets); *ibid*, 8 Aug 2017, *Riley 3999* (CM – four sheets), *4000* (CLM – four sheets).

*Rubus wheeleri* was first discovered in Ohio by Riley in 2017 at the Camp Ravenna Joint Military Training Center in Portage and Trumbull Counties. While it is a bit too early to comment on



its status in Ohio, it can be noted that, to date, *Rubus wheeleri* has only been found at four different sites, each along the edge of a young to medium-aged, mesic woods on somewhat poorly-drained soil. Variation for prickly density and presence of stipitate glands in these Ohio collections is somewhat greater than that reported for this taxon in Minnesota by Widrlechner and Smith (2008).

84) ***SCHOENOPLECTIELLA HALLII*** (A. Gray) Lye (Cyperaceae) – Hall’s bulrush. **Pickaway Co.:** Circleville Twp., section 32, one plant in wet depression of agricultural field, Bartley Preserve, Circleville, 7 Aug 2011, *Boone 8-7-1230-11* (MO).

This obligate wetland sedge was recently discovered by Dan Boone in a prairie pothole wetland near Circleville, which happens also to be the only site in Ohio where its congener, *Schoenoplectiella saximontana* (Fern.) Lye occurs. As proposed by Smith and McKenzie (2011), *Schoenoplectiella hallii* is currently being reviewed for possible listing under the Endangered Species Act and has been designated as a Federal Species of Concern by the US Fish & Wildlife Service.

85) ***SIDERITIS MONTANA*** L. (Lamiaceae) – mountain ironwort. **Portage Co.:** Windham Twp., large, local, weedy population growing among slag ballast along E edge of RR tracks where plants receive full sunlight, Camp Ravenna Joint Military Training Center, 5 Jul 2017, *Riley 4016* (OS), *4017* (KE), *4018* (CLM); *ibid*, 7 Jul 2017, *Riley 4019* (OS), *4020* (MU), *4021* (CM), *4022* (BHO), *4023* (MICH).

*Sideritis montana* is “native in the region from southwestern Europe to Pakistan, including northern Africa. It rarely turns up in North America.” (Go Botany 2018). According to Kartesz (2015) and Go Botany (2018), this annual has only been collected in one county in each of the following states: Arkansas (Fulton Co.), Connecticut (New Haven Co.), Nebraska (Dawes Co.), and South Dakota (Pennington Co.). We suspect that the Portage County population may have arrived on military vehicles returning from the Middle East.

## SECTION II. DELETIONS

### State Records

The following species have recently been determined to be non-native or never to have occurred in Ohio by the Ohio Rare Plants Advisory Committee, and/or by the authors of this paper based on specimen research, literature review, and consultation. Thus, the following species should be deleted from the Ohio flora for the reasons indicated below:

***CASTANEA PUMILA*** (L.) Miller (Fagaceae) – dwarf chinquapin. A specimen at OS was collected by Floyd Bartley on 31 May 1953 from what was in all likelihood a cultivated plant near an old homesite not far from the Ohio River in Adams County. The label states that the sample was “collected in an open field 1 mi. S of Sandy Springs”. The card catalog of Dr. E. Lucy Braun at OS includes a slip with information on a duplicate specimen housed at BHO. Efforts in 2018 by Dr. Harvey Ballard to locate this specimen were unsuccessful. No other herbaria searched in preparation of this paper have collections of *Castanea pumila* from outside of cultivation.

**CRATAEGUS BRAINERDII** Sargent (Rosaceae) – Brainerd’s hawthorn. No valid specimen; all putative Ohio specimens were annotated in 2015 by Dr. James B. Phipps and Allison W. Cusick as not being *Crataegus brainerdii*. Ohio was not included within this species’ range by Phipps (2014).

