

## **NEW AND NOTEWORTHY VASCULAR PLANT RECORDS FOR ALABAMA**

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### ABSTRACT

Ten non-native species (*Achyranthes japonica* var. *hachijoensis*, *Atocion armeria*, *Citrullus amarus*, *Cuscuta japonica*, *Cymbalaria muralis*, *Dioscorea alata*, *Grindelia ciliata*, *Odontonema cuspidatum*, *Paederia foetida*, and *Parentucellia viscosa*), four native species (*Clematis versicolor*, *Heteranthera multiflora*, *Pellaea glabella*, and *Quercus xbeadleii*), five historic or uncommon species (*Asplenium ruta-muraria* var. *cryptolepis*, *Erigeron divaricatus*, *Philadelphus pubescens*, *Triglochin striata*, and *Wolffiella gladiata*), plus two varieties (*Paronychia erecta* var. *erecta* and *Vernonia angustifolia* var. *angustifolia*) of vascular plants are reported here as new to Alabama. A collection made in 2015 confirms the presence of *Erigeron divaricatus* in the state (previously known collections were prior to 1905). Similarly, *Asplenium ruta-muraria* var. *cryptolepis* was recently collected from multiple sites in two Alabama counties (last collected in 1877).

During the course of routine plant surveys extending to all portions of the state, 21 new/noteworthy records were collected. Each taxon is detailed in the write-up below. Species non-native (to Alabama) are designated with a dagger (†). Determination of nativity and state record status was ascertained by using the Alabama Plant Atlas (APA 2019), BONAP-Synthesis (Kartesz 2019), NatureServe (NatureServe 2019), SERNEC Data Portal (SERNEC 2019), the Flora of Southern and Mid-Atlantic States (Weakley 2015/pers. comm.), the Atlas of Georgia Plants (Zomlefer et al. 2019), and literature searches. Vouchered specimens are deposited in the Alabama Natural Heritage Section Heritage Herbarium (ALNHS), the Auburn University Herbarium (AUA), the University of West Alabama Herbarium (UWAL), and the Anniston Museum of Natural History Herbarium (AMAL). Exact plant locations are withheld due to the sensitive nature of the plant populations described and/or special permissions required for access to the sites.

**ACHYRANTHES JAPONICA** (Miq.) Nakai var. **HACHIJOENSIS** Honda (†) Japanese Chaff-flower (Amaranthaceae)

Vouchers. **Alabama.** Limestone Co.: Along edge of woods and roadside, at boat launch area leading to Elk River, 22 Jun 2015, *Barger and Taylor SP#1777* (ALNHS3256); low woods/floodplain along Elk River, N of Gipsy, 16 Aug 2015, *Spaulding DDS14,403* (UWAL34194). STATE RECORD.

*Achyranthes japonica* var. *hachijoensis* is the only extant *Achyranthes* species known from Alabama. Historic records of *Achyranthes aspera* L. were collected by Charles Mohr as waifs (collections determined by S. Ginzburg and held at UNA) in 1892 from Mobile County, Ala, but are considered extirpated. Japanese Chaff-flower is considered highly invasive, commonly inhabiting moist floodplain soils, often with partial shading. Outside of the extensive populations that exist along the Ohio River (SERNEC 2019), only collections from three counties in both Georgia and Tennessee were known prior to these Limestone County, Ala, collections. Purported collections were made from Limestone County previously by Leon Bates, but searches to locate collections and attempts to contact the collector were not fruitful.

**ASPENIUM RUTA-MURARIA** L. var. **CRYPTOLEPIS** (Fernald) Wherry American Wall-rue (Aspleniaceae)

Vouchers. **Alabama.** Jackson Co.: In cracks of large limestone boulders in hardwood forest, 1 Jul 2015, *Barger and Taylor HC#620*, (ALNHS3397). Lauderdale Co.: Along steep bluffs of calcareous rocks above Tennessee River, 30 Sep 2015, *Barger and Taylor SP#2042* (ALNHS3484). HISTORIC/UNCOMMON.

