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REDISCOVERY OF CAROLINA CLOVER (*TRIFOLIUM CAROLINIANUM,* FABACEAE) IN MISSOURI

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The range of Carolina clover (*Trifolium carolinianum* Michx.) extends from southern Virginia to Missouri and southeastern Kansas, south to Florida and eastern Texas, and perhaps Mexico (Lasseigne, 1973; McGregor, 1986). In the Midwest outside of Missouri, *T. carolinianum* is known from one historical specimen from Kansas collected in 1896 (McGregoer, 1986). The species was considered extant at a single site in Saline County, Arkansas (Arkansas Vascular Flora Committee, 2006), where it was collected in 2004 by Theo Witsell, until a second locality was documented during the spring of 2011 (T. Witsell, pers. comm., May 2011). In Missouri, Carolina clover was known historically from one site in Boone County and three sites in Jasper County, and had not been documented in the state since 1920 (Missouri Botanical Garden, 2011). Habitats recorded for *T. carolinianum* in the Midwest are rocky open woods, sandy prairies, limestone barrens, and open ground (McGregor, 1986; Missouri Botanical Garden, 2011).

On 1 May 2011, members of the Missouri Native Plant Society located Carolina clover on an open chert glade at the Wildcat Glades Conservation and Audubon Center in Joplin, Newton County. *Trifolium carolinianum* was scattered in glade openings just south of the visitors' center along both sides of Silver Creek, which bisects the area. On 4 May 2011, Cyndi Cogbill of the Missouri Department of Conservation searched the nearby Wildcat Glade Natural Area located SSW of the Audubon Center,

and found additional plants. In combination, approximately 32 clumps/patches and over 1,000 flowering heads were recorded at the two sites. Plant associates noted at the Wildcat Glades Center on 1 May included *Allium canadense, Camassia scilloides, Chaerophyllum procumbens, Cheilanthes lanosa, Hypoxis hirsuta, Geranium maculatum, Krigia virginica, Melica nitens, Minuartia*

Figures 1, 2. Habit and infloresences of *Trifolium carolinianum*, Wildcat Glades Conservation and Audubon Center, Joplin, Newton County, Missouri; 1 May 2011. Photos by George Yatskievych.

patula, Nuttallanthus texanus, Oenothera linifolia, Opuntia humifusa, Panicum malacophyllum, Ptilimnium nuttallii, Phacelia hirsuta, Ranunculus fascicularis, Sedum nuttallianum, S. pulchellum, Selaginella rupestris, Selenia aurea, Phemeranthus parviflorus, Tradescantia ohiensis, Triodanis biflora, Valerianella radiata, Vulpia octoflora, and Woodsia obtusa ssp. *occidentalis*. Mosses noted included *Grimmia laevigata* and *Atrichum* sp.

Subsequently, Cyndi Cogbill and Randy Haas of the Missouri Department of Conservation found seven additional clumps of *T. carolinianum* with more than 200 flowering heads at the nearby Wildcat Glades Natural Area (C. Cogbill, pers. comm., May 2011).

With its combination of erect to ascending habit, small, nearly globose flowering heads (ca. 1.0–1.5 cm in diameter at anthesis), long peduncles at flowering, and greenish white to lavender flowers, *T. carolinianum* is not likely to be confused with any other Missouri clover (Fig. 1). *Trifolium reflexum* L. (buffalo clover) somewhat resembles the habit of Carolina clover due to its similar habit and similarly shaped infloresences, but it has noticeably larger flowering heads (2.0–2.5 cm in diameter at anthesis) and larger flowers (petals 7–12 mm long vs. 5–7 mm long in *T. carolinianum*) (McGregor, 1986).

Although *T. carolinianum* has a global rank of G5 (NatureServe 2011) [Secure: common, widespread and abundant (although it may be rare in parts of its range, particularly on the periphery)], it is listed as S1 (critically imperiled) in Arkansas and SH (historical) in Kansas, Missouri, and North Carolina (NatureServe, 2011).

We recommend that additional surveys be conducted for Carolina clover at glades in Jasper and Newton counties, particularly those on chert. Populations of *T. carolinianum* at the Audubon Center and Wildcat Glade Natural Area should be monitored to assess population trends.

Voucher specimen—U.S.A.: MISSOURI, Newton County, Wildcat Glades Conservation and Audubon Center, on W side of State Highway 86, ca. 0.5 mi S of junction with Interstate 44, on S side of Joplin; Silver Creek Glade to S from nature center. N side of Silver Creek along trail heading E from building; open chert glade, with *Sedum, Woodsia, Cheilanthes, Phemeranthus, Selaginella*, grasses, lichens. Scattered clumps, mostly past flowering. 37° 01' 41.0" N Lat., 094° 31' 00.3" W Long.; elevation 910 ft; 30 April 2011, *Yatskievych & McKenzie 11-06* (MO, UMO).

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A SECOND RECENT RECORD OF EASTERN PRAIRIE-FRINGED ORCHID (*PLATANTHERA LEUCOPHAEA*, ORCHIDACEAE) FOR MISSOURI

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Eastern prairie-fringed orchid, *Plantanthera leucophaea* (Nutt.) Lindl., is scattered throughout the northeastern United States and adjacent Canada west to Oklahoma and Iowa (U.S. Fish and Wildlife Service, 1989, 1999, 2010; Yatskievych 1999; NatureServe, 2010; Sheviak, 2002). The species has disappeared from many of its historical locations due to habitat degradation and has been listed as a Threatened species under the federal Endangered Species Act (U.S. Fish and Wildlife Service, 1989). *Platanthera leucophaea* is globally ranked as G2 (imperiled) and is state ranked as S1 (critically imperiled) or S2 (imperiled) in every state in which the species is considered extant (NatureServe, 2010).

Platanthera leucophaea occurs in a variety of habitats including mesic upland prairies, bottomland prairies, fens, marshes, lakeshores, sedge meadows, and old fields (Summers, 1996; U.S.

Fish and Wildlife Service, 1989, 1999, 2010; Yatskievych, 1999; Sheviak, 2002; NatureServe 2010).

In Missouri the species was known historically from Carter and Ralls counties, but prior to 2009, it had not been observed in the state since 1951 (Nagel, 2009). In 2009, the second author discovered a population of this species at a private cemetery prairie in Grundy County, Missouri (Davit, 2009).

On 14 June 2010, while conducting a search for Wolf's spike rush [*Eleocharis wolfii* (A. Gray) A. Gray ex Britton] and other sedges, a second population of *P. leucophaea* was discovered in a wet swale on private property in Grundy County (Fig. 1). Orchids were scattered throughout the swale and were associated with *Apios americana, Carex cristatella, C. pellita, C. trichocarpa, C. vulpinoidea, Glyceria striata, Helianthus grosseseratus, Lythrum alatum, Lysimachia quadrifolia, Polygonum amphibium, Rumex crispus, Scirpus atrovirens, Spartina pectinata*, and *Typha latifolia.* The authors documented 38 flowering individuals scattered through an approximately 100 m long portion of the swale. All flowering plants appeared in good condition with no visible insect damage, and ranged from ca. 45–90 cm in height.

The wet swale habitat at the new site was quite unlike the upland cemetery prairie site discovered by the second author in 2009 (Davit, 2009) and more similar to habitat for a Harrison County population of western prairie fringed orchid (*P. praeclara* Sheviak & M.L. Bowles) located ca. 26 km away. Consequently, we sent flowers from multiple plants to George Yatskievych of the Missouri Botanical Garden for species determination. Yatskievych (pers. comm. June 2010) confirmed that the specimens were eastern and not western prairie fringed orchid.

Because the new site is on private property, the exact location will remain protected and not publically disclosed. A voucher specimen (*Nagel s.n.*) has been deposited at the Missouri Botanical Garden's herbarium (MO). Although the management history of the new site is not fully known, management actions taken by the land owner have obviously been beneficial for *P. leucophaea* for the population to remain intact. The integrity of the site is further confirmed by the presence of *Carex trichocarpa* in the swale. The tens of thousands of culms of *C. trichocarpa* observed at this locality on 14 June likely represent the largest extant population of this critically imperiled (ranked as S1 by the Missouri Natural

Heritage Program [2011]) sedge in the state. *Carex trichocarpa* and other members of Section *Carex* have long creeping rhizomes that form large colonies (Yatskievych, 1999). This growth habitat has likely helped maintained the integrity of the site. The owner of the new site is excited about the discovery and is looking forward to working with the Private Lands Division of the Missouri Department of Conservation to discuss management options that will maintain the integrity of the site. The *P. leucophaea* population at this site is the second record of eastern prairie fringed orchid in Grundy County in less than a year. Because there are additional swales in Grundy County and nearby counties that could possibly provide habitat for eastern prairie fringed orchid, the authors recommend that the Missouri Department of Conservation approach land owners to seek permission to conduct further surveys for the species.

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Figure 1. *Platanthera leucophaea* in wet swale on private property, Grundy County, Missouri, 14 June 2010. Photo by Noppadol Paothong.

BOTANICAL ANGELS AND DEVILS: THE PRESENCE OF *ARALIA ELATA* (ARALIACEAE) IN MISSOURI

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Historically, botanists have traversed every corner of the Earth searching out new and exciting plants, seeking out the places where angels and devils tread in the name of science. A new discovery in Forest Park, St Louis, makes this an area where both sides of the heavenly spectrum commingle. Japanese Angelica tree, *Aralia elata,* has been documented growing with devil's walking stick, *Aralia spinosa. Aralia elata* is new to Missouri and has also been documented in at least one other locality in the St. Louis metropolitan area.

The flowering plant family *Araliaceae* includes about 39 genera and more than 1,400 species, and is distributed nearly worldwide, with most of the diversity occurring in tropical regions. In Missouri, there are only three genera, the introduced *Hedera* (*H. helix* L., English ivy) and the native *Aralia* (three species) and *Panax* (*P. quinquefolius* L., American ginseng). Although it includes about 67 total species (Wen, 2004), the widespread genus *Aralia* is represented in the Missouri flora by only 3 native species (Yatskievych, 2006), *A. nudicaule* L. (wild sarsaparilla), *A. racemosa* L. (American spikenard), and *A. spinosa* L. (Hercules' club, devil's walking stick, tear-blanket). Of these, only *A. spinosa* is woody significantly above the base. Anyone who has encountered this plant knows how the common name devil's walking stick originated, as the trunk and other plant parts are armed with numerous sharp prickles. *Aralia spinosa* is widespread

in the eastern United States; in Missouri it is mainly distributed in the Bootheel Counties, with somewhat disjunct occurrences reported from Ste. Genevieve County and St. Louis City and County. Steyermark (1963) was doubtful that the occurrence of the species in the St. Louis area was native, but it was already documented with an herbarium specimen from the Allenton area in 1885 by George Letterman (Yatskievych, 2006). In the Kennedy Forest portion of Forest Park (St. Louis City) the population has long been noted as an important understory component of a disturbed mesic upland forest.

Recently, the senior author noted that plants in Forest Park had two distinct morphologies and this led to the discovery that some of these individuals were not, in fact, *A. spinosa*, but a non-native relative not previously known from the state, *A. elata* (Miq.) Seeman (Japanese angelica tree). Subsequently, the junior author discovered another population in a disturbed woodlot in St. Charles County. The present paper documents this new state record of a potentially invasive exotic species and discusses how to distinguish it from its American counterpart.

DISTRIBUTION AND ECOLOGY

In its native range, *A. elata* grows in China, Japan, Korea, and eastern Russia. The lengthy distributional history of the species in North America was detailed by Moore et al. (2009). Originally introduced as an ornamental at some time around the 1830s, its escape from cultivation initially was overlooked by botanists. The species apparently was first noted as established outside of cultivation in Illinois, based on a collection made in 1978 in Du Page County (Swink and Wilhelm, 1979). It was reported anecdotally from Michigan by Voss (1985), who speculated that most of the reports of *A. spinosa* as an escape in that state actually represented *A. elata*. Other reports followed from Ohio, Pennsylvania, New York, Connecticut, New Hampshire, and adjacent Canada. It also appears to have found a foothold in the Pacific Northwest (USDA–ARS, 2011). Today, *A. elata* is known to be well established in the northeastern United States south to about Maryland and Delaware, and apparently it is becoming increasingly common along portions of the Eastern Seaboard (Jun Wen, Smithsonian Institution, pers. comm.).