**CRATAEGUS CHRYSOCARPA** Ashe (Rosaceae) – fireberry hawthorn. This species was included as a native component of the Ohio flora in Cooperrider et al. (2001), but no valid, proof-positive specimen from within the state is known to exist. For this reason, Ohio was not included within this species’ range by Phipps (2014). Some Ohio specimens of *Crataegus margarettae* Ashe and *Crataegus populnea* Ashe have historically been erroneously labeled as *Crataegus chrysocarpa*.

**HALESIA CAROLINA** L. (Styracaceae) – Carolina silverbell. Believed to have been collected from cultivation near New Boston, Porter Twp., Scioto County – based upon a vague label on a 1929 specimen at OS. A single, sterile specimen collected in Pike County in 1964 (also at OS) was later determined to be *Diospyros virginiana*. *Halesia carolina* has been planted ornamentally since the 1700s and is frequently cultivated in Ohio (Cooperrider 1995).

**MALUS ANGUSTIFOLIA** (Aiton) Michx. (Rosaceae) – narrowleaf crabapple. No convincing specimen with flowering or fruiting material is known to exist. Of the four Ohio counties from which this species was reported by Kartesz (2015), including Adams, Fairfield, Hocking, and Wayne, most putative specimens from these counties have been determined as *Malus coronaria* (L.) Mill. var. *lancifolia* (Rehder) C.F. Reed.

**POPULUS DELTOIDES** W. Bartram ex Marsh. var. **OCCIDENTALIS** Rydb. (Salicaceae) – plains cottonwood. No specimen. This taxonomic variety, reported from Ohio in Cooperrider et al. (2001), was reclassified by J.E. Eckenwalder (1977) as a synonym of *Populus deltoides* subsp. *monilifera* (Ait.) Eckenwalder.

**RUBUS ORARIUS** Blanch. (Rosaceae) – highbush blackberry, northern blackberry. It was included as native to the Ohio flora in Cooperrider et al. (2001), but no valid specimen from Ohio exists to support this claim. As discussed in Davis et al. (1969), *Rubus orarius* is only known from Hancock, Penobscot, and York Counties in coastal Maine. Fernald (1950) included it in synonymy with *Rubus pensilvanicus* Poir., although Davis et al. (1969) contended that it may be more closely aligned with section *Canadenses* (L.H. Bailey) L.H. Bailey than with section *Arguti* due to its rather glabrous leaf characteristics and prickles being few and short.

**RUBUS RECURVICAULIS** Blanch. (Rosaceae) – arching blackberry. Collected in Cuyahoga County and reported as new to Ohio by Wilder and McCombs (2002) following the taxonomic treatment of Gleason and Cronquist (1991), Widrlechner’s recent examination of this specimen housed at SWF determined it to be *Rubus plicatifolius* (see Section I). As such, no valid records of *Rubus recurvicaulis* are known from Ohio.

**RUBUS SETOSUS** Bigelow (Rosaceae) – setose blackberry. No valid specimen. Cooperrider et al. (2001) included it based on two misidentified specimens at KE from Fulton and Trumbull Counties, which were later determined to be *Rubus hispidus* (Cusick 11891) and *Rubus densissimus* (Rood 2291 & 2467), respectively. Two interesting specimens from NASA Plum Brook Station in Erie County were collected in 1994: *Cusick 31745* (KE, OS) and *Cusick 31847* (OS). In 2002, Widrlechner

annotated these specimens, stating that they “fall within the range of variation of *Rubus* section *Setosi*, yet do not conform to the characteristics of described taxa. Perhaps they represent responses to repeated cutting or grazing”. It is unknown to the authors if additional collections were made at this site, and if so, where they may be. Based on these notes and observations from 30 years of studying North American *Rubus*, it is clear that *Rubus setosus* is not a very common plant – one that is only known to occur east of Ohio.