American Wall-rue has been considered a historical species for Alabama, with the only known collections (on the same herbarium sheet held at UNA) dating from 1877 by E.A. Smith and a second from 1908 by E.L. Lee. The confusing label for the mixed specimen reads, “Bibb (County) Pratt’s Ferry; on rocks, sandstone; upper districts in mountains and northward to Kentucky; Gadsden, Etowah County; Sipsey Fork, Winston County.” It is unclear which of the ferns, if any, represented on the sheet are from the locations stated. The reference to sandstone on the label is additionally perplexing, as the species usually inhabits calcareous/limestone rocks.

**ATOCION ARMERIA** (L.) Raf. (†) None-so-pretty (Caryophyllaceae)

Voucher. **Alabama.** Calhoun Co.: Through cracks in sidewalk, along Ala Hwy 9 in Piedmont, 14 May 2017, *Spaulding DDS14754* (ALNHS6146). STATE RECORD.

None-so-pretty is a commonly grown, self-seeding garden annual. More often encountered as a waif in the Northeast, this European native has been collected outside of the Blue Ridge only a few times in the southeastern USA. This waif from cracks in a sidewalk is the first collection known for Alabama.

**CITRULLUS AMARUS** Schrad. (†) Stockmelon (Cucurbitaceae)

Voucher. **USA.** **Alabama.** Montgomery Co.: Open pasture, observed for many years before determination, plants avoided by grazing livestock, full sun, 7 Nov 2014 and 28 Jul 2017, *Barger SP#1600* and *SP#3216* (ALNHS4795 and ALNHS5443). STATE RECORD.

This native of southern Africa has been reported from eleven counties in four western USA states (Kartesz 2019); however, this collection marks the first known collection east of the Mississippi River. The population was observed over the course of many years, with the perennial (from a thickened tap-rootstock) producing fruits that maintain a pale to yellowish mesocarp/endocarp when mature. The population spread throughout the pasture area during the course of observation.

**CLEMATIS VERSICOLOR** Small ex Rydb. Pale Leatherflower (Ranunculaceae)

Voucher. **Alabama.** Limestone Co.: Shady woods along high bluff of Elk River, rich hardwoods with mesic soils, 25 May 2012, *Barger SP#2903* (ALNHS4498). STATE RECORD.

Found in several MS and TN counties that border AL, *Clematis versicolor* was not known to occur in the state (APA 2019; Kartesz 2019). This specimen was collected on a high bluff of mesic hardwoods overlooking the Elk River rambling over shrubs/small trees of a fairly dense mid-story. Many stems were encountered; however, flowering specimens were few, likely due to the comparatively dense canopy. An incorrectly identified collection for the taxon had previously been reported from St. Clair County, Ala (Kartesz 2019).

**CUSCUTA JAPONICA** Choisy (†) Japanese Dodder (Convolvulaceae)

Vouchers. **Alabama.** Coosa, Tallapoosa, and Tuscaloosa Cos.: Roadside of highway, full sun; large, high-ramping masses parasitizing *Pueraria montana*, *Ligustrum sinense*, *Albizia julibrissin*, *Lonicera japonica*, and everything else it touched, 1 Jul 2017, *Barger and Barger SP#3223* and *SP#3323* (ALNHS5390 and ALNHS6043); roadside on Kudzu and Chinese Privet, off Mt. Moriah Road south of Vance, 29 Aug 2017, *Spaulding DDS14989* (ALNHS6042). STATE RECORD.

Listed as a Federal Noxious Weed, Japanese dodder is a highly aggressive parasitic plant that can quickly infest areas, and out-compete native flora. Unlike most other members of the genus, this Asian species often completely drapes over and decimates its host to the point of death.

**CYMBALARIA MURALIS** G. Gaertn., B.Mey. & Scherb. (†) Kenilworth Ivy (Plantaginaceae)

Voucher. **Alabama. DeKalb Co.:** Rock wall, stacked slabs of rock cemented with concrete; roadside near Ala Hwy 117 in Valley Head; Wills Valley of Cumberland Plateau, 14 Oct 2018, *Spaulding DDS15,785* (ALNHS6152). STATE RECORD.