The first population documented from Missouri was suspected to occur based on data discriminating the native and non-native species in Sarver et al. (2008). The population occurs in Forest Park, a 1294-acre city park in St. Louis that was created in 1874 from several large estates and initially included heavily forested areas. However, following large-scale development of the property for the 1904 World's Fair and Summer Olympics that year, much of this forest was eliminated. The area now known as Kennedy Forest in the southwestern corner of this park preserves some of the last remaining stands of timber from those early days (some *Quercus alba* trees may be 250 years old or older), but the mostly second-growth forest has been degraded by a variety of impacts, including timber and underbrush removal, invasion by exotic plant species, deer browsing, road, trail, carriage path, and other construction, changes in hydrology, and fire suppression. In the portion of this mesic upland forest inhabited by *A. elata*, the overstory on a slight southern slope consists mostly of *Quercus velutina, Q. imbricaria*, and *Robinia pseudoacacia*, and the understory includes *Cornus drummondii, Sambucus canadensis*, and *Vitis riparia*. At one time, the area contained dense populations of the exotic *Lonicera maackii* (Amur bush honeysuckle), but control measures have dramatically thinned this invasive species. The loamy soils are derived from loess deposits and the forest density is moderate, although the *Aralia* species show a preference for canopy gaps and edges of trails, where more sunlight reaches the ground. *Aralia elata* occurs in three suckering clusters, with up to 100 stems in each cluster ranging from young vegetative stems to ca. 6 cm DBH and 5 m tall. The population appears to be increasing from a combination of vegetative reproduction and seed dispersal by birds. The plants are in the vicinity of, but no closer than ca. 150 m to, some of the *A. spinosa* plants. The age of the population is unknown, but the mature size of many of the plants suggests that it has been there for several decades.

The second population discovered during the present research occurs in a small, weedy woodlot overlooking the Missouri River floodplain. During the past decade, a major expansion of Page Avenue (State Highway 364) including a new bridge across the river decreased the size of this small forest. The site was further impacted by construction of a parking lot at the head of a short paved trail leading to the KATY Trail State Park, a rails-to-trails

gravel path that runs along the edge of the floodplain. Dominant trees in the woodlot include the introduced *Albizzia julibrissin* and the native *Ulmus rubra, Acer saccharum, A. saccharinum*, and *Fraxinus pensylvanica*. The understory is heavily invaded by *Lonicera maackii*, but also includes a tangle of woody climbers, such as *Smilax hispida, Parthenocissu quinquefolius*, and *Vitis* spp. The population of *A. elata* is likely younger than the one in St. Louis and is mainly confined to the edges of the forest, where the plants reach heights of ca. 7 m. Voucher specimens documenting the two Missouri populations are accessioned at the herbarium of the Missouri Botanical Garden (MO):

> U.S.A.: MISSOURI**:** St. Charles County, parking lot for connector trail to KATY Trail State Park, on SE side of S River Road at junction with Hemsath Road, just NE of State Highway 364 (Page Avenue) on ridge overlooking Missouri River, edge of disturbed woodlot just SE of parking lot, 38° 44' 24" N Lat., 090° 31' 24" W Long., elevation 540 ft, 20 August 2011, *G. Yatskievych 11-68, with K. Yatskievych, Bear Yatskievych* (MO, 3 sheets). ST. LOUIS CITY, Kennedy Forest, Forest Park, just N of gravel path running E–W from N Zoo parking lot, 38° 38' 18" N Lat., 090° 17' 53" W Long., elev. 515 ft, 9 July 2009, *S. Buback s.n.* (MO, 2 sheets).

TAXONOMY AND IDENTIFICATION

Disjunctions between eastern Asia and eastern temperate North America of closely related plant species have been well documented in the botanical literature (reviewed in Wen, 1999). A number of groups found in Missouri are examples of this biogeographic pattern, including such diverse genera as *Ampelopsis, Apios, Aralia, Brachyelytrum, Campsis, Carya, Catalpa, Caulophyllum, Cladrastis, Diarrhena, Gleditsia, Gymnocladus, Hamamelis, Hydrangea, Hydrastis, Itea, Lespedeza, Lindera, Liquidambar, Liriodendron, Magnolia, Menispermum, Mitchella, Nelumbo, Nyssa, Panax, Parthenocissus, Penthorum, Phryma, Podophyllum, Saururus, Stylophorum, Tipularia, Trachelospermum, Triosteum, Wisteria*, and *Zizania* (Wen, 1999). Several hypotheses have been advanced to account for the strong floristic similarities between the two regions, but a combined study of molecular-phylogenetic data and the rich fossil record has suggested that most of these distributional patterns became established within the last 10 million years (Xiang et al., 2000).

Interestingly, *A. spinosa* and *A. elata* are one such example. They belong to *Aralia* sect. *Dimorphanthus* (Miq.) Miq. The majority of the 29 species in this section are distributed in Asia, but two of them (*A. spinosa* and *A. hispida* Vent. [bristly sarsaparilla, a subshrub of the northeastern U.S. and Canada]) are native to North America (Wen, 2004). *Aralia elata* is morphologically so similar to *A. spinosa* that the eminent dendrologist and botanist, Charles Sprague Sargent, treated the former as a variety of the latter (*A. spinosa* var. *elata* (Miq.) Sarg.). The phylogenetics and taxonomy of sect. *Dimorphanthus* were studied most recently by Wen (2000, 2004), who concluded that the American taxa diverged early within the lineage with a subsequent diversification of species after the group had migrated to Asia. She also noted the concept of morphological stasis in the section; that is, despite evidence of long-range migration between continents within the group, the species have experienced relatively little morphological divergence (translation: some of them are hard to tell apart).

It should be noted that a third species of *Aralia* sect. *Dimorphanthus* has been reported in the literature as having become established in North America. Swink and Wilhelm (1979) reported *A. chinensis* L. (Chinese angelica tree) from a mixed population at their original station for *A. elata* in Du Page County, Illinois. Subsequently, Rhoads and Klein (1993) reported this species from Berks County, Pennsylvania. Although the PLANTS website (USDA-ARS, 2011) continues to list *A. chinensis* from both Illinois and Pennsylvania, its occurrence in North America has not been confirmed. *Aralia chinensis* differs from *A. elata* in a number of subtle characters, most evidently that its leaflets are not glaucous abaxially but are densely pubescent with spreading hirsute pubescence (vs. somewhat whitish- or brownish-glaucous and glabrous or with short, curved hairs) and its ultimate umbels have 20–30 (vs. 6–15) flowers on longer pedicels (Wen, 2004; Xiang and Lowry (2007). The characters used by Swink and Wilhelm (1979) to distinguish the two taxa (leaflet pubescence and coarseness of serration; rachis armature) do not appear to adequately separate the two species and the specialist on the group, Jun Wen (pers. comm.), recently has redetermined the Illinois voucher material for the *A. chinensis* report (at MOR) as *A. elata*. Rhoads and Block (2007) also reported that the Pennsylvania record was based on misdetermined material of *A. elata*; thus *A.*

chinensis should be excluded from the North American flora, at least for now.

For more detailed morphological descriptions of *A. spinosa* and *A. elata*, readers should consult Yatskievych (2006) concerning the former, Xiang and Lowry (2007) for the latter, and Wen (2004) for both species. Both *A. spinosa* and *A. elata* are shrubs or small trees that are colonial from root suckers. The trunks covered with stout, sharp, conical prickles. the main trunks are unbranched or few-branched toward the tip. The massive leaves can reach lengths of 1.3 m and are alternate but mostly clustered toward the stem tips. The petioles are usually prickly and the bases are expanded. The leaf blades are 2- or, less commonly, 3-times pinnately compound with numerous, more or less evenly spaced leaflets (usually an extra pair of leaflets occurs at each branch-point. Inflorescences are large terminal panicles, much-branched (the branches usually turning red at maturity), the ultimate divisions umbellate and bearing numerous small white flowers. The fruits of both species are small, globose to somewhat ovoid berries that start green but change sequentially to greenish red, then dark purple, and finally blackish purple to black at maturity. Fortunately, there are both vegetative and fertile features to distinguish the two species, which are summarized in Table 1.

Wen (2004) divided *A. elata* into four varieties. Of these, only var. *elata* has the leaflets consistently hairy on and between the veins on the undersurface, and the Missouri materials (and most other North American populations) correspond to this variety. One of the others, var. *mandshurica* (Rupr. ex Maxim) J. Wen, has very thin-textured leaflets that are glabrous on the undersurface or only sparsely hairy along the veins, as well as somewhat pedicels (5–10 vs. 1–6 mm). Wen reported this variety as an escape from a single North American specimen from Pennsylvania. The other two varieties, var. *inermis* (Yanagita) J. Wen and var. *ryukuensis* J. Wen, are uncommon taxa endemic to portions of the Japanese archipelago.

Table 1.Selected morphological characters to distinguish *Aralia elata* from *A. spinosa*, adapted from Wen (2004), Sarver et al. (2008), and Moore et al. (2009).

Character	*A. elata*	*A. spinosa*
Leaflet venation (occasionally obscure)	Veinlets relatively straight, ending in teeth at leaflet margin	Veinlets curved, ending before reaching leaflet margin
Leaflet pubescence	Usually finely hairy abaxially(sometimes nearly glabrous with age)	Glabrous abaxially
Leaflet attachment	Stalked, the petiolules 1–7 mm long	Usually sessile, rarely to 6 mm long
Inflorescence main axis	Short (occasionally nearly absent), much shorter than branches, at most 12 cm	Elongate, usually longer than branches, to ca. 100 cm
Fruits (measured from dried specimens)	3.0–3.5 mm long, mostly about as long as wide	4–5 mm long, usually slightly longer than wide
Seeds	2.5–3.0 mm long	3.0–3.5 mm long

CONSERVATION CONSIDERATIONS

The origins of *A. elata* in the St. Louis area are unknown, but it is likely that the species escaped from cultivation. Interestingly, the species currently is not readily available through the region's plant nurseries A number of cultivars exist, especially some with variegated foliage; these often are sold as grafts onto unvariegated stock, which later can produce unvariegated root suckers. However, they tend to be relatively expensive when ordered from mail-order specialty nurseries. Possibly, this species was more readily available from horticultural sources earlier in the 20th century. Alternatively, as *A. spinosa* gradually becomes more widely available regionally, it is possible that some stock in nurseries has been mislabeled and native plant enthusiasts may

thus be inadvertently purchasing a potentially invasive exotic species by accident.

Both *A. elata* and *A. spinosa* have berries that are moderately attractive to birds, and populations may be spread in this manner. They also sucker extensively from widely spreading root systems, and large clonal colonies can develop once a plant becomes established. There is some indication that *A. elata* is more cold-hardy than is *A. spinosa*, which may account for most of the reports of its escape originating from regions to the north of the native distribution of *A. spinosa*. However, it is also true that with the right soil conditions and a sheltered site, *A. spinosa* can survive in cultivation to the north of its natural range. At the present time, given the relatively small number of populations in Missouri and their localized nature, it is too soon to know whether Japanese angelica tree will develop into a major invasive exotic problem here. However, to the east of Missouri, Sarver et al. (2008) concluded that *A. elata* is aggressively displacing *A. spinosa* in portions of Pennsylvania. The situation with current populations should be monitored closely and new populations should be sought and documented when feasible. Botanists should note that preparing a proper voucher specimen for either of these taxa can be challenging and may result in two or three sheets of material. At a minimum a good voucher specimen should include the main axis of the inflorescence attached to a stem tip, as well as examples of the basal and apical portions of a mature leaf.

Another potential problem that may develop with *A. elata* is the possibility that in the future it will begin to hybridize with *A. spinosa*. As noted above, the two species are closely related and whether hybrids between them are sterile or fertile has not been studied. Even if such hybrids are sterile, they could spread vegetatively, especially if inhabiting the periodically flooded bottomland forests favored by *A. spinosa*. The flowers of both species are attractive to bees (and other insects) and plants at the Forest Park site grow in sufficiently close proximity that cross-pollination between them is plausible. Other situations where the two species come into contact may become more frequent in the future as southbound migratory songbirds in the autumn potentially disperse the seeds into the main range of *A. spinosa*. Unfortunately, interspecific hybrids between *A. elata* and *A.*

spinosa likely would be difficult to distinguish morphologically, especially using vegetative characters.

Once present at a site, *A. elata* may be difficult to control. The prickly stems are difficult to handle. Also, it is likely that, as with many other strongly colonial plants, control using herbicides may have to be repeated to treat new sprouts from surviving sections of root. Also, as with many other plants having widely spreading root systems, control by manual removal may be difficult and create strong ground-disturbance that will impact surrounding vegetation and create new soil disturbance for the colonization of other weeds. The label on a specimen collected on 1 October 2009 in Coles County, Illinois (*Tucker 15482*, EIU, MO) has a note that the plant spreads by suckers, has been persistent at the site for ten years, and has proven impossible to eradicate. Clearly, the Japanese angelica tree has several characteristics found in other woody invasive exotics in the Midwest. It may have an angelic name, but it may well be a devil in disguise.

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PLANTS OF THE BULL SHOALS FIELD STATION, TANEY COUNTY, MISSOURI

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The Bull Shoals Field Station, established in 1999, is located at the Drury-Mincy Conservation Area in Taney County, Missouri, and is an area full of opportunities for students, educators, and researchers. The field station is part of the Biology Department at Missouri State University, and is visited each semester by students taking field courses such as Plant Taxonomy, Mammalogy, Herpetology, and Plant Ecology. In addition, workshops and summer courses in science education are taught at the field station. The field station employs the coordinators of the Leopold Education Project and project WET (Water Education for Teachers), and co-sponsors GLADE (Green Leadership Academy for Diverse Ecosystems).