**STYRAX AMERICANUS** Lam. (Styracaceae) – American snowbell. The erroneous Pike County, Ohio report cited by Kartesz (2015) is derived from Cooperrider (1995), which is based on a label mix-up for a specimen collected in North Carolina in 1965 by C.S. Johnson (148), a graduate student at the time. In 2002, the Ohio Rare Plant Advisory Committee discovered that this voucher, housed at NCU, was collected at Chimney Rock (presumably Chimney Rock State Park), North Carolina, and not at Chimney Rocks, Ohio, located in Pike County.

### County Records

The following entries are miscellaneous county reports which are now known to be based on incorrectly identified specimens collected in the county(ies) identified in bold font for each respective species. These incorrectly identified specimens are included here in addition to those previously mentioned throughout this article. The determination of each was made by one or more of the authors of this paper based on specimen research, literature review, and consultation. Thus, the following species should be deleted from the respective county or counties indicated next to each:

**CAREX HAYDENII** Dewey (Cyperaceae) – Hayden’s sedge. **Erie, Henry, Lorain, Lucas, Muskingum, and Trumbull Co.:** Aside from the introduced and naturalized collections found in Cuyahoga County referenced in Section I, all other Ohio material, labeled as such from each of the six aforementioned counties reported by Kartesz (2015), has recently been determined to be *Carex stricta* Lam. by either Dr. A.A. Reznicek or R.L. Gardner. This species is not known to naturally occur in Ohio and was therefore removed from the state’s rare plant list in 2018.

**CRATAEGUS COMPACTA** Sargent (Rosaceae) – Thames hawthorn, clustered hawthorn. **Brown, Delaware, Franklin, Jackson, Lake, and Ross Co.:** Palmer (1956) reported Ohio collections from these six counties, however, once relocated, it was found that these specimens are not *Crataegus compacta*. Based on Palmer’s article, Braun (1961) and Phipps (2014) included Ohio within the range of this species, and it is most likely the reason why Lance (2014) did as well.

**CRATAEGUS PENNSYLVANICA** Ashe (Rosaceae) – Pennsylvania hawthorn. **Clinton, Cuyahoga, and Franklin Co.:** Palmer (1956) and Braun (1961) reported this species from these three widely scattered counties. The specimens upon which these reports are based were found to be misidentified and have since been correctly annotated or, as is all too often the case with *Crataegus* vouchers, lack sufficient material to make a positive identification. In an April 2016 email correspondence with Mr. John Guccion, whose personal collection is cited in Braun (1961), he noted that he sent three sterile specimens (*J.G. Guccion 8-10*) from East Cleveland in Cuyahoga County to Dr. Ernest J. Palmer in 1953 for identification. In his response letter to Mr. Guccion, Dr. Palmer determined the sterile material to be *Crataegus pennsylvanica* but included a “?” next to his annotation due to the degree of his own uncertainty, adding “But fruit or flowers should be seen to make the determination certain.” Dr. Palmer

did not return the samples to Mr. Guccion. Due to the absence of any other confirmed specimens, in Ohio, *Crataegus pennsylvanica* is currently only known to occur in Portage County. See entry in Section I.

**CRATAEGUS SUBORBICULATA** Sargent (Rosaceae) – Caughuawaga hawthorn. **Fairfield, Franklin, Lake, Ottawa, and Tuscarawas Co.:** E.L. Braun made an entry on an index card at OS of a specimen of *Crataegus suborbiculata* at the Horsey Herbarium collected in Ottawa County and determined as such by Dr. E.J. Palmer. There is some uncertainty over exactly where this collection was made, given that the index card reads Ottawa County, yet explicitly states that the specimen is from Toledo (in Lucas County). No other information about this collection is given and as such, extensive efforts to locate and verify it have been unsuccessful. Therefore, it is assumed that it has either found its way into another collection or, most likely, has since been reidentified and annotated as a morphologically similar taxon. As for the collections from Fairfield, Franklin, Lake, and Tuscarawas Counties reported by Kartesz (2015), the specimens upon which this information is based were labeled as *Crataegus kellermanii* Sarg., which is now regarded an interserial hybrid between *Crataegus pruinosa* (Wendl.) K. Koch. and *Crataegus punctata* Jacq. (Phipps 2014). For this reason, *Crataegus* ×*kellermanii* Sarg. is not to be treated as synonymous with *Crataegus suborbiculata*. However, based on our examination of these vouchers, they appear to represent one of the four recognized varieties of *Crataegus pruinosa* known to occur in Ohio. Due to the apparent absence of valid specimens upon which all prior reports were based, we agree with Phipps (2014) that, at that time, *Crataegus suborbiculata* was not known to occur anywhere in Ohio. See entry in Section I regarding the only verified collections of this species from Ohio, discovered in Portage County in 2016.

