NOTEWORTHY RECORDS OF MISSISSIPPI VASCULAR PLANTS

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ABSTRACT

Herbarium study and field exploration, primarily in the Longleaf Pine and Coastal Pine Meadows regions, have yielded the following new species to Mississippi: *Chamaecrista deeringiana, Cladium mariscoides, Dichanthelium fusiforme, Dryopteris ludoviciana, Eleocharis elongata, E. melanocarpa, E. robbinsii, Isoetes louisianensis, Lobelia boykinii, Mitreola angustifolia, Rhynchospora decurrens, R. globularis var. pinetorum, R. harperi, Rhynchospora scirpoides, Sagittaria isoetiformis, Scleria reticularis sensu stricto, Spiranthes brevilabris var. floridana, Utricularia olivacea*. The following are previously known from the state, but are rarely collected, or represent significant range extensions within Mississippi: *Agrimonia incisa, Aristida condensata, A. simpliciflora, A. tuberculosa, Burmannia biflora, Calopogon multiflorus, Coelorachis cylindrica, Dichanthelium erectifolium, Elyoneurus tripsacoides, Gordonia lasianthus, Isoetes melanopoda, Juncus gymnocarpus, Marshallia trinervia, Myriophyllum laxum, Parnassia grandifolia, Polygala leptostachys, Potamogeton epihydrus, Rhynchospora curtissii, R. fascicularis var. distans, R. nitens, R. tracyi, Ruellia pedunculata* ssp. *pinetorum, Sorghastrum apalachicolense, Stylisma aquatica, S. pickeringii, Tridens carolinianus*.

RESUMEN

Los estudios de herbario y exploraciones de campo en las zonas de pino palustre y de prados costeros con pinos, han dado las siguientes especies nuevas para Mississippi: *Chamaecrista deeringiana, Cladium mariscoides, Dichanthelium fusiforme, Dryopteris ludoviciana, Eleocharis elongata, E. melanocarpa, E. robbinsii, Isoetes louisianensis, Lobelia boykinii, Mitreola angustifolia, Rhynchospora decurrens, R. globularis var. pinetorum, R. harperi, Rhynchospora scirpoides, Sagittaria isoetiformis, Scleria reticularis sensu stricto, Spiranthes brevilabris var. floridana, Utricularia olivacea*. Las siguientes se conocían previamente del estado, pero se colectan raramente o representan una ampliación significativa de su areal er Mississippi: *Agrimonia incisa, Aristida condensata, A. simpliciflora, A. tuberculosa, Burmannia biflora, Calopogon multiflorus, Coelorachis cylindrica*, Dichanthelium *erectifolium, Elyoneurus tripsacoides, Gordonia lasianthus, Isoetes melanopoda, Juncus gymnocarpus, Marshallia trinervia, Myriophyllum laxum, Parnassia grandifolia, Polygala leptostachys, Potamogeton epihydrus, Rhynchospora curtissii, R. fascicularis var. distans, R. nitens, R. tracyi, Ruellia pedunculata* ssp. *pinetorum, Sorghastrum apalachicolense, Stylisma aquatica, S. pickeringii, Tridens carolinianus*.

INTRODUCTION

Field work was conducted during 1995–98, primarily in a ten county area of southeastern Mississippi (Forrest, George, Greene, Hancock, Harrison,

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Jackson, Lamar, Pearl River, Perry, and Stone counties). From 1995–96 work was carried out by Bruce A. Sorrie (BAS) under a contract from the United States Fish and Wildlife Service, Endangered Species, to survey seepage bogs and wet savanna habitats of southern Alabama and Mississippi for selected Federal Species of Concern (formerly C2 candidates). In 1997, a rare species inventory was conducted by BAS on the 22,000+ acre University of Mississippi Forest Lands in George, Jackson, and Stone Counties, under a contract from The Nature Conservancy, Mississippi Field Office. From 1997-98 work was carried out by BAS under a contract from The Nature Conservancy, Southeast Region Office, to survey remaining high quality longleaf pine (*Pinus palustris* P. Miller) communities.