Missouri State University leases the "Drury House," which is located in the northeastern part of the Drury Conservation Area

(36° 34' 18.78" N, 93° 03' 20.75" W; Labeled #1 on Fig. 1). The Drury House was built in the late 1800s and originally was owned by Frank Drury (now owned by the Army Corps of Engineers). The house was renovated in 2006 with the restoration of plumbing and the installation of solar electrical power. In 2007, a solar-powered classroom building was erected just east of the Drury House. The area around the Drury buildings is sloped and rocky, and surrounded by an open oak-hickory woodland with a grassy/prairie understory on the north and east sides. There is a forested area on the south and west sides with a slight subcanopy of dogwood, serviceberry, aromatic sumac, greenbrier, and other shrubs and vines.

The elevation of the field station ranges from 183–335 m, and the property includes upland forest, open woodlands (dolomite savannas), limestone/dolomite glades, and ponds, including one natural sinkhole pond (King, 2000), now called Buttonbush Pond (# 2, Fig. 1). The dry open woodland peninsula where S.H.K's (2000) graduate thesis study was performed is now affectionately called Shanda's Point (#3, Fig. 1). It is the southernmost point of the Drury Conservation Area. Downhill from the Drury House on the north, south, and east sides is Bull Shoals Lake, which resulted from the damming of the White River in 1951 and is maintained by the U.S. Army Corps of Engineers (http://www. swl.usace. army.mil/parks/bullshoals/damand lake.htm). Prescribed burns in various units throughout the Drury-Mincy Conservation Area are carried out by the Missouri Department of Conservation every two to three years.

While working on their graduate theses, S.H.K. and J.M. surveyed the Drury Conservation Area and part of the Mincy Conservation Area (mostly along Bee Creek; #4, Fig. 1). Concurrently, P.L.R., professor emeritus at Missouri State University, sampled and identified the bryophyte flora of the Drury Conservation Area. Here, we present the results of that work and some additional collections. The complete study area includes the entire Drury Conservation Area and frequently visited parts of the Mincy Conservation Area: the floodplain of Bee Creek (36° 31' 30.61" N, 93° 05' 48.13 W; #4, Fig. 1), Bear Cave Trail (36° 32' 42.80" N, 93° 06' 43.17" W; #5, Fig. 1) and Pond 13 (36° 32' 48.70" N, 93° 06' 47.96" W; # 6, Fig. 1).

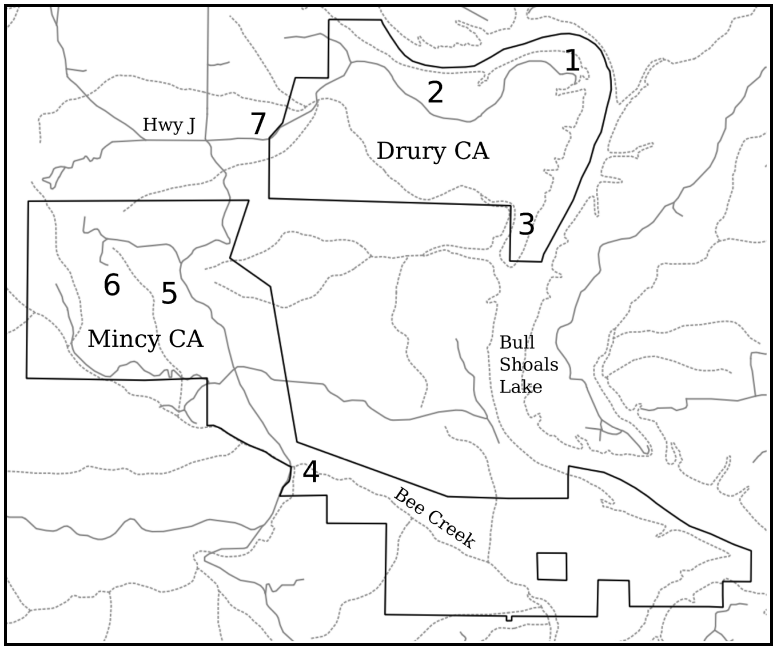

Figure 1. Map of the Drury-Mincy Conservation Area based on Missouri spatial data, courtesy of Brian Edmond. Labels on the map are as follows: **1)** The Drury House, part of Missouri State University's Bull Shoals Field Station (BSFS); **2)** Buttonbush Pond, a sinkhole pond; **3)** Shonda's Point; **4)** Bee Creek floodplain; **5)** Bear Cave trailhead; **6)** Pond 13, an older MDC pond; **7)** Mincy House, also part of the BSFS.

In 2003, the field station acquired a second house, now called the Mincy house, which is located just east of the Mincy Conservation Area (Drury Road, Kirbyville; #7, Fig. 1). The area around the Mincy house is an open woodland/glade habitat that is partly weedy and landscaped and partly undisturbed. Scattered trees are mostly post oak but there is also wooly buckthorn, winged elm, and red cedar. Shooting star, prickly pear cactus, and sedges grow in the open glade sections. Five taxa that were not found on the Drury-Mincy Conservation Area (and are therefore not on the list below) can be found at the Mincy house: *Fragaria virginiana, Manfreda virginica, Talinum parviflorum, Eleocharis* spp., and *Luzula campestris* var. *multiflora*.

Table 1 summarizes the flora, including introduced species and species new to Taney County. The Appendix includes a plant

list for the Bull Shoals Field Station, with collection and habitat information for representative vouchers of most species. Of special note is the state record of *Euploca procumbens* (Mill.) Diane & Hilger at this site, and possible range extension of this species into Missouri. It was reported earlier as *Heliotropium europaeum* L., (Raveill and Yatskievych, 2008), but here correct this record to *Euploca procumbens* (synonym: *Heliotropium procumbens* Mill.). Fortunately, this adds a native species to the state rather than an introduced one. *Euploca procumbens* was found nearby in Arkansas by Theo Witsell (Arkansas Natural Heirtage Program, pers. comm.), and the finding alerted Missouri botanists to the possibility that the earlier record had been misdetermined.

Also new to Taney County is *Diodia virginiana* L. This represents a possible range expansion, but it also has been found in a couple of disjunct counties to the north.

Table 1. Summary of taxa found at Bull Shoals Field Station during the present study. For the complete list of taxa, see the Appendix.

	Number of Families	**Number of Genera**	**Number of Species**	**Percent of Total Species**
Bryophytes &	18	26	33	7.6%
Pteridophytes	4	6	7	1.6%
Gymno-sperms	2	2	3	0.7%
Angiosperms	95	271	393	90%
Totals	**119**	**304**	**436**	**100%**
Introduced Plants	20	52	57	13%
Taney County Records	3	29	48	11%
Species of Conservation Concern			2	0.46%

Several individuals of *Trepocarpus aethusae* Nutt. ex DC. were collected from a rocky forested part of the Drury Conservation Area. This species usually grows in or near water and is otherwise known in Missouri only from southeastern counties, but it is possible that the area at the Drury Conservation Area is inundated periodically.

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APPENDIX
CHECKLIST OF THE FLORA OF THE BULL SHOALS FIELD STATION, TANEY COUNTY, MISSOURI

All vouchers are deposited in the Ozarks Regional Herbarium (SMS), Department of Biology, Missouri State University, Springfield, except where noted. Nomenclature for mosses follows Anderson et al. (1990), and for liverworts follows Stotler and Crandall-Stotler (1977). Vascular plant names follow *Steyermark's Flora of Missouri* (Yatskievych, 1999, 2006) and the Integrated Taxonomic Information System (2011) for species in the as-yet unpublished Volume 3 of *Steyermark's Flora of Missouri*. A total of 437 species was found, only two of which were listed as being of conservation concern (*Triodanis lamprosperma* McVaugh and *Trepocarpus aethusae*). Forty-eight species had not been found previously in Taney County. In the list below, abbrev-iations preceding plant names are as follows: **I**—introduced in Missouri, **N**—new in Taney County, **V**—voucher still needed, **C**—species of conservation concern, including the conservation status (Missouri Natural Heritage Program, 2012).

Bryophyta

Hepaticae

Jubulaceae

Frullania riparia Hampe ex Lehm., *Redfearn 39838*, base of black oak.

Musci

Amblystegiaceae

Campylium hispidulum (Brid.) Mitt., *Redfearn 39839*, cherty soil, ridge.
Leptodictyum riparium (Hedw.) Warnst., *Redfearn 39945*, limestone in creek.

Anomodontaceae

Anomodon minor (Hedw.) Fuernr., *Redfearn 39822*, base of white oak.
A. rostratus (Hedw.) Schimp., *King 206*, shaded limestone.
Haplohymenium triste (Ces. ex De Not.) Kindb., *King 210*, tree trunks.

Brachytheciaceae

Brachythecium acuminatum var. *acuminatum* (Hedw.) Aust., *Redfearn 39823b*, soil on ridge.
B. oxycladon (Brid.) Jaeg., *Redfearn 39837*, shaded cherty soil, open woods.

Bryaceae

Bryum gemmiparum DeNot., *Redfearn 39946a*, limestone in creek.
B. pseudotriquetrum (Hedw.) Gaertn. et al., *Redfearn 39946b*, limestone in creek.

Cryphaceae

Cryphaea glomerata Bruch & Schimp. ex Sull. in A. Gray, *Redfearn 39948*, limb of cedar along creek.

Dicranaceae

Dicranum condensatum Hedw., *Redfearn 39826*, rocky soil in open woods.
D. scoparium Hedw., King 308, *Redfearn 39827*, rocky soil, open woods.
Pleurochaete squarrosa (Brid.) Lindb., *Redfearn 39834*, open soil in glade.

Ditrichaceae

Ceratodon purpureus var. *purpureus* (Hedw.) Brid.*, King 207.*
Ditrichum pallidum (Hedw.) Hampe, *Redfearn 39825a*, rocky soil, open woods.

Funariaceae

Funaria hygrometrica Hedw., *Redfearn 39829*, soil in glade.
Physcomitrium pyriforme (Hedw.) Hampe., *Redfearn 39947*, soil in food plot.

Grimmiaceae

Grimmia laevigata (Brid.) Brid., *King 209*, limestone boulders.
Schistidium apocarpum (Hedw.) Bruch & Schimp., *Redfearn 39835*, limestone boulder in open.

Hedwigiaceae

Hedwigia ciliata (Hedw.) P. Beauv., *King 211, Redfearn 39836,* limestone boulder in open.

Hypnaceae

Platygyrium repens (Brid.) Schimp. in B.S.G, *Redfearn 39828*, trunk of cedar.

Leucobryaceae

Leucobryum glaucum (Hedw.) Aongstr. in Fries, *King 212; Redfearn 39830*, rocky soil, open woods.

Leucodontaceae

Leucodon julaceus (Hedw.) Sull., *King 213, Redfearn 39821, 39840*, base of hickory, trunk of red cedar.

Polytrichaceae

Atrichum angustatum (Brid.) Bruch & Schimp., *Redfearn 39832*, rocky soil, open woods.

Polytrichum ohioense Ren. & Card., *King 214, Redfearn 39821, 39831*, rocky soil, open woods.

Pottiaceae

Syntrichia pagorum (Milde) Amann, *Redfearn 39833*, trunk of red cedar.

Tortella humilis (Hedw.) Jenn., *Redfearn 39820*, base of cedar.

Weissia controversa Hedw., *Redfearn 39823a*, soil on ridge.

Theliaceae

Thelia asprella Sull. in Sull. &Lesq., *King 215; Redfearn 39819*, soil in glade.

T. hirtella (Hedw.) Sull. in Sull. & Lesq., *Redfearn 39949*, base of cedar.

Thuidiaceae

Thuidium delicatulum (Hedw.) Schimp., *King 216*, shaded soil.

T. recognitum (Hedw.) Lindb., *Redfearn 39818*, soil in glade.

VASCULAR PLANTS
Ferns and Lycophytes

Aspleniaceae

Asplenium rhizophyllum L., *King & Moody-Weis 309*, thin soil of bluffs, shaded, steep NW-facing slope.

A. platyneuron (L.) Britton, Sterns & Poggenb., *King and Moody-Weis 21, 397*, cedar glade, along creek.

Dryopteridaceae

Cystopteris protrusa (Weath.) Blasdell, *Moody-Weis 442*, edge of field plot and woods.

Woodsia obtusa (Spreng.) Torr. ssp. *obtusa*, *King & Moody-Weis 38*, near creek.

Isoetaceae

Isoetes melanopoda Gay & Dur., *Haefner 1017*, sinkhole pond near road.

Ophioglossaceae

Botrychium virginianum var. *virginanum* (L.) Swartz, *King & Moody-Weis 47*, south-west slope, near creek.
V, *Ophioglossum engalmannii* Prantl, Bear Cave trail

Gymnosperms

Cupressaceae

Juniperus ashei Buchholz, *King & Moody-Weis 122*, open glade near Shanda's point.
J. virginiana var. *virginiana* L., *King 151*, closed oak-hickory forest.

Pinaceae

V, *Pinus echinata* Mill., above pond 13 in the Mincy CA.