Kenilworth Ivy is a European/Asian native that is commonly planted and has naturalized in many parts of the northern USA. This small, herbaceous but intricate-flowered plant is often used as a cover around rock walls.

**DIOSCOREA ALATA** L. (†) Winged Yam (Dioscoreaceae)

Voucher. **Alabama. Baldwin Co.:** E side of Ala Hwy 98 and 4th street, climbing high into trees and over shrubberies, 30 May 2018, *Barger, Nation, and Long SP#4059* (ALNHS6009). STATE RECORD.

Discovered by Fred Nation, this vine produces abundant tubers, covers shrubs, and has the ability to climb high into the canopy. Though not documented from surrounding lots/areas, this location is dominated by the well-established vine. This Asian native was not known to occur in Alabama, but the noxious vine had been documented in neighboring Escambia, Jackson, and Santa Rosa counties, Fla (Kartesz 2019).

**ERIGERON DIVARICATUS** Michx. (SYN = **CONYZA RAMOSISSIMA** Cronquist) Dwarf Horseweed (Asteraceae)

Vouchers. **Alabama. Madison Co.:** St. John Paul II Catholic High School within the Huntsville city limits, sporadic on a small hillside lawn, NW side of property, 6 Aug 2017, *Finzel s.n.* (AMAL). **Madison Co.:** W side of Memorial Parkway, gravelly shaded parking lot, near edges of asphalt and lawn/concrete, 2 Jul 2018, *Barger SP#3982* (ALNHS6057). HISTORIC/UNCOMMON.

*Erigeron divaricatus* was known to occur in Alabama from three historical records (prior to 1905 held at UNC and AUA) and one subsequent collection from Limestone County, Ala, in 2015 (held at APSU). It generally occurs in disturbed clay soils and has now been documented in several other disturbed sites in Madison County along roadways. The combination of small stature, tiny flowers, and sporadic occurrences in disturbed habitats suggest that this plant has either been overlooked or is slowly becoming adventive in this area.

**GRINDELIA CILIATA** (Nutt.) Spreng. (†) Spanish Gold (Asteraceae)

Voucher. **Alabama. Blount Co.:** NE side of Ala Hwy 278; gravel shoulder, just E of Snead, three waif plants observed, samples taken from each, plants were not eradicated, 28 Sep 2016, *Barger and Taylor SP#2778* (ALNHS4500). STATE RECORD.

Native to the southern Great Plains, *Grindelia ciliata* may be becoming increasingly adventive, as indicated by the expanding collections across the upper/eastern plains region. However, outside of a waif collection in Calvert County, Maryland, from 1947 (Benedict *s.n.* US), the only collections from east of the Mississippi appear to be from two Michigan counties and a few scattered Illinois counties (Kartesz 2019). The nearest known collection to this northeastern Alabama collection was from approximately 560 km away in eastern Arkansas.

**HETERANTHERA MULTIFLORA** (Griseb.) C.N.Horn Purple-flowered Mud-plantain (Pontederiaceae)

Voucher. **Alabama.** Jackson Co.: In wet, depression in middle of access roadway; frequently mowed area, open field near tree, 1 Jul 2015, *Barger and Taylor HC#619* (ALNHS3197). STATE RECORD.

At present, the southeastern USA species of *Heteranthera* are under review, with potentially new species to be described. The Alabama populations with the many purple-flowers extending from the spathes match with material from mid-western populations of Kansas and Missouri (Horn, personal communication, 2019). It is possible, once they are reevaluated in the presence of new information, that a new name may eventually be assigned for these plants.

**ODONTONEMA CUSPIDATUM** (Nees) Kuntze (†) Firespike (Acanthaceae)

Voucher. **Alabama.** Mobile Co.: Along edge of wood-line, past the end of dead end Ingleside Drive; edge of USA nature trail property/firebreak, approx. 15 flowering plants, 18 Sep 2018, *Barger SP#4203* (ALNHS6103). STATE RECORD.