In 1993 the Mississippi Military Department signed a memorandum of agreement with the Mississippi Department of Wildlife, Fisheries, and Parks for a biological inventory of Camp Shelby Training Site (CSTS). Camp Shelby is located principally in Forrest and Perry Counties, and covers 134,000 acres, mostly leased from the DeSoto National Forest. The Mississippi Museum of Natural Science and the state's Natural Heritage Program hired contractors and coordinated field work at CSTS. From 1995-98 Steve W. Leonard (SWL) was field botanist on the inventory team.

Southeastern Mississippi lies within the Longleaf Pine and Coastal Pine Meadows Physiographic Regions, as defined by Lowe (1921). Although supporting a wide variety of habitat types, varying from xeric maritime dune scrub to salt marshes to mixed mesophytic ravine forests, the area is most notable for its extensive pine forests, pine savannas, and seepage bogs. Southward, and in wet sites northward, slash pine (*Pinus elliottii* Engelmann) is dominant; while northward, and in mesic to dry sites southward, longleaf pine is dominant. Mesic and moist sites usually support a mixture of the two. Beneath the pines is a fire-adapted, species-rich herbaceous layer dominated by grasses, composites, and legumes. Wet sites usually also support a dense, ericaceous shrub layer. North of the six southernmost counties, loblolly pine (*Pinus taeda* L.), shortleaf pine (*Pinus echinata* P. Miller), and to a lesser extent spruce pine (*Pinus glabra* Walter) become important components as the topography becomes more rolling and dissected.

The dramatic loss of the longleaf pine ecosystem over 97% of its former range has been documented by Ware et al. (1993) and Frost (1993). Although similar losses occurred in Mississippi, much of the southeastern portion of the state remains in a relatively natural condition. This is due to the presence of large public lands and the implementation of recurring fire management. The De Soto National Forest (which includes Camp Shelby within its borders), the Mississippi Sandhill Crane National Wildlife Refuge, and the University of Mississippi Forest Lands together form one of the largest and most ecologically significant blocks of longleaf pine ecosystem remaining (222,000

ha). Many of the taxa reported in this paper inhabit fire-maintained communities within these properties.

Knowledge of the flora of Mississippi is less well known than most other southeastern states (Bryson & Carter 1994). Published or draft atlases of vascular flora exist for Arkansas, Florida, Georgia, Louisiana, South Carolina, and Tennessee. Major revisions of state floras are well advanced in the Carolinas and Virginia (combined) and Texas. In Mississippi, and also in Alabama, a paucity of historical collecting coupled with a diverse and biogeographically complex flora has hindered the publication of modern floristic manuals. Lowe (1921), Small (1933), and Radford, Ahles, and Bell (1968) remain as basic references for Mississippi plants. The Flora of Mississippi Project was begun in the 1960s (Jones 1974) and has resulted in treatments of a number of families and genera [see references cited by Stevens (1991) and Bryson et al. (1996)]. Numerous county floras have added greatly to our knowledge of plant distribution (see Stevens 1991 for most titles). Currently, the PLANTS database provides a comprehensive list of taxa documented from the state (USDA, NRCS 1995). This database admits species based on vouchered specimens, monographic treatments, and literature reports.

In this paper, plants are listed alphabetically by genus and species. Nomenclature follows Kartesz (1994) unless noted otherwise. Herbarium abbreviations follow Holmgren et al. (1990), except for bas, ctb, MMNS, and swl (pers. herb. Bruce A. Sorrie, pers. herb. Charles T. Bryson, herbarium of the Mississippi Museum of Natural Science in Jackson, and pers. herb. Steve W. Leonard). Historical specimen data was derived from the Mississippi Natural Heritage Program database (MSNHP) and from rare species files developed by BAS. Specimen label data was transcribed exactly as the collector wrote it, except that lists of associated species have been omitted. For some taxa, where we have documented many current populations, only a few representative collections are cited. The abbreviation FS stands for Forest Service Road.