Angiosperms

Acanthaceae

Justicia americana (L.) M. Vahl., *Moody-Weis 446*, Mincy Conservation Area, Bee creek, with submerged roots.
Ruellia humilis Nutt., *King & Moody-Weis 58*, restored glade.
R. pedunculata Torr. ex A. Gray, *King & Moody-Weis 57*, restored glade.

Aceraceae

Acer saccharinum L., *King & Moody-Weis 99*, lakeside.
A. saccharum Marshall, *King & Moody-Weis 117, 359*, bluffs & mesic woods.

Agavaceae

I, **N**, *Yucca smalliana* Fernald, *King & Moody-Weis 70*, roadside.

Amaranthaceae

N, *Amaranthus albus* L., *King & Moody-Weis 159*, rocky soil, savanna/glade.
A. tuberculatus (Moq.) J.D. Sauer, *King & Moody-Weis 275, 282*, rocky soil near lake.

Anacardiaceae

V, *Cotinus obovatus* Raf., along Bee Creek floodplain.
Rhus aromatica Aiton, *King 68,* dry, rocky soil, restored glade, savanna/glade.
R. copallinum L., *King & Moody-Weis 428, 429, 207,* dry, rocky soil, savanna/glade.
R. glabra L., *King & Moody-Weis 208*, dry, rocky soil, savanna/glade.
V, *Toxicodendron radicans* (L.) Kuntze, along Bee Creek.

Annonaceae

Asimina triloba (L.) Dunal, *King & Moody-Weis 52, 113*, near creek, talus, south-west slope.

Apiaceae

Chaerophyllum tainturieri Hook., *King & Moody-Weis 331*, roadside.

I, *Daucus carota* ssp. *carota* L., *King 93; King & Walter 79*, dry rocky soil, roadside, savanna/glade.

N, *Eryngium yuccifolium* Michx., *King & Moody-Weis 140,* rocky soil, savanna/glade.

Sanicula canadensis L., *Moody-Weis 402; King & Moody-Weis 28; King & Moody-Weis 51,* along creek, oak-hickory forest.

I, *Torilis arvensis* (Huds.) Link., *Moody-Weis 20, 73, 181, 423; Moody-Weis & Dickerson 380,* rocky soil, open woods and savanna/glade, roadside.

C, **N**, *Trepocarpus aethusae* Nutt. ex DC., *King & Moody-Weis 118*, rocky soil, savanna/open forest, **S1, G4G5**.

Apocynaceae

V, *Amsonia ciliata* var. *filifolia* A. W. Woods, above Bear cave, near pond 13.

Apocynum cannabinum L*., Redfearn 40023*, open woods near Drury house.

Aquifoliaceae

Ilex decidua Walt., *King & Moody-Weis 49, 101,* rocky, dry soil, steep, SW-facing slope & bluff, savanna/glade closed oak-hickory forest.

Araceae

Arisaema dracontium (L.) Schott, *Redfearn 40022*, rocky soil, open bottomland forest.

A. triphyllum (L.) Schott, *King & Moody-Weis 355*, mesic forest, on steep slope.

Aristolochiaceae

Asarum canadense L. *Edmond 386*, Mincy Conservation Area, along Bee Creek.

Asclepiadaceae

Asclepias quadrifolia Jacq., *King & Moody-Weis* , 350, mesic forest, steep slope.

A. tuberosa L. ssp. *interior* Woodson, *King & Moody-Weis 130*, rocky soil, glade.

A. verticillata L., *King & Moody-Weis 143, 185*, rocky soil, savanna/glade.

A. viridis Walt., *King & Moody-Weis 349*, cedar glade.

Matelea baldwyniana (Sweet) Woodson, *King & Moody-Weis 16*, rocky soil, savanna/glade, roadside.

Asteraceae

Achillea millefolium L., *King & Moody-Weis, 81, 173*, rocky soil, savanna/glade, roadside.

Ambrosia artemisiifolia L., *King & Moody-Weis 233*, around & in spring-fed pond (pond 18).
Antennaria parlinii ssp. *parlinii* Fern., *King & Moody-Weis 304*, rocky soil, restored glade; *King 79,* rocky soil at Shanda's Point.
N, *A. neglecta* Greene. *Donnell 1,* Mincy Conservation Area, along Bee Creek.
N, *Arnoglossum plantagineum* Raf., *King & Moody-Weis 133,* rocky soil, savanna/glade.
I, *Artemisia annua* L., *Redfearn 40244*, edge of lake.
Bradburia pilosa (Nutt.) Semple, *Redfearn 40245*, *King & Moody-Weis 214, 258,* roadside.
Brickellia eupatorioides var. *texana* (Shinners) Shinners, *King & Moody-Weis 160, 201, 211, 213,* rocky soil, savanna/glade.
I, *Carduus nutans* L., *King & Moody-Weis 187,* rocky soil, savanna/glade.
Cirsium altissimum (L.) Spreng., *Redfearn 40321; King & Moody-Weis 266*, cedar glade, roadside.
Conyza canadensis (L.) Cronq., *King & Moody-Weis 209, 224*, rocky soil, savanna/glade, food plot, edge of forest.
Coreopsis lanceolata L., *King & Moody-Weis 348*, cedar glade.
C. palmata Nutt., *King & Moody-Weis 142*, dry, rocky soil, savanna/glade.
Echinacea pallida (Nutt.) Nutt., *King & Moody-Weis 139,* rocky soil, savanna/glade.
E. purpurea (L.) Moench, *Moody-Weis & Dickerson 373*, mesic woods along creek bank.
Elephantopus carolinianus Raeusch., *King & Moody-Weis 262*, oak-hickory forest, S-facing slope.
Erigeron annuus (L.) Pers., *King & Moody-Weis 218; Moody-Weis 395*, roadside, cedar glade.
E. strigosus Muhl. ex Willd. var. *strigosus* Muhl. ex. Willd., *King and Moody-Weis, 7, 136, 162, 216 383,* dry, open woods, roadside.
Eupatorium altissimum L., *Redfearn 40223*, near Mincy Creek.
Grindelia lanceolata Nutt., *King & Moody-Weis 285, Redfearn 40237*,roadside.
I, *Helenium amarum* (Raf.) H. Rock, *King & Moody-Weis 198*, roadside.
H. autumnale L., *King & Moody-Weis 232,* around/in spring-fed pond (pond 18).
H. flexuosum Raf., *King & Moody-Weis 215, 404*, roadside, pond.
Helianthus hirsutus Raf., *King & Moody-Weis 161, 205,* rocky soil, savanna/glade.
Heliopsis helianthoides (L.) Sweet var. *scabra* (Dunal) Fernald, *Moody-Weis 374*; *King & Moody-Weis 177*, upland forest, rocky soil, savanna/glade.
Krigia virginica (L.) Willd. *King & Moody-Weis 77*, roadside.
I, **N**, *Lactuca serriola* L., *Moody-Weis 452*, Mincy Conservation Area, floodplain of a stream.
I, *Leucanthemum vulgare* Lam., *King & Moody-Weis 6*, rocky soil, roadside, W-facing slope.
Liatris aspera Michx., *King 84, Redfearn 40235*, rocky soil, savanna/glade.
L. squarrosa var. *hirsuta* (Rydb.) Gaiser, *King & Moody-Weis, 192*, savanna/glade.
Palafoxia callosa (Nutt.) Torr. & A. Gray, *Redfearn 40228.*

Parthenium integrifolium (Raf.) Mears, *King & Moody-Weis 141*, rocky soil, savanna/glade.
Polymnia canadensis L., *King & Moody-Weis 108*, talus slope, N-facing slope.
Pseudognaphalium obtusifolium (L.) Hilliard & B.L. Burtt, *Redfearn 402, King & Moody-Weis 272,* edge of lake.
Pyrrhopappus carolinianus (Walter) DC., *King & Moody-Weis 63*, rocky soil, restored glade.
Ratibida pinnata (Ventenat) Barnhart, *King & Moody-Weis 197*, roadside.
Rudbeckia hirta L. var. *pulcherrima* Farw., *Redfearn 40214; King & Moody-Weis 4; Moody-Weis 387, 408,* rocky soil, savanna/glade roadside, upland forest, bank of pond.
R. triloba L., *King & Moody-Weis, 190, 221, 448* rocky soil, roadside, oak-hickory forest.
Silphium integrifolium Michx., *Moody-Weis 453*, Mincy Conservation Area, wooded creek bank.
V, *S. laciniatum* L., glade on Bear Cave trail.
V, *S. terebinthinaceum* Jacq., glade on Bear Cave trail.
Solidago altissima L., *King & Moody-Weis 17,* rocky soil, savanna/glade.
S. petiolaris Aiton var. *angusta* (Torr. & A. Gray) A. Gray, *Redfearn 40238*.
S. radula Nutt., *King & Moody-Weis 287*, dry, rocky soil, savanna/glade.
S. ulmifolia Muhl., *King & Moody-Weis 146, 268, Redfearn 40239*, roadside, savanna.
I, *Sonchus asper* (L.) Hill ssp. *asper* (L.) Hill., *King & Moody-Weis 146*, roadside.
Symphyotrichum anomalum (Engelm. ex Torr. & A. Gray) Nesom, *Redfearn 40241a*.
S. ericoides (L.) G.L. Nesom var. *ericoides* (L.) Nesom, *Redfearn 40277*.
S. patens (Aiton) G.L. Nesom var. *patentissimum* (Lindley ex DC.) G.L. Nesom, *King & Moody-Weis 288; Redfearn 40216,* rocky soil, savanna/glade.
S. pilosum (Willd.) Nesom, *King & Moody-Weis 289*, rocky soil, savanna/glade.
S. urophyllum (Lindley ex DC.) Nesom, *Redfearn 40217*.
Verbesina alternifolia (L.) Britton, *King & Moody-Weis 80*, roadside.
V. virginica L. var. *virginica*, *King & Moody-Weis 219, 229; Redfearn 40219*, roadside, rocky soil, savanna/glade, food plot, edge of forest.
Vernonia arkansana DC., *King & Moody-Weis 222, 445; Redfearn 40320*, roadside near creek.
V. baldwinii Torr., *Moody-Weis 178, 422*, rocky soil, open woods and savanna/glade.
Xanthium strumarium L., *King & Moody-Weis 253*, rocky soil, lakeside.

Berberidaceae

Podophyllum peltatum L., *King & Moody-Weis 35*, near creek, N-facing slope.

Betulaceae

Ostrya virginiana (Mill.) K. Koch, *King & Moody-Weis 31, 128,* closed oak-hickory forest, rocky soil of glade, along creek.

Bignoniaceae

Campsis radicans (L.) Seemann, *King & Moody-Weis 96; Moody-Weis & Dickerson 372*, rocky soil, lakeside and creek bank.

Catalpa speciosa (Warder ex Barney) Engl., *Moody-Weis & Dickerson 366*, along creekbank.

Boraginaceae

I, *Amsinckia menziesii* (Lehm.) Nelson & J.F. Macbr., *King & Moody-Weis 254, 286,* rocky soil, lakeside.

Lithospermum canescens (Michx.) Lehm., *King & Moody-Weis 303*, rocky soil, restored glade.

V, *Mertensia virginica* (L.) Pers. ex. Link, along Bee Creek.

Myosotis verna Nutt., *King and Moody-Weis 314*, lawn.

Brassicaceae

I, *Barbarea vulgaris* R. Brown, *King & Moody-Weis 323,* field, maintained as a food plot.

Boechera canadensis (L.) Al-Shehbaz, *King & Moody-Weis 351*, mesic forest.

I, **N**, **V**, *Brassica rapa* L., in food plots.

I, *Capsella bursa-pastoris* (L.) Medic., *King & Moody-Weis 324*, field maintained as a food plot.

Cardamine concatenata (Michx.) O. Schwarz, *King 293*, floodplain of creek.

C. pensylvanica Muhl. ex Willd., *King & Moody-Weis 305*, rocky soil, restored glade.

Draba cuneifolia Nutt. ex Torr. & A. Gray, *King & Moody-Weis 302*, rocky soil, restored glade.

Leavenworthia uniflora (Michx.) Britton, *King & Moody-Weis 306; Redfearn 39950*, open area in cedar glade.

Lepidium virginicum L., *King & Moody-Weis 90*, roadside.

I, *Microthlaspi perfoliatum* (L.) F.K. Mey. *Redfearn 39943; King & Moody-Weis 326*, disturbed
lawn, along creek bottom.

I, *Nasturtium officinale* R.Br., *King & Moody-Weis 240*, around & in spring-fed pond (pond 18).

Cabombaceae

Brasenia schreberi J.F. Gmel., *Moody-Weis 420*, emergent from pond 13.

Cactaceae

Opuntia humifusa (Raf.) Raf., *King 130*, rocky soil, glade encroached by cedar, savannah/glade.

Campanulaceae

Campanula americana L., *King & Moody-Weis 191*, rocky soil, oak-hickory forest.

Lobelia siphilitica L., *King & Moody-Weis 231*, around & in spring-fed pond (pond 18).