Introduced from Mexico and naturalized in several central Florida counties, this marks the first collection for Alabama (APA 2019; Kartesz 2019). Growing along the edge of a nature preserve/trails owned by the University of South Alabama, this species could have been discarded from an adjacent neighborhood; however, the population was definitely naturalized, with many flowering individuals present as well as immature plants.

**PAEDERIA FOETIDA** L. (†) Skunk Vine (Rubiaceae)

Voucher. **Alabama.** Baldwin Co.: Abundant high-climbing vine in remnant wet water oak/pine flatwoods; sandy soils S of sharp curve on Carver Lane, 18 Sep 2018, *Barger, Floyd, and Floyd SP#4196* (ALNHS6136). STATE RECORD.

Discovered by Carl Floyd while clearing private land, a sample was given to Fred Nation for examination/identification. This southeastern Asian species was not known to occur in Alabama, but the noxious vine had been documented in neighboring Escambia and Santa Rosa counties, Fla, as well (APA 2019; Kartesz 2019).

**PARENTUCELLIA VISCOSA** (L.) Caruel (†) Yellow Glandweed (Orobanchaceae)

Voucher. **USA.** **Alabama.** Baldwin Co.: Small population along wet roadside ditch of Rosco Road, at the intersection with Foley Beach Express, 6 May 2003, *Nation WBR1228* (ALNHS). STATE RECORD.

This European species appears to be most abundant in western USA (California, Oregon, and Washington) and has only been collected east of the Mississippi River once (Kartesz 2019). Later searches of the area have proven unproductive and the population is considered to have been a waif.

**PARONYCHIA ERECTA** (Chapm.) Shinnery var. **ERECTA** Smooth Squareflower (Caryophyllaceae)

Vouchers. **Alabama.** Baldwin Co.: Sandy dune habitat, N of Ala Hwy 182, 27 Aug 2015, *Barger and Taylor SP#1966*, (ALNHS3514); Perdido Bay near Lillian; just above sandy shoreline, 15 Jun 2016, *Barger, Holt, and Taylor SP#2614* (ALNHS4258). UNRECORDED VARIETY.

Found scattered mainly in deep sandy soils along the northern gulf coastal regions from eastern La (one parish) to the central panhandle of Fla (Kartesz 2019), *Paronychia erecta* var. *erecta* has a glabrous, often glaucous stem; versus *P. erecta* (Chapm.) Shinnery var. *corymbosa* (Small) Chaudhri,

which has a minutely gray, puberulent stem. It is doubtful that this is the first collection for the taxon from Alabama. However, determination to the varietal rank of specimens available all proved to be var. *corymbosa*. Closer examination of herbarium specimens will likely show this variety has been previously collected in Alabama.

**PELLAEA GLABELLA** Mett. ex Kuhn ssp. **GLABELLA** Smooth Cliff-brake (Pteridaceae)

Voucher. **Alabama. Marshall Co.:** High atop calcareous rock bluff along the Tennessee River, 21 May 2015, *Barger, Cressler, and Taylor SP#1697* (ALNHS3063). STATE RECORD.

*Pellaea glabella* subsp. *glabella* is one of the two more frequently encountered species of *Pellaea* in the eastern USA. The more abundant *Pellaea atropurpurea* (L.) Link is common throughout north/central Alabama. The closest known population of Smooth Cliff-brake to the Marshall County, Alabama site, however, was collected approximately 100 km away from Marion County, Tennessee. The Alabama population may also be the southernmost collection for the species, at approximately the same latitude as a collection from near Hot Springs, Arkansas.

**PHILADELPHUS PUBESCENS** Loisel. Hairy Mock-orange (Hydrangeaceae)

Voucher. **Alabama. Limestone Co.:** Shady woods along high bluff of Elk River, rich hardwoods with mesic soils, 25 May 2012, *Barger SP#2894* (ALNHS4471). HISTORIC/UNCOMMON.