NOTEWORTHY COLLECTIONS

Agrimonia incisa Torrey & Gray (Rosaceae). Previous Mississippi collections are from Forrest, George, Harrison, and Simpson Counties (MSNHP); to these we add Perry and Stone Counties. Once considered a candidate for listing by the US Fish and Wildlife Service, incised groove-bur has a spotty distribution from South Carolina to central Florida to eastern Texas. Camp Shelby, straddling Forrest and Perry Counties, supports ten discreet occurrences. Habitats vary from mesic longleaf pine woodland to entrances to gopher tortoise burrows in dry pine-oak woodland, pine plantations, and cemeteries; but it is most abundant on roadside embankments. MacRoberts and MacRoberts (1997) cite similar habitats for *Agrimonia incisa* in Texas

and suggest that fire suppression and subsequent habitat alteration have caused a widespread decline in this species.

Voucher specimens: **Perry Co.:** Camp Shelby, frequent along MS hwy. 29 in grassy road shoulder, 5.4 mi S of US 98 at New Augusta, 12 Jun 1996, *S.W. Leonard 9543* (FSU, MMNS, NCU); Camp Shelby, Training Area T-51, 28 Dec 1995, *S.W. Leonard 9363* (MMNS). **Stone Co.:** Univ. Miss. Forest Lands, dry-mesic longleaf upland with hardwood understory, N of Wire Road and W of Cablebridge Road, 22 Aug 1997, *B.A. Sorrie 9455 with J. Moore* (bas).

Aristida condensata Chapman (Poaceae). Lowe (1921) does not include this species of dry to xeric sandhills, but PLANTS does. Mississippi populations mark the western edge the species' range.

Voucher specimens: **Greene Co.:** Leaf River at hwy. 98, 2 Nov 1969, *K.E. Rogers 2510* (NCU, VDB). **Harrison Co.:** longleaf pine-oak-saw palmetto ridge on FS 415-A, De Soto National Forest, frequent, 13 Aug 1997, *B.A. Sorrie 9393* (MMNS, NCU). **Perry Co.:** infrequent in cut-over longleaf pine-oak scrub behind Mars Hill Church, Camp Shelby, 11 Jan 1996, *S.W. Leonard 9376* (MMNS); same place, 9 Oct 1996, *S.W. Leonard 9660* (NCU). **Wayne Co.:** common in xeric longleaf pine-turkey oak sandhills by Brewer Town Road, De Soto National Forest, 26 Sep 1997, *B.A. Sorrie 9552 with M. Pyne* (GH, NCU).

Aristida simpliciflora Chapman (Poaceae). This rare but easily overlooked grass is known from less than 25 counties range-wide (central Florida to southern Mississippi). Rogers (1977) collected it from the Ragland Hills in Forrest County; the following are the remaining collections known to us.

Voucher specimens: **Pearl River Co.:** McNeill, 18 Nov 1929, *H.R. Reed s.n.* (US); four mi S of Poplarville on US 11 at jct. of MS 26, base of longleaf pine slope, local, 30 Sep 1988, *S. McDaniel 30289* (IBE, VBD). **Perry Co.:** Camp Shelby, fairly abundant in pitcher plant seep along a secondary drainage into Flat Creek, 3.7 mi S of FS 585, 23 Oct 1996, *S.W. Leonard 9682* (MMNS).

Aristida tuberculosa Nuttall (Poaceae). Lowe (1921) does not include this species of semi-stable dunes and xeric sandhills, but PLANTS does. *Aristida tuberculosa* has a unique distribution pattern: upper Mississippi River and immediate tributaries; about the head of lake Michigan; coastal New Hampshire to Delmarva Peninsula; fall-line sandhills of the Carolinas and Georgia; plus scattered locations on the coastal plain from South Carolina to Florida and Louisiana. Some of these latter may represent adventive populations in disturbed soils and fallow fields.