**PRUNUS NIGRA** Aiton (Rosaceae) – Canada plum. **Cuyahoga, Geauga, and Lawrence Co.:** While native to Ohio based on verified specimens from Lucas and Wood Counties, this state-endangered species has not been found to occur in any other county in Ohio. Braun (1961) reports an occurrence of *Prunus nigra* from Lawrence County based on a misidentified, unnumbered, sterile specimen collected by Floyd Bartley (OS) at Table Rock on 10 Jun 1951. Without question, this particular specimen is that of *Prunus avium* (L.) L., not *Prunus nigra*. In addition, Kartesz (2015) included Cuyahoga and Geauga Counties within the distribution of *Prunus nigra*. The specimens upon which this report is based are also incorrectly identified. *Prunus avium*, or sweet cherry, has been widely cultivated for centuries in North America for its delectable, fleshy fruits which are also sought after by wildlife, especially birds. For these reasons, *Prunus avium* can most likely be found as an escape in each of Ohio’s 88 counties.

**QUERCUS FALCATA** Michx. (Fagaceae) – southern red oak. **Adams Co.:** Occurrence originally reported by Braun (1961) based on an unnumbered collection dated 6 Apr 1959 (OS) from “sandy soil, Ohio River terrace” in Sandy Springs, located in southeastern Adams County. The site at which this collection was made is at or adjacent to Sandy Springs Cemetery located on US Rte. 52 – a site very well known for its botanical diversity. Braun’s specimen lacks key diagnostic characteristics of *Quercus falcata*. For instance, the mature leaves, though falcate, lack pubescence on the abaxial surface except for small hairy tufts in the vein axils. Furthermore, the buds on the dormant twigs included with Braun’s specimen are large and very pubescent. Today, this area contains numerous, mature specimens of *Quercus velutina*, and not a single *Quercus falcata* has been found in this botanically well-explored area since Braun’s collection. Based on the intermediate characteristics of Braun’s specimen from

Adams County, it has been determined to be *Quercus ×willdenowiana* (Dippel) Zabel. In Ohio, native populations of *Quercus falcata*, a state threatened species, are only known from Gallia, Jackson, Lawrence, and Scioto Counties. In addition to Adams, *Quercus ×willdenowiana* has been collected from Jackson and Scioto Counties (Vincent et al. 2011).

**RUBUS ALUMNUS** L.H. Bailey [syn. **RUBUS COREI** L.H. Bailey] (Rosaceae) – oldfield blackberry. **Monroe Co.:** Braun (1961) reported a specimen from Monroe County; however, this specimen (OS Accession 20248) was annotated as *Rubus allegheniensis* Porter by co-author Widrlechner in 2000.

**RUBUS ARGUTUS** Link (Rosaceae) – sawtooth blackberry, southern blackberry. **Lake and Trumbull Co.:** Kartesz (2015) reported occurrences of this southern species from Lake and Trumbull Counties. The Trumbull County record is based on a 10 Aug 1947 collection by Almon N. Rood who gathered a sample that he erroneously labeled as *Rubus argutus*. This voucher, which was recently verified as *Rubus densissimus*, resides at KE. The basis of the Lake County record, however, is unknown as no such specimens from said county have been seen or verified by the authors. Given the absence of accurately identified material and the unlikelihood of this species occurring as far north as northeastern Ohio, this report cannot be verified or accepted.