L. spicata Lam., *Moody-Weis 388; King & Moody-Weis 67*, open upland forest, shaded roadside soil, rocky soil, restored glade; , *King & Moody-Weis 163*, rocky soil, savanna/glade.
C, *Triodanis lamprosperma* McVaugh, *King & Moody-Weis 5*, rocky soil, roadside. **S2, G5?**

Caprifoliaceae

N, **V**, *Sambucus canadensis* L., along floodplain at Bee Creek.
Symphoricarpos orbiculatus Moench, *King & Moody-Weis 64*, rocky soil, savanna/glade, restored glade.
Viburnum rufidulum Raf., *King 118*, rocky soil, restored glade.

Caryophyllaceae

I, **N**, *Arenaria serpyllifolia* L. ssp. *serpyllifolia*, *King & Moody-Weis 337*, along main road.
I, *Dianthus armeria* ssp. *armeria* L., *King & Moody-Weis 85*, along main road.
Minuartia patula (Michx.) Mattf., *King and Moody-Weis 337*, roadside.
Sagina decumbens (Elliot) Torr. & A. Gray, *King & Moody-Weis 312A*, lawn.
I, *Saponaria officinalis* L., *King & Moody-Weis 189,* rocky soil, oak-hickory forest.
Silene stellata (L.) Aiton, *Moody-Weis & Dickerson 376*, mesic forest near Mincy Creek.
S. virginica L., *King & Moody-Weis 344*, roadside, rocky soil, savannah/glade.
I, *Stellaria media* (L.) Vill., *King & Moody-Weis, 310*, lawn.

Celastraceae

V, *Euonymus atropurpureus* Jacq., along Bee Creek floodplain.

Ceratophyllaceae

Ceratophyllum demersum L. *Bolluyt 1*, in pond on Drury CA, near access road to Shonda's point.

Cistaceae

N, *Lechea tenuifolia* Michx., *King 121*, rocky soil, rocky soil, savanna/glade.

Clusiaceae

Hypericum hypericoides (L.) Crantz ssp. *multicaule* (Michx. ex Willd.) N. Robson, *King & Moody-Weis 188*, rocky soil, oak-hickory forest.
H. prolificum L., *Moody-Weis 444*, Mincy Conservation Area, on gravel bar at Bee Creek.
H. punctatum Lam., *King & Moody-Weis 2*, rocky soil, roadside.
H. sphaerocarpum Michx., *King & Moody-Weis 129*, rocky soil.

Commelinaceae

Commelina erecta L., *King & Moody-Weis 148,* roadside.
N, *Tradescantia ohiensis* Raf., *King & Moody-Weis 342*, roadside.

Convolvulaceae

N, *Calystegia sepium* (L.) R. Brown, *King & Moody-Weis 248*, rocky soil, lakeside.
Cuscuta pentagona Engelm., *King & Moody-Weis 55*, restored glade, rocky soil, abundant weedy species.
Evolvulus nuttallianus Roemer & Schultes, *King & Moody-Weis 352*, rocky soil, cedar glade.
Ipomoea coccinea L., *King & Moody-Weis 273*, rocky soil, near lake.

Cornaceae

Cornus drummondii C. Meyer, *King & Moody-Weis 220*, roadside, near creek.
C. florida L., *King & Moody-Weis 125, 318*. roadside, glade, oak-forest.
Nyssa sylvatica Marshall, *Moody-Weis 403*, pond 4 emerged.

Cyperaceae

N, *Carex cephalophora* Muhl. ex Willd., *King & Moody-Weis 210*, rocky soil, savanna/glade.
C. hirsutella Mack., *King & Moody-Weis 33*, along creek.
Cyperus echinatus L., *King & Moody-Weis 93*, roadside.
C. strigosus L., *King & Moody-Weis 280*, rocky soil, lakeside.
N, *Scirpus atrovirens* Willd., *King & Moody-Weis 238*, around & in pond.

Dioscoraceae

Dioscorea villosa L., *King & Moody-Weis 328*, mesic forest.

Dipsacaceae

I, *Dipsacus fullonum* L., *King & Moody-Weis 195*, along creek. floodplain.

Ebenaceae

Diospyros virginiana L., *King & Moody-Weis 87, 97; King 91,* lakeside, closed oak-hickory forest and rocky soil, savanna/glade; roadside.

Ericaceae

V, *Vaccinium pallidum* Ait., vicinity of sinkhole pond.

Euphorbiaceae

Acalypha monococca (Engelm. ex A. Gray) Lill. W. Mill. & Ghandi, *King 92, 95, King & Moody-Weis 169,* rocky soil, savanna/glade.
A. virginica L., *King 153*, closed oak-hickory forest.
Croton glandulosus var. *septentrionalis* Muell. Arg., *King & Moody-Weis 264*, oak-hickory forest on S-facing slope.
N, *C. willdenowii* G. L. Webster, *King & Moody-Weis 223, 225*, rocky soil, savanna/glade, roadside near creek, open field, edge of forest.
Euphorbia corollata L., *King & Moody-Weis 260*, closed oak-hickory forest.
E. dentata Michx., *King & Moody-Weis 174*, rocky soil, savanna/glade.
E. maculata (L.) Small, *King & Moody-Weis 250*, lakeside. soil rocky.
Tragia betonicifolia Nutt. *King 104, King & Moody-Weis 53*, rocky soil, savanna/glade,restored glade.

Fabaceae

Baptisia australis (L.) R. Br. var. *minor* (Lehm.) Fernald, *King & Moody-Weis 137*, rocky soil, savanna/glade.

Cercis canadensis L., *King & Moody-Weis 26*, along creek.

Chamaecrista fasciculata (Michx.) E. Greene, *King & Moody-Weis 168*, savanna/glade, soil rocky.

C. nictitans var. *nictitans* (L.) Moench, *King 158; Redfearn 40248*, closed oak-hickory forest, near Drury house.

Cladrastis kentukea (Dum. Cours.) Rudd, *King & Moody-Weis 353*, mesic forest.

N, *Dalea candida* Michx. ex Willd., *King & Moody-Weis 131*, rocky soil, savanna/glade.

N, *D. purpurea* Vent., *King & Moody-Weis 124*, rocky soil, glade.

Desmodium cuspidatum var. *cuspidatum* (Muhl. ex Willd.) Loudon, *Redfearn 40247*.

D. glutinosum (Muhl. ex Willd.) A.W. Wood*, Moody-Weis 369*, moist woods.

N, *D. nuttallii* (Schindler) B. G. Schubert, *King 99*, rocky soil, savanna/glade.

D. paniculatum (L.) DC., *King & Moody-Weis, 242*, around and in pond, S-facing slope, oak-hickory forest.

D. pauciflorum (Nutt.) DC., *King & Moody-Weis 156*, oak-hickory forest.

D. perplexum B.G. Schub., *King & Moody-Weis 261*, oak-hickory forest.

N, *Galactia regularis* (L.) Britton, Sterns & Pogg., *King & Moody-Weis 158*, rocky soil, savanna/glade.

Gleditsia triacanthos L., *Moody-Weis 411*; *King & Moody-Weis 88, 94*, along bank of pond, rocky soil, lakeside.

I, *Kummerowia stipulacea* (Maxim.) Makino, *King & Moody-Weis 246*, roadside.

I, *K. striata* (Thunb.) Schindler, *King & Moody-Weis 217*, roadside.

I, **N**, *Lespedeza cuneata* (Dum. Cours.) G. Don, *Moody-Weis 236, 406; King 83*, rocky soil, savanna/glade.

L. hirta (L.) Hornem., *King & Moody-Weis 269*, rocky soil, savanna/glade.

L. procumbens Michx., *King 78*, rocky soil, savanna/glade.

L. repens (L.) Barton, *King 120*, rocky soil, savanna/glade, rocky soil, restored glade.

L. violacea (L.) Pers., *King & Moody-Weis 134; Redfearn 40218*, rocky soil, savanna/glade.

I, *Medicago lupulina* L., *King & Moody-Weis 339*, roadside, rocky soil, restored glade.

I, *Melilotus albus* Medik., *King and Moody-Weis 102*, bluffs, steep S-facing slope.

I, *M. officinalis* (L.) Pallas, *King & Moody-Weis 105*, rocky soil, bluffs.

Mimosa quadrivalvis L., *King & Moody-Weis 147*, roadside, full sun.

Orbexilum pedunculatum (Mill.) Rydb., *King & Moody-Weis 17*, rocky soil, roadside.

I, *Securigera varia* (L.) Lassen, *King & Moody-Weis 82*, roadside.

Stylosanthes biflora (L.) Britton, Sterns & Pogg., *King & Moody-Weis 170*, rocky soil, savanna/glade.

Tephrosia virginiana (L.) Pers., *King & Moody-Weis 69,* rocky soil, restored glade.
I, *Trifolium campestre* Schreber, *King & Moody-Weis 83*, roadside.

Fagaceae

Quercus alba L., *Moody-Weis 431,* Mincy Conservation Area, *King & Moody-Weis 265*, oak-hickory forest.
Q. falcata Michx., *King & Moody-Weis 157*, oak-hickory forest.
Q. marilandica Muenchh., *King & Moody-Weis 247*, roadside.
V, *Q. macrocarpa* Michx., along Bee Creek.
Q. muehlenbergii Engelm., *Moody-Weis 447, King & Moody-Weis 45,* Mincy Conservation Area, rocky soil, savanna/glade.
Q. stellata Wangenh., *Moody-Weis 412*, open woods near pond, rocky soil, savanna/glade.
Q. shumardii Buckley, *Redfearn 40232*,.
Q. velutina Lam., *King 97*, rocky soil, savanna/glade.

Fumariaceae

Corydalis flavula (Raf.) DC., *Redfearn 39944, King & Moody-Weis 297*, bank & flood plain of Bee creek.

Gentianaceae

Centaurium texense (Griesb.) Fern., *Moody-Weis & Dickerson 379*, rocky soil, open grassy area in glade.

Geraniaceae

Geranium carolinianum L., *King and Moody-Weis 335*, roadside.
V, *G. maculatum* L., along floodplain at Bee Creek.

Hamamelidaceae

Hamamelis vernalis Sarg., *Edmond 384,* Mincy Conservation Area, along Bee Creek.

Heliotropiaceae

N, V, *Euploca procumbens* (Mill.) Diane & Hilger, *J. Slade 21* (MO), open disturbed area, determined by G. Yatskievych and T. Witsell, originally misreported as *Heliotropium europaeum* in Raveill and Yatskievych (2008).
Heliotropium indicum L., *King & Moody-Weis 276*, rocky soil, near lake.
H. tenellum (Nutt.) Torr., *King & Moody-Weis 164*, rocky soil, savanna/glade.

Hydrangeaceae

Hydrangea arborescens L., *King & Moody-Weis 109*, talus slope, N-facing slope.

Hydrophyllaceae

Ellisia nyctelea (L.) L., *King and Moody-Weis 360*, mesic forest.

Iridaceae

I, **N**, *Belamcanda chinensis* (L.) DC., *King & Moody-Weis 196*, roadside.
I, **N**, **V**, *Iris germanica* L., along Bee Creek.
Sisyrinchium campestre E. Bickn., *King and Moody-Weis 315*, rocky soil, savanna.

Juglandaceae

Juglans nigra L., *Moody-Weis 438*, food plot, around spring-fed pond.
Carya cordiformis (Wangenh.) K., *King & Moody-Weis 135*, rocky soil, savanna/glade.
C. texana Buckley, *Moody-Weis 424*, Mincy Conservation Area, oak-hickory forest, rocky soil, savanna/glade.
C. tomentosa (Lam. & Poiret) Nutt., *King 161*, oak-hickory forest.

Juncaceae

Juncus tenuis Willd., *Moody-Weis 391*, upland forest.

Lamiaceae

Blephilia ciliata (L.) Bentham, *King & Moody-Weis 22*. along creek.
Clinopodium glabrum (Nutt.) Kuntze, *King & Moody-Weis 10,* roadside, open glade.
I, *Lamium amplexicaule* L., *King & Moody-Weis 296*, floodplain of creek.
I, **N**, *L. purpureum* L., *King & Moody-Weis 325*, disturbed lawn.
Monarda bradburiana L.C. Beck, *Moody-Weis 385*, open woods.
M. fistulosa L., *King & Moody-Weis 62*, rocky soil, restored glade.
I, *Perilla frutescens* var. *frutescens* (L.) Britton, *King & Moody-Weis 284*, oak-hickory forest.
Prunella vulgaris L. ssp. *lanceolata* (W. Bartram) Hultén, *King & Moody-Weis 41, Moody-Weis 405,* along creek.
Pycnanthemum pilosum Nutt., *King & Moody-Weis 200*, floodplain along creek.
P. tenuifolium Schrader, *Moody-Weis 386, King & Moody-Weis 401*, shaded roadside, openupland forest, oak-hickory forest.
Salvia azurea var. *grandiflora* Benth., *King & Moody-Weis 165*, rocky soil, savanna/glade.
S. lyrata L., *King & Moody-Weis 343,* roadside field.
S. reflexa Hornem., *Redfearn, 40220*.
Scutellaria elliptica Spreng. var. *elliptica* Muhl. ex Spreng., *King & Moody-Weis 4*2, near creek.
S. lateriflora L*., Moody-Weis 393*, open, cedar glade.
S. ovata Hill ssp. *ovata*, *King and Moody-Weis 74, 119*, rocky soil, bluffs, N-facing slope, roadside.
Teucrium canadense L., *King and Moody-Weis 150*, roadside.
Trichostema brachiatum L., *Moody-Weis 392, King & Moody-Weis 267*, roadside, open cedar glade.