Voucher specimens: **Forrest Co.:** James Street, E of Baptist Church, lake at old gravel and sand pit, in sandy open woods, 1971, *K.E. Rogers 7028* (VDB), *7030* (NCU). **Kemper Co.:** 5 mi S of DeKalb, sandhill with *Quercus incana, Q. margarettiae*, a few *Pinus palustris*, 13 Sep 1971, *S. McDaniel 15560* (FSU, IBE, VDB). **Jackson Co.:** Horn Island, 5 Sep 1891, *S.M. Tracy 1579* (US). **Wayne Co.:** common in xeric, deep white sands of hills along Brewer Town Road, De Soto National Forest, with *Pinus palustris, Quercus laevis, Aristida condensata, Rhynchospora megalocarpa*, 26 Sep 1997, *B.A. Sorrie 9553 and M. Pyne* (GH, MMNS, NCU, US).

Burmannia biflora L. (Burmanniaceae). This endemic to the Atlantic and Gulf Coastal Plains has rarely been collected in Mississippi. Jones (1976) lists four counties, but the specimen that he saw from Jackson County actually is *Apteria aphylla* [*Channell 1661* (MISSA)]. Jones also lists Pearl River Co., but we have not yet located a voucher. The primary habitat in Mississippi is seasonally ponded depressions and, occasionally, seepage bogs.

Voucher specimens: **Hancock Co.**: Bay St. Louis, Nov 1905, *A. Allison 1425* (MISS, phorocopy at IBE). **Harrison Co.**: local in sphagnum russocks in *Nyssa-Sphagnum* swamp along Tchoutacabouffa River, 3 mi N of Seymour, 20 Aug 1952, *J.D. Ray, Jr. 3468* (FSU, MISSA, NCU). **Jackson Co.**: Ocean Springs, 7 Sep 1889, *F.S. Earle s.n.* (DUKE).

Calopogon multiflorus Lindley (Orchidaceae). Lowe and PLANTS do not list *C. multiflorus* for Mississippi, but Luer (1972) maps it there. This essentially Floridian orchid has rarely been collected outside of that state.

Voucher specimens: **Hancock Co.**: three mi south of Necaise, 5 Apr 1967, *S.B. Jones, Jr. 11489* (MISS). **Jackson Co.**: Ocean Springs, 4 Apr 1888, *F.S. Earle s.n.* (AMES, SIU); Ocean Springs, Apr 1893, *J. Skehan 206* (BRIT); two mi W of Alabama state line, 6 May 1966, *R.D. Suttkus 66-2-11* (NO); circa 1 mi W of MS/AL line between I-10 and US 90 on Franklin Creek Road, recently burned savanna, rare, 20 Apr 1984, *C. Norquist 1774* (IBE); ca. 6.3 mi E of Moss Point, plants scattered in pine savanna, 15 Apr 1988, *M.W. Morris 3076 et al* (IBE).

Chamaecrista deeringiana (Small & Pennell) Macbride (Fabaceae). Reported herewith new to Mississippi. The following establishes a new western range limit for this essentially Floridian species.

Voucher specimen: **Harrison Co.**: Deer Island, W end, live oak woods over sand or shell, 29 Aug 1977, *M.B. Brooks 432 with S. McDaniel* (IBE).

Cladium mariscoides (Muhl.) Torrey (Cyperaceae). Reported herewith new to Mississippi. This species was not included for Mississippi by Bridges *et al.* (1993). This species occurs primarily within the southern portion of the glaciated region of eastern North America, with scattered occurrences in most southeastern states.