It is worth mentioning that Braun’s index catalog at OS noted two specimens collected in 1934 from Scioto County housed at BUT. One specimen collected on 14 May gives the location as “Copperhead Fire Tower, Shawnee State Forest,” while the other collected on 19 May states “1 mi. W of Otway.” After relocating these specimens, which sampled only floricanes, we could determine neither of them beyond section *Arguti*. Consistent with our findings, Braun (1961) did not recognize the legitimacy of these records as *Rubus argutus* and simply indicated “no specimens.”

**RUBUS CANADENSIS** L. (Rosaceae) – Canadian blackberry, smooth blackberry. **Mahoning Co.:** Cooperrider et al. (2001) included this eglandular species as native to the Ohio flora, while Kartesz (2015) reported collections from three Ohio counties including Cuyahoga, Lake, and Mahoning. In preparation for this paper, the authors tracked down the specimens upon which these reports were based and found all three to be incorrectly identified. The Cuyahoga and Lake County specimens, both housed at CLM, were determined to resemble *Rubus plicatifolius* although their true identity cannot be fully verified due to incomplete material. The Mahoning County voucher, which only includes floricanes material, appears to be that of either *Rubus aboriginum* or *Rubus roribaccus*. This collection also resides at the Herbarium of Cleveland Metroparks. See entry in Section I for details concerning verified collections of *Rubus canadensis* made in 2019 from Cuyahoga and Lake Counties.

**RUBUS RORIBACCUS** (L.H. Bailey) Rydb. (Rosaceae) – Lucretia dewberry. **Erie and Highland Co.:** Kartesz (2015) included Highland County in the statewide distribution of this species, which is based on what appears to be an error in Cusick & Silberhorn (1977), who cite a Highland County (abbreviated therein as “HI”) collection of *Rubus roribaccus*, adding “one record, reported by Braun (1961)” when in fact the only *Rubus roribaccus* specimen cited by Braun (1961) is from Erie County – not Highland County. In addition, no complete or positively identifiable collections of *Rubus roribaccus* from Highland County were found while searching for valid records to reference in Section I. The Erie County specimen mentioned by Braun is reported to be at OS (Accession 20283) and was collected in Sandusky on 31 May 190?. Widrlechner determined it to be *Rubus meracus*, while two

1895 collections from Erie County (*W.A. Kellerman s.n.*) and (*E.L. Mosley s.n.*) housed at OS lack sufficient material from which a positive identification could be made. Due to the incorrect identification of the former two specimens and the questionable determinations of the 1895 specimens (based on incomplete material), Widrlechner (1998) did not report a single county occurrence for Ohio. Included within *Rubus roribaccus* is *Rubus michiganensis* (Card ex L.H. Bailey) L.H. Bailey, a name which has been applied in a confusing manner. According to Widrlechner (1998), the type specimen of *Rubus michiganensis* fits within the range of variation of *Rubus roribaccus*. However, many other collections that Bailey considered to be *Rubus michiganensis* were actually *Rubus curtipes*. Kartesz (2015) mapped Huron and Wayne Counties for *Rubus michiganensis*. However, we have determined that specimens housed at CM that served as the basis for those county records were misidentified.

**RUBUS TRIVIALIS** Michx. (Rosaceae) – southern dewberry. **Geauga Co.:** Kartesz (2015) cited a collection from Geauga County, yet no voucher was ever found to substantiate this report. Upon looking into this questionable matter, Widrlechner learned that the basis for this citation is an unpublished manuscript on the Flora of Ohio written in 1991 by Dr. John J. Furlow. Due to absence of a valid specimen, we do not accept any reports of this species having been collected from or present in Geauga County.

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