Lauraceae

Lindera benzoin (L.) Blume, *King & Moody-Weis, 27*, along creek.

Sassafras albidum (Nutt.) Nees, *King & Moody-Weis 116*, oak-hickory forest, N-facing bluffs.

Lemnaceae

Lemna minor L., *Padgett 628*, small pond on South side of main access road.
N, *Spirodela polyrhiza* (L.) Schleiden, *Padgett 630,* small pond on South side of main access road.
N, *Wolffia brasiliensis* Wedd., *Padgett 629*, small pond on South side of main access road.

Liliaceae

Allium canadense L., *King & Moody-Weis 149*, roadside.
A. stellatum Ker-Gawl., *Redfearn 40215.*
Camassia scilloides (Raf.) Cory, *King & Moody-Weis 316*, rocky soil, savanna.
Erythronium albidum Nutt., *King 291*, flood plain of creek.
N, *E. americanum* Ker Gawl. ssp. *americanum, Brown 3*, Mincy Conservation Area, along Bee Creek.
I, **N**, *Hemerocallis fulva* (L.) L. *King & Moody-Weis 72*, roadside.
Hypoxis hirsuta (L.) Cov., *King & Moody-Weis 319*, roadside.
Maianthemum racemosum (L.) Link, *King & Moody-Weis 358*, mesic woods.
Nothoscordum bivalve (L.) Britton, *King & Moody-Weis 300*, rocky soil, restored glade.
Polygonatum biflorum (Walter) Elliott var. *commutatum* (Schultes f.) Morong, *King & Moody-Weis 356*, mesic forest.
Trillium sessile L., *King & Moody-Weis 317*, savanna.

Linaceae

Linum sulcatum Riddell, *King & Moody-Weis 123*, rocky soil, glade.

Lythraceae

Ammannia coccinea Rathb., *King & Moody-Weis, 251, 252; Redfearn 40243*, rocky soil, lakeside.

Malvaceae

Callirhoe digitata Nutt., *King & Moody-Weis 3*, rocky soil, roadside.
I, **N**, *Hibiscus syriacus* L., *Moody-Weis 443*, wooded edge of road and food plot.

Menispermaceae

Cocculus carolinus (L.) DC., *King & Moody-Weis 271*, near lake.

Moraceae

I, *Maclura pomifera* (Raf.) C. Schneider, *King 116*, rocky soil, savanna/glade.
Morus rubra L., *Moody-Weis 377; King and Moody-Weis 25, 226*, moist woods, edge of forest and along creek.

Oleaceae

Chionanthus virginicus L., *King & Moody-Weis 115, 121*, bluffs on N-facing slope.

Fraxinus americana L., *King & Moody-Weis 357*, rocky soil, savanna/glade, mesic forest.
F. quadrangulata Michx., *King & Moody-Weis 132*, rocky soil, savanna/glade.

Onagraceae

Oenothera filiformis (Small) W.L. Wagner & Hoch, *King & Moody-Weis 256*, field.
O. laciniata Hill, *King & Moody-Weis 151, 346*, food plot roadside.

Orchidaceae

Corallorhiza wisteriana Conrad, *Bowe 8.04*, Mincy Conservation Area, forest along road near pond 13.

Orobanchaceae

V, *Orobanche uniflora* L., at the glade on Bear Cave trail.

Oxalidaceae

Oxalis stricta L., *King & Moody-Weis 78*, roadside, rocky soil, savanna/glade.
O. violacea L. *King & Moody-Weis 301, 320*, roadside, rocky soil, restored glade.

Passifloraceae

N, *Passiflora incarnata* L., *King & Moody-Weis 56*, rocky soil, restored glade.
P. lutea L., *King & Moody-Weis 183; Moody-Weis 397*, rocky soil, glade, savanna/glade.

Papavaraceae

Sanguinaria canadensis L., *Snider 4*, Mincy Conservation Area, along Bee Creek.

Phytolaccaceae

Phytolacca americana L., *King & Moody-Weis 71; Moody-Weis 365*, roadside, mesic woods.

Plantaginaceae

Plantago aristata Michx., *King & Moody-Weis 84*, roadside.
P. virginica L., *King and Moody-Weis 347*, disturbed field, maintained as a food plot.

Platanaceae

Platanus occidentalis L., *King & Moody-Weis 30; Moody-Weis & Dickerson 361*, along creek bank.

Poaceae

I, **N**, *Aegilops cylindrica* Host, *King & Moody-Weis 334*, roadside.
Andropogon gerardii Vitman, *King & Moody-Weis 193,* rocky soil, savanna/glade.
Arundinaria gigantea (Walter) Muhl., *Moody-Weis 457*, Mincy Conservation Area, Bee Creek along roadside.

I, **N**, *Avena fatua* var. *sativa* (L.) Hausskn, *Snider 1*, Mincy Conservation Area, near food plot.
Bouteloua curtipendula (Michx.) Torr., *King & Moody-Weis 167*, rocky soil, savanna/glade.
Bromus pubescens Muhl. ex Willd., *Moody-Weis 437,* Mincy Conservation Area, dry open woods.
I, *B. racemosus* L., *King & Moody-Weis 15*, rocky soil, roadside.
I, *B. tectorum* var. tectorum L., *King & Moody-Weis 24*, along creek.
Chasmanthium latifolium (Michx.) H.O. Yates, *Moody-Weis 378; King & Moody-Weis 182*, mesic woods, rocky soil, savanna/glade.
Danthonia spicata (L.) P. Beauv. ex Roem. & Schult., *King 101; King & Moody-Weis 19*, rocky soil, roadside, savanna/glade.
I, *Echinochloa crusgalli* (L.) P. Beauv., *King & Moody-Weis 281*, rocky soil, lakeside.
Elymus hystrix L., *King & Moody-Weis 92*, rocky open woods, roadside.
N, *E. riparius* Wieg., *Moody-Weis 421*, rocky open woods.
E. virginicus L var. *virginicus*., *King & Moody-Weis 203*, rocky soil, savanna/glade.
I, *Eragrostis cilianensis* (All.) Vignolo ex Janch., *Moody-Weis 435*, edge of a field maintained as a food plot.
I, *Festuca pratensis* Hudson, *King & Moody-Weis 12*, rocky soil, roadside.
Hordeum pusillum Nutt., *King & Moody-Weis 14, 336*, rocky soil, roadside.
Leersia oryzoides (L.) Sw., *King & Moody-Weis 239*, around/in spring-fed pond (pond 18).
N, *Muhlenbergia frondosa* (Poir.) Fern., *Moody-Weis 417*, rocky open woods.
Panicum acuminatum var. *acuminatum* Sw., *King & Moody-Weis 9*, rocky soil, roadside.
P. capillare L., *King & Moody-Weis 279*, rocky soil, near lake.
P. dichotomum L., *King 131, King & Moody-Weis 184*, rocky soil, savanna/glade.
P. latifolium L., *Moody-Weis 389,418,* dry, upland forest.
P. linearifolium Scribn., *King & Moody-Weis 11, 202*, rocky soil, roadside, savanna/glade.
P. sphaerocarpon Elliott var. *sphaerocarpon* Elliott, *King & Moody-Weis 18; Moody-Weis 390*, rocky soil, roadside, dry upland forest.
P. virgatum L., *King & Moody-Weis 212*, savanna/glade.
I, *Setaria glauca* (L.) P. Beauv., *King & Moody-Weis 204, 230; Moody-Weis 439*, rocky soil, field maintained as food plot, savanna/glade.
I, *Sorghum halepense* (L.) Pers., *King & Moody-Weis 91*, roadside.
Sphenopholis obtusata (Michx.) Scribn., *King & Moody-Weis 13*, rocky roadside soil.
Tridens flavus (L.) A. Hitchc., *Moody-Weis 440; King 107*, field maintained as food plot.
I, **N**, *Triticum aestivum* L., *Snider 2*, Mincy Conservation Area, near food plot.

Polemoniaceae

V, *Phlox divaricata* L., Mincy Conservation Area, along Bee Creek.
P. pilosa L. ssp. *ozarkana* (Wherry) Wherry, *King & Moody-Weis 321, 345*, roadside.

Polemonium reptans L., *Edmond 380*, Mincy Conservation Area, along Bee Creek.

Polygalaceae

Polygala senega L., Moody-Weis 364, 450, mesic woods near Mincy Creek.

Polygonaceae

Fallopia scandens (L.) Holub, *King & Moody-Weis 283*, near lake.
Persicaria hydropiperoides (Michx.) Small, *King & Moody-Weis 235*, around & in pond.
P. lapathifolia (L.) Gray, *King & Moody-Weis 278*, rocky soil, near lake.
P. pensylvanica (L.) M. Goméz, *King & Moody-Weis 274*, near lake.
I, *P. maculosa* Gray, *King & Moody-Weis 194*, along creek. floodplain.
P. virginiana (L.) Gaertn., *King & Moody-Weis 263*, oak-hickory forest.

Portulacaceae

Claytonia virginica L., *King 295*, floodplain of creek.

Primulaceae

Dodecatheon meadia L., *Bowe 110.04*, Mincy Conservation Area, Bear Cave trail, near glade.

Ranunculaceae

Aquilegia canadensis L., *King & Moody-Weis 114*, bluffs.
N, *Clematis pitcheri* Torr. & A. Gray var. *pitcheri*, *Moody-Weis & Dickerson 362*, mesic woods along creek bank.
Delphinium carolinianum Walt., *King & Moody-Weis 144*, rocky soil, savanna/glade.
D. tricorne Michx., *King & Moody-Weis 327*, mesic forest.
Enemion biternatum Raf. , *King & Moody-Weis 354*, steep slopes, mesic forest.
Ranunculus fascicularis Muhl. ex Bigelow, *King & Moody-Weis 40, 307; Redfearn 39940,* edge of creek, rocky soil, savanna/glade.
R. hispidus var. *nitidus* (Elliot) T. Duncan, *King & Moody-Weis 298*, floodplain of creek.
R. micranthus Nutt., *King 294*, floodplain of creek.
Thalictrum thalictroides (L.) Eames & B. Boivin, *King 292*, floodplain of creek.

Rhamnaceae

Berchemia scandens (J. Hill) K. Koch, *King & Moody-Weis 100*, rocky soil, bluffs on steep SW-facing slope.
Ceanothus americanus L., *King & Moody-Weis 60*, rocky soil, restored glade.
Rhamnus caroliniana Walt., *King 165, King & Moody-Weis 227, 407; Moody-Weis 400, Redfearn 40221*, near creek, open field, bank of farm pond, edge of forest, edge & in closed oak hickory forest.

Rosaceae

Amelanchier arborea (F. Michx.) Fern., *King & Moody-Weis 46, Moody-Weis 410*, bank of pond, near creek.

Geum canadense Jacq., *Moody-Weis 384, 413*, near creek, edge of field plot and woods.

G. vernum (Raf.) Torr. & A. Gray, *Edmond 383*, Mincy Conservation Area, along Bee Creek.

N, *Potentilla norvegica* L., *King & Moody-Weis 104*, bluffs, steepSW-facing slope.

I, **N**, *Prunus mahaleb* L., *King & Moody-Weis 112, 322*, N-facing talus slope, field, maintained as a food plot.

P. mexicana S. Watson, *King & Moody-Weis 166; Redfearn 38839*, rocky soil, savanna/glade, edge of old field.

P. serotina Ehrh., *King 166*, closed oak-hickory forest.

I, **N**, *Rosa multiflora* Thunb., *King & Moody-Weis, 341*, roadside field.

R. setigera Michx., *King 100*, rocky soil, savanna/glade; *King & Moody-Weis 152*, roadside.

N, *Rubus flagellaris* Willd., *King & Moody-Weis 330*, mesic forest.

R. occidentalis L., *King & Moody-Weis 340*, roadside.

Rubiaceae

Cephalanthus occidentalis L., *King & Moody-Weis 95*, lakeside. soil rocky.

N, *Diodia virginiana* L., *King & Moody-Weis 249*, rocky soil, lakeside.

Galium aparine (Gren. Et Godr.) Rebb., *King and Moody-Weis 329*, mesic forest.

G. circaezans Michx. var. *hypomalaceum* Fern., *King 167*, closed oak-hickory forest.

G. concinnum Torr. & A. Gray, *King & Moody-Weis 37; Moody-Weis & Dickerson 368, Moody-Weis 433*, mesic woods, along creek, along food plot.

N, *G. obtusum* Bigelow, *Moody-Weis 419*, rocky, open woods.

G. pilosum var. *pilosum* Aiton, *King 106, King & Moody-Weis 86*, rocky soil, savanna/glade, roadside.

N, *Houstonia pusilla* Schoepf, *Weckenborg 12*, along Mincy Creek.