Not previously known to occur in Alabama, a collection of *Philadelphus pubescens* was discovered while researching holdings for the species. The Ross Clark collection from 1966 is held at UNC (SERNEC 2019) and had been annotated (from the original determination of *Philadelphus hirsutus* Nutt.). This collection was not previously known to exist and had resulted in the species being omitted from various Alabama checklists (APA 2019; Kartesz 2019; Kral 2011). The author's collections represent the first known collections since the aforementioned and were discovered only a few miles northeast from that collection.

**QUERCUS X BEADLEI** Trel. ex Palmer Beadle's Oak (Fagaceae)

Voucher. **Alabama. Lee Co.:** Chewacla State Park, N side of Shell Toomer Parkway, 25 ft N of bike path, well-drained soils along margin of mixed hardwoods near West Pace Boulevard, 28 Sep 2018, *Schotz and Taylor CSP#565* (AUA78901). STATE RECORD.

This represents the first known collection of Beadle's Oak from Alabama. Collections are represented from 13 counties across 9 states ranging from east Texas to southern New Jersey (Kartesz 2019). The species is a putative hybrid of *Quercus alba* L. and *Quercus michauxii* Nutt., both of which have been documented in Lee County (APA 2019). Only one Beadle's oak was observed during the searches.

**TRIGLOCHIN STRIATA** Ruiz & Pavón Three-rib Arrow-grass (Juncaginaceae)

Voucher. **Alabama. Mobile Co.:** Underneath the N side of the Ala Hwy 163 bridge crossing Dog River, 17 Aug 2016, *Holt, Barger, and Taylor SP#2362* (ALNHS3993). HISTORIC/UNCOMMON.

Only three collections of this species are known from Alabama. Collected in 1878 (UNA), 1980 (USAM), and 1996 (AUA) from Baldwin and Mobile counties, it is unclear if this species is uncommon, unknown to most collectors, or simply overlooked. Thinly spread from eastern Louisiana Parishes along the Gulf/Atlantic coastal counties to Delaware (Kartesz 2019).

**VERNONIA ANGUSTIFOLIA** Michx. var. **ANGUSTIFOLIA** Tall Ironweed (Asteraceae)

Voucher. **Alabama. Houston Co.:** Just N of the Florida line, ca. 12 mi S Dothan, Ala, and ca. 6 mi NE of Graceville, Fla, N side of AME Road, frequent on dry sandy road bank with *Solidago brachyphylla*, *Quercus virginiana*, *Ilex vomitoria*, and *Chasmanthium laxum*, 16 Oct 2018, *Knapp and Highland 6117* (ALNHS6166). UNRECORDED VARIETY.

Treatments vary in recognition of infraspecific taxa for *Vernonia angustifolia*. The Flora of North America treatment recognizes no varieties (Strother 2006) whereas Weakley (2015) and Jones (1964) have recognized three varieties (var. *angustifolia*, var. *mohri*, and var. *scaberrima*). When infraspecific taxa are recognized, the only variety that has been attributed to the flora of Alabama is var. *mohrii* (Jones 1964; Kral et al. 2011; Weakley 2015). Previously var. *angustifolia* has not been attributed west of southcentral Ga (Jones 1964; Weakley 2015). This material was collected only a few meters north of Jackson County, Fla, and should be sought there.

**WOLFFIELLA GLADIATA** (Hegelm.) Hegelm. Sword Bogmat (Araceae)

Voucher. **USA. Alabama. Madison Co.:** Blackwell Swamp, frequent along the E side of swamp shoreline, 24 May 2018, *Barger and Long SP#3887* (ALNHS5980). HISTORIC/UNCOMMON.

*Wolffiella gladiata* is likely undercollected across its range due to its diminutive stature and aquatic habitat. While previously collected 28 times from 13 counties in Alabama, this collection marks the first collection north of the Fall Line for the state (Kartesz 2019). This location also is significant because it is the only collection for the entire Interior Low Plateau ecoregion (Kartesz 2019).

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