H. purpurea var. *purpurea* L., *King & Moody-Weis 36*, near creek.

Stenaria nigricans (Lam.) Terrell, *King & Moody-Weis 061; Moody-Weis 396*, rocky soil, restored glade, cedar glade.

Rutaceae

V, *Ptelea trifoliata* L. Mincy Conservation Area, along Bee Creek.

Salicaceae

Salix caroliniana Michx., *Moody-Weis & Dickerson 367; Redfearn 40224*, bank of creek.

S. nigra Marsh., *King & Moody-Weis 98*, rocky soil, steep SW-facing slope.

Sapotaceae

Sideroxylon lanuginosum Michx. ssp. *oblongifolium* (Nutt.) T.D. Penn., *Moody-Weis 371; King & Moody-Weis 48, 180*, moist woods, slight slope,near creek, rocky soil, savanna/glade.

Saxifragaceae

Heuchera americana var. *hirsuticaulis* (Wheelock) Rosend., Butt. & Lak., *Edmond 378*, Mincy Conservation Area, forest.

H. arborescens L., *Moody-Weis 363*, mesic woods near Mincy Creek.

Scrophulariaceae

Agalinus tenuifolia (Vahl.) Raf., *King & Moody-Weis 257; Redfearn 40236*, field.

Aureolaria grandiflora (Benth.) Pennell, *King & Moody-Weis 259, Redfearn 40234*, old field.

N, *Castilleja coccinea* (L.) Sprengel, *Moody-Weis & Dickerson 366*, along Mincy Creek.

Dasistoma macrophylla (Nutt.) Raf., *Moody-Weis 454*, Mincy Conservation Area, roadside near Bee creek.

Mimulus alatus Aiton., *King & Moody-Weis 234*, around & in pond.

I, **N**, *Paulownia tomentosa* (Thunb.) Steudel, *King & Moody-Weis 59*, rocky soil, restored glade.

Pedicularis canadensis L., *King & Moody-Weis 29*, along creek.

Penstemon arkansanus Pennell, *King & Moody-Weis 333*, roadside field.

P. digitalis Nutt. ex Sims, *King & Moody-Weis 32*, along creek.

I, *Verbascum blattaria* L., *King & Moody-Weis 75, 76*, roadside

I, *V. thapsus* L., *King & Moody-Weis 154*, roadside.

I, *Veronica arvensis* L., *King & Moody-Weis 313*, lawn.

Simaroubaceae

I, *Ailanthus altissima* (Mill.) Swingle, *King & Moody-Weis 145; Moody-Weis & Dickerson 375,* along creek bank, roadside.

Smilacaceae

Smilax bona-nox L., *King & Moody-Weis 106, 107; Moody-Weis 399; King 163*, bluffs, steep SW-facing slope, oak-hickory forest.

S. hispida Muhl. ex Torr., *Edmond 375*, Mincy Conservation Area, forest.

Solanaceae

Physalis longifolia Nutt. var. *subglabrata* (Mack. & Buch) Cronquist, *King & Moody-Weis 277,* near lake.

Solanum carolinense L., *King & Moody-Weis 66*, rocky soil, restored glade.

Sparganiaceae

Sparganium androcladum (Engelm.) Morong, *King & Moody-Weis 244*, around and in pond.

Staphyleaceae

V, *Staphylea trifolia* L. Mincy Conservation Area, along Bee Creek.

Ulmaceae

Celtis laevigata Willd. var. *texana* Sarg., *Bowe 113.04*, Mincy Conservation Area, Bear Cave trail.
C. occidentalis L., *King 105*, rocky soil, savanna/glade.
C. tenuifolia Nutt., *King & Moody-Weis 44; Redfearn 40226*, near creek.
Ulmus alata Michx., *King & Moody-Weis 43, 126*, near creek, rocky soil, savanna/glade, glade, oak-hickory forest.
U. americana L., *Moody-Weis 414*, open woodlands.
U. rubra Muhl., *King & Moody-Weis 50, 110*, near creek, talus slope, N-facing slope.

Urticaceae

Pilea pumila (L.) A. Gray, *King & Moody-Weis 237*, around & in pond.

Valerianaceae

N, *Valerianella radiata* (L.) Durf., *King & Moody-Weis 332*, roadside.

Verbenaceae

Glandularia canadensis (L.) Nutt., Small, *King & Moody-Weis 8*, roadside.
Phryma leptostachya L., *Moody-Weis 370, 416*, moist woods, slight slope.
Verbena simplex Lehm., *King & Moody-Weis 199, 153; Moody-Weis 394* roadside cedar glade.
V. stricta Vent., *Redfearn 40251*.
I, **N**, *Vitex negundo* L., *King & Moody-Weis 255; Redfearn 40250*, field, edge of woods.

Violaceae

Hybanthus concolor (T.F. Forst.) Spreng., *Edmond 385*, Mincy Conservation Area, along Bee Creek.
Viola bicolor Pursh., *King 290*, floodplain of creek.
V. pedata L., *King & Moody-Weis 308*, rocky soil, savanna/glade.
V. sororia Willd., *King & Moody-Weis 299; Redfearn 39941*, floodplain of creek.
V. striata Aiton, *Redfearn 39942*, floodplain of creek.

Vitaceae

Ampelopsis cordata Michx., *King & Moody-Weis, 111, 228*, open field and forest edge, talus, N-facing slope.
Parthenocissus quinquifolia (L.) Planch., forest (see King, 2000).
Vitis aestivalis var. *aestivalis* Michx., *King 168, 169; King & Moody-Weis, 65, 103*, bluffs, steep S-facing slope, rocky soil, restored glade.
V. cinera (Engelm.) Engelm. ex Millardet, *King & Moody-Weis 155*, oak-hickory forest.
V. vulpina L., *Moody-Weis 409, 430*, Mincy Conservation Area, along bank of farm pond.

NEW COUNTY RECORDS OF MISSOURI PLANTS FROM THE POWELL GARDENS HERBARIUM

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The herbarium of the University of Missouri's Kansas City campus (UMKC) was started when Norlan Henderson joined the faculty there in 1964. For many years, this collection grew rapidly, mainly through Dr. Henderson's prolific collecting activities in the United States and his active program of specimen exchanges with various other institutions around the world.

The UMKC herbarium also attracted a loyal following among botanists in the Kansas City region. The Kansas City Chapter of the Missouri Native Plant Society met there regularly and many of its members volunteered in the herbarium, assisting with processing, mounting, and curation of specimens. Several of chapter's mem-bers also became seasoned plant collectors, and the herbarium holdings were enriched through the activities of Patrick Delozier, Linda Ellis, Jay Raveill, and others.

By the time of Dr. Henderson's retirement in 1986, the holdings had grown to exceed 35,000 specimens. After, 1986, however, the herbarium went into a period of decline (Yatskievych, 1999). Henderson's replacement, Steven Wolf, left after a few years when it became obvious that the campus was eliminating much of its botany curriculum. Faced with the grim possibility that the herbarium would be discarded, in the early 1990s Dr. Hen-derson negotiated a transfer of the entire collection to Powell Gardens, a botanical garden near Kingville, southeast of Kansas City. It has been on permanent loan there ever since, technically still owned by the University of Missouri system, but receiving no financial support from it.

For more than fifteen years after this transfer, Dr. Henderson continued to serve as a volunteer curator, not only caring for the specimens but actively adding to the holdings through his con-tinuing field work. However, a few years ago, age began to catch

up with Dr. Henderson, who was born in 1915, and he was forced to retire from the herbarium a second time. At this point, the present author, who had been a curator at the SMS herbarium at Missouri State University in Springfield for several decades, had recently relocated to the Kansas City area and was convinced to take over as volunteer curator of the UMKC herbarium.

Many of the specimens in the UMKC herbarium are represented in other Missouri herbaria through duplicates sent to these institutions by Dr. Henderson. However, there had been no previous attempts to inventory the UMKC holdings through databasing of the specimen labels. As a result of the author's efforts to prepare such a database, a number of county records have come to light. The following 113 records for counties, primarily in northwestern Missouri, have not been reported in the floristic literature (Steyermark 1963; Henderson, 1980; Yatskievych, 1999, 2006) and previously had not been recorded in the Flora of Missouri Project's (2011) database.

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COUNTY RECORDS

Agalinis tenuifolia — **Hickory County**: Along MO 64 ca 2 mi. northwest of Nemo; rocky roadside; 20 Sep 1968; *Henderson 68-931*.

Alyssum alyssoides — **Cass County**: Along US 71 ca ½ mi. north of junction of MO 58; roadside embankment; 28 May 1966; *Henderson 66-61*.

Anagallis arvensis — **Hickory County**: Along US 54 ca 2 mi. west of Preston; roadside; 14 July 1967; *Henderson 67-1265*. **Lafayette County**: Along US 24 ca 1 mi. east of Levasy; roadside embankment; 29 June 1967; *Henderson 67-965*. **Pettis County**: Near old Caretakers House, T46N R21W Sec. 03; rocky disturbed area; 03 Oct 1982; *Delozier 664*.

Andropogon ternarius var. *ternarius* — **Texas County**: Along MO 17 ca. 0.1 mi. north of Roby, T33N R11W Sec. 3;Sep 1986; *Ellis 86-143*.

Anemone caroliniana — **Pettis County**: Ca 15 mi. southwest of Sedalia; open pasture; 05 Apr 1986; *Lyle 86-10*.

Astragalus crassicarpus — **Johnson County**: Powell Gardens. Along East Ridge; rocky slope; 24 Apr 1998; *Henderson & Fries 98-03*.

Baptisia alba var. *macrophylla* — **Platte County**: Prairie View Road at 89th Terrrace; prairie remnant; 22 Apr 1983; *Delozier & Raveill 1280*.

Chaenorhinum minus ssp. *minus* — **Worth County**: W. of Grant City; roadside; 01 June 1983; *Delozier & Raveill 1125*.

Chamaecrista fasciculata — **Laclede County**: Above Lawson Cave; hillside; 17 July 1969; *Myers s.n*

Clematis terniflora — **Jackson County**: 19th Street in Independence between Scott & Sterling Avenues; wet ground along RR tracks; 30 Sep 1982; *Delozier 588*.

Clematis virginiana — **Lafayette County**: Along Co. Rd. FF ca 1 mi. west of junction with MO 131; climbing into low trees, in low area; 13 Aug 1968; *Henderson 68-768*.

Cornus foemina ssp. *racemosa* — **Holt County**: Open field just west of county line on US 59; edge of wooded area; 23 July 1967; *Goodnight 46-67*.

Croton glandulosus var. *septentrionalis* — **Christian County**: Along MO 14 ca 3 mi. west of Sparta; roadside embankmnet; 02 Sep 1968; *Henderson 68-888*.

Dasistoma macrophylla — **Stone County**: Cedar Hollow Resort, T22N R24W Sec. 24; yard; 04 July 1987; *Ellis 87-155*. **Iron County**: Stout Creek Shut-In ca 2.5 mi. east of Arcadia on MO 72. T33N R43W S03, Alt. ca 900 ft; edge of creek; 11 July 1963; *Redfearn 12713*.

Delphinium carolinianum ssp. *virescens* — **DeKalb County**: Along County Road. C ca 6 mi. north of junction with US 36; railroad ambankment; 18 June 1968; *Henderson 68-341*. **Johnson County**: Along MO 58 ca 1 mi. west of Kingsville; roadside embankment; 03 June 1967; *Henderson 67-651*. **Washington County**: Washington State Park; calcareous slope in woods; 23 Apr 1967; *Brawner s.n.*

Fallopia scandens — **Buchanan County**: T55N R35W Sec. 12; roadside; 11 Sep 1983; *Delozier 389*.

Galium aparine — **Holt County**: Just west of county line by US 59 bridge, south of road; hillside; 06 July 1968; *Goodnight 289-68*.

Galium obtusum ssp. *obtusum* — **St. Clair County**: Along MO 13, ca 3 mi. north of Osceola; wooded hillside; 28 July 1967; *Henderson 67-1300*.

Gentiana alba — **Camden County**: At US 54 bridge across the Little Niangua River; rocky hillside; 20 Sep 1968; *Henderson 68-934*.

Houstonia nigricans var. *nigricans* — **Ray County**: T53N R29W Sec 23; limestone glade; 01 Oct 1982; *Delozier 643*.

Houstonia pusilla — **Jasper County**: Along US 66 ca 4 mi. west of Carthage; roadside embankment; 02 Apr 1968; *Henderson 68-15*. **McDonald County**: Along MO 90 ca 3 mi. east of Noel; roadside; 24 Mar 1967; *Henderson 67-10*.

Humulus lupulus — **Henry County**: T41N R26W Sec. 8; moist roadside soil, climbing on shrubs & small trees; 07 Sep 1983; *Delozier 368*.

Isopyrum biternatum — **Lafayette County**: 4 miles west of Odessa on Hwy. TT; along creek bank; 20 Apr 1989; *Smith 14*.

Linum sulcatum var. sulcatum — **Henry County**: Along MO 13 ca 10 mi. south of Clinton; roadside embankment; 09 June 1992; *Henderson 92-184*.

Lomatium foeniculaceum — **Johnson County**: Powell Gardens. Along Bryon Schultz Nature trail, vicinity of Devil's Ridge. 39.02N, 92.23W. Elev. ca 899 ft; open upland prairie; 27 Apr 2011; *Redfearn s.n.*.

Ludwigia alternifolia — **Cass County**: Ca.3 mi. west of V, T46N R30W Sec. 1; dry, weedy, fallow field; 23 Aug 1973; *Norton 376/73*.

Lycopus americanus — **Holt County**: Squaw Creek Wildlife Area, T61N R38W Sec. 30; marshy disturbed area; 11 Sep 1982; *Delozier, Gibbs & Howard 407*.

Mentha canadensis — **Ray County**: T52N R29W Sec. 7; pond bank; 21 Aug 1982; *Delozier & Gibbs 134*.

Monarda punctata — **Pettis County**: Along service road of US 50 Ca 1 mi. west of Sedalia, persisting after wildfllower planting; roadside; 17 July 1993; *Henderson 92-254*.

Myosurus minimus — **Caldwell County**: T55N R29W; roadside; 19 May 1983; *Delozier & Raveill 964*. **Henry County**: 5 mi. south of Urich; corn stubble; 04 May 1984; *Delozier & Raveill 1544*.

Nepeta cataria — **Gentry County**: East of Strawberry; roadside; 31 May 1983; *Delozier & Raveill 1104*.

Oenothera biennis — **Atchison County**: Along US 136, ca 2 mi. west of Rockport; roadside embankment; 04 Aug 1968; *Henderson 68-742*. **Holt County**: Near Nodaway River by US 59; river bank; 23 Sep 1967; *Goodnight 61-67*.

Oxalis dillenii — **Atchison County**: Along Co. Rd. E, ca 1 mi. east of Langdon; roadside; 04 Aug 1968; *Henderson 68-752*. **DeKalb County**: Along Co. Rd. C, near junction with MO 6; recently disturbed roadside; 18 June 1968; *Henderson 68-355*.

Oxalis stricta — **Atchison County**: Dirt road north of Corning; roadside; 27 June 1984; *Delozier & Ellis 1562*. **Texas County**: Prewitt Springs area of the Mark Twain National Forest; 30 July 1970; *Myers s.n*

Papaver dubium — **Taney County**: Along MO 76, ca 2 mi. west of Bradlyville; roadside; 10 May 1966; *Ellis 146*.

Perilla frutescens — **Andrew County**: T59N R36W Sec. 8; partial shade in pasture; 15 Sep 1982; *Delozier 468*. **Cass County**: 2.3 mi. south of intersection of Hwys 7 & 58, 0.3 mi. east on Farm Road, T46N R31W Sec 32; under *Maclura pomifera* on grazing land; 16 Sep 1973; *Norton 387/73*. **Henry County**: Along MO 7 ca 6 mi. northwest of Coal; low roadside; 07 Oct 1966; *Henderson 66-1097*.

Persicaria amphibia — **Cass County**: Along Hwy 7, 1 mi. south of intersection with Hwy 58. T46N R30W Sec 29; roadside dirch; 16 Sep 1973; *Norton 386/73*.

Persicaria hydropiper — **Bates County**: Along US 71 ca 2 mi. south of Archie; wet roadside; 27 Aug 1966; *Henderson 66-806*. **Benton County**: West of Campground House; rocky cherty soil along drainage area, disturbed open area; 26 July 1985; *Castaner 8738*. **Douglas County**: Vicinity of Holy Cliff on Indian Creek ca 3 mi. northeast of Topaz, T26N R11W Sec 3; rich low woods; 14 Aug 1969; *Redfearn 26390*.

Persicaria hydropiperoides — **Lawrence County**: About pond, 1.5 mi. west of Rescue; wet open ground; 18 Sep 1957; *Palmer 66612*.

Persicaria longiseta — **Jackson County**: 5500 Rockhill Road; lawn weed; 27 Aug 1982; *Delozier 165*.

Persicaria maculosa — **Benton County**: Adjacent to drawn down, periodically flooded; open area next to Marina; 26 July 1985; *Castaner s.n.* **Polk County**: Graydon Springs. T32N R23W Sec. 31; wooded slope; 27 Oct 1963; *Redfearn s.n*.

Persicaria pensylvanica — **Camden County**: East bank of Niangua river near Hwy 54; T37N R19W Sec 19 SE¼; alluvil soil; 05 Sep 1969; *Redfearn 26590*. **Holt County**: Just west of county line of US 59; open field; 23 July 1967; *Goodnight 13-67*. **Shannon County**: Sandy gravel bar on Current River just north of Akers Ferry. T31N R06W Sec 23 N½, Station 25; abundant throughout gravel bar; 14 Sep 1969; *Redfearn 1334*.

Persicaria punctata — **Andrew County**: T59N R36W Sec. 08; creek bank; 15 Sep 1982; *Delozier 456*. **Linn County**: South of Camp Blue Bird; woods; 27 Sep 1985; *Castaner 9005*.

Phemeranthus parviflorus — **St. Francois County**: South of Hwy. DD, ca 0.7 mi east of Hwy. H, Alt. 1150 ft; old granite quarry; 17 July 1974; *Redfearn 12681*.

Physostegia virginiana ssp. virginiana — **Camden County**: southeast of Climax Springs; prairie glade on hillside; 02 Aug 1968; *Myers s.n.* **Holt County**: Just west of county line on US 59; open field; 23 Aug 1967; *Goodnight 186-67*.

Plantago lanceolata — **Grundy County**: South of Trenton; roadside; 11 July 1984; *Delozier 1594*.

Plantago rugelii — **Gentry County**: East of Strawberry; roadside; 31 May 1983; *Delozier & Raveill 1106*. **Montgomery County**: I-70 Rest Area; roadside; 10 Oct 1983; *Delozier, Raveill, & Ellis 1512*.

Polygala incarnata — **Polk County**: Camp Fire Girls Camp at Graydon Springs, ca 2 mi. southwest of Eudora, T32N R23W Sec 31; open field; 07 July 1964; *Eggers 1010*. **Ray County**: T52N R29W Sec. 7; lawn; 21 Aug 1982; *Delozier & Gibbs 138*.

Polygala sanguinea — **Chariton County**: Along MO 5, ca 8 mi. south of Marceline; roadside; 24 June 1968; *Henderson 68-454*.

Polygala verticillata — **Cass County**: Dr. Steven's farm ca 20 mi. south of Kansas City; open woods; 29 July 1965; *Henderson 65-594*. **St. Clair County**: Along MO 13, ca 3 mi. north of Osceola; margin of woodland; 28 July 1967; *Henderson 67-1299*.

Polygonum aviculare — **Atchison County**: Southwest Atchison County; sandy soil near Missouri River; 27 June 1984; *Delozier 1573*. **Bates County**: East of Rich Hill; roadside; 28 Aug 1984; *Delozier 1607*. **Caldwell County**: 3 mi. southeast of Braymer; roadside; 11 July 1984; *Delozier 1603*. **Chariton County**: Fishing access to Grand River, Brunswick; disturbed area; 08 Aug 1983; *Delozier & Raveill 1414*. **Lafayette County**: T49N R25W Sec. 20; roadside; 17 Sep 1982; *Delozier 495*. **Montgomery County**: I-70 Rest Area; roadside; 10 Oct 1983; *Delozier 1508*.

Prunella vulgaris — **Andrew County**: T59N R36W Sec. 11; roadside; 15 Sep 1982; *Delozier 488*. **Cass County**: 1.4 mi. south of Hwy 58 on north/south farm road, 2.0 mi. west of Strasburg; weedy field, wet bottomland; 08 July 1973; *Norton 172/115*.

Pycnanthemum pilosum — **Ray County**: T52N R29W Sec. 7; open woods; 21 Aug 1982; *Delozier & Gibbs 122*.

Pycnanthemum tenuifolium — **Bates County**: Along US 71, ca 2 mi. north of Butler; roadside; 20 June 1965; *Henderson 65-382*.

Ranunculus flabellaris — **Dallas County**: Bennett Springs; along spring branch; 05 July 1963; *Redfearn 12640*.

Ranunculus hispidus var. *hispidus* — **Dallas County**: Along MO 32, ca 9 mi. east of Buffalo; rocky hillside; 05 May 1967; *Henderson 67-366*.

Ranunculus hispidus var. nitidus — **Holt County**: By gravel road, T59N R37W Sec.12; hillside; 02 May 1968; *Goodnight 252-68*.

Ranunculus micranthus — **Daviess County**: Along Hwy 60, south of Pattonsburg; stream bank; 29 Apr 1989; *Hibbs 25*.

Ranunculus recurvatus var. recurvatus — **Polk County**: Camp Fire Girls Camp at Graydon Springs, ca 2 mi. southwest of Eudora, T32N R23W Sec 31; along spring branch; 08 May 1963; *Eggers 518*.

Ranunculus sceleratus var. sceleratus — **Carroll County**: Aong levee, ca 2 mi. south of Carrolton; low roadside; 21 May 1966; *Henderson 66-312*.

Rumex acetosella — **Harrison County**: Just across Iowa State Line on Hwy. 69; open field and roadside ditch, clay soil; 28 May 1963; *McWilliams 615*. **Lewis County**: Along MO 156, ca 4 mi. east of the Knox County Line; roadside embankment; 23 May 1967; *Henderson 67-570*. **Taney County**: Along US 61, ca 5 mi. south of Hannibal; roadside; 23 May 1967; *Henderson 67-58*.

Rumex altissimus — **Shannon County**: South of Jam-Up cave, T27N R06W S09. Alt ca 900 ft, Site 1; old field; 20 July 1969; *Redfearn 848*.

Sabatia angularis — **Pettis County**: Geischen Prairie, ca 10 mi. southeast of Sedalia; prairie; 30 July 1994; *Geischen s.n*

Schizachyrium scoparium var. *scoparium* — **Buchanan County**: County Road 10 west of Hwy 59; standing water in roadside ditch; 24 Sep 1965; *Amorosa 65-18*.

Scutellaria lateriflora — **Stone County**: Cedar Hollow Resort, T22N R24W S34; yard; 04 July 1987; *Ellis 87-166*.

Trifolium incarnatum — **Cass County**: Ca 1 mi. north of Cleveland; railroad right-of-way; 14 May 1966; *Henderson 66-258*.

Trifolium pratense — **Cass County**: Along railroad in Belton; roadside; 22 May 1965; *Henderson 65-165*.

Trifolium repens — **Cass County**: Along railroad, ca 2 niles southeast of Belton; prairie; 28 May 1966; *Henderson 66-366*. **Holt County**: ½ mi. west of county line on US 59; 06 Aug 1967; *Goodnight 70-67*.

Verbascum blattaria — **Platte County**: Near Camden; roadside; 12 July 1983; *Delozier & Raveill 1291*.

Verbena hastata — **Cass County**: Between railroad and Hwy 58, 1 mi. east of Pleasant Hill.; waste area; 29 July 1973; *Norton 240/73*.

Verbena ×rydbergii — **Cass County**: Along Co. Rd. M, ca ½ mi. north of Gunn City; roadside; 26 June 1968; *Henderson 68-503*.

Veronica peregrina — **Gentry County**: East of Strawberry; cultivated field; 31 May 1983; *Delozier & Raveill 1098*.

Veronica polita — **Clay County**: Watkins Mill; parking lot; 06 Mar 1983; *Delozier & Gibbs 802*. **Platte County**: Farley Post Office; lawn; 15 Apr 1983; *Delozier 836*.

Veronica serpyllifolia var. *serpyllifolia* — **Jackson County**: 505 W 91st Street, KCMO; bluegrass suburban lawn; 26 Apr 1985; *Delozier 1671*.

Vicia villosa — **Greene County**: North Springfield; roadside soil; 17 May 1962; *Redfearn 9950*. **Vernon County**: Along US 71, ca ½ mi. south of Bates county line; planted along roadside for erosion control, becoming established; 23 June 1992; *Henderson 96-261*.

Viola bicolor — **Livingston County**: Ludlow; cultivated field; 04 May 1983; *Raveill 1467*.

Viola palmata — **Hickory County**: Along US 54, ca 1 mi. east of Hermitage; margin of woods; 22 Apr 1967; *Henderson 67-287*.

Vitis aestivalis var. *aestivalis* — **Cass County**: Wet bottomland area. 1.4 mi. south of Hwy 58 on N/S farm rd, 2 mi. west of Strasburg; weedy, fallow field; 15 July 1973; *Norton 194/73*.

Vitis cinerea — **Holt County**: Ca ½ mi. east of Hwy. U, T59N R37W Sec 14; roadside; 02 May 1968; *Goodnight 247-68*.

Vitis rupestris — **Cass County**: Damp bottomland area. 1.4 mi. south of Hwy 58 on N/S Farm Road, ca 2. mi. west of Strasburg; weedy field; 08 July 1973; *Norton 181/73*.