Voucher specimens: **Jackson Co.**: swamp ponds, Ocean Springs, 19 Aug 1953, *D. Demaree 33953* (GH); pine meadows between hwy. and RR, about halfway between Pascagoula and Fontainbleu [sic], 22 Aug 1962, *R.M. Harper 4530* (GA, GH); abundant on boggy margin of pond on N side of John Smith Road, just W of Huey Davis Road, 26 Sep 1996, *B.A. Sorrie 9066 with R.J. LeBlond* (MMNS, NCU); abundant in open wet slash pine flatwoods on E side of Trent Lott Airport, N of Sarracenia Road, 11 Nov 1997, *B.A. Sorrie 9633* (IBE, NCU).

Coelorachis cylindrica (Michaux) Nash (Poaceae). Although there are numerous records for Arkansas and Louisiana, this grass seems rare east of the Mississippi River. PLANTS lists this grass for the state, but the following are the only Mississippi specimens we are aware of.

Voucher specimens: **Forrest Co.**: 1/2 to 1 mi N of Petal, between N Railroad St. and hwy. 11, several plants at this site, 23 Jul 1971, *K.E. Rogers 6720* (NCU). **Monroe Co.**: just N of Lowndes County, where US 45 crosses Buttahatchee River, on roadside bank, 30 Jun 1991, *J. MacDonald 2771* (IBE).

Dichanthelium erectifolium (Nash) Gould & Clark (Poaceae). Lelong (1986) reports this grass only from Jackson County, the western range limit of the species. It is apparently rare, for we have not yet encountered a Mississippi specimen in searches of over a dozen southeastern herbaria. Once learned, *Dichanthelium erectifolium* is easy to distinguish from other congeners, and in Mississippi is restticted to seasonally ponded cypress depressions, usually acompanied by *D. wrightianum*, *Polygala cymosa*, *Sabatia hartramii*, *Ilex myrtifolia*, and *Hypericum myrtifolium*.

Voucher specimens: **Harrison Co.**: abundant in seasonally ponded depression in pine flatwoods off of FS 452, S of Wortham Road, De Soto National Forest, grass-sedge dominated, with *Nyssa biflora*, *Dichanthelium wrightianum* and *Lycopodiella alopecuroides*, 14 Aug 1997, *B.A. Sorrie 9404* (GH, IBE, NCU, MMNS). **Jackson Co.**: Cottonmouth Savanna, N side of Frank Snell Road, E of route 613, abundant in pond cypress depressions in pine flatwoods, 5 Jun 1996, *B.A. Sorrie s.n.* (bas).

Dichanthelium fusiforme (Hitchcock) Harvill (Poaceae). Reported herewith new to Mississippi. This combination was made by Harvill (1977), but is not included in synonymy under *D. aciculare* by Kartesz (1994). This plant's taxonomic status has long been in question, and recent authors have treated it as *D. aciculare* var. *ramosum* (Grisebach) Davidse (Davidse & Pohl 1992) or *Panicum aciculare* var. *arenicoloides* (Ashe) Beetle (Zuloaga *et al.* 1993). Lelong (1986) synonymized *Panicum fusiforme* under a related species, *P. angustifolium* Elliott. However, the very long (3.0 mm) fusiforme spikelets are strikingly different from the blunt spikelets of *D. aciculare* and *D. (Panicum) angustifolium*, and so we will use Harvill's combination until a comprehensive revision is undertaken. The following is the only specimen we have seen for Mississippi.

Voucher specimen: Jackson Co.: thickets near the coast, Ocean Springs, 1952, *D. Demaree 32226* (GH). The specimen was originally determined to be *Panicum angustifolium*, but spikelets are 3.0 mm long and fusiform.

Dryopteris ludoviciana (Kunze) Small (Dryopteridaceae). Reported herewith new to Mississippi. This coastal plain endemic was not included for Mississippi by Evans (1978) or by Montgomery and Wagner (1993).

Voucher specimens: **Perry Co.**: Camp Shelby, about 100 plants on W side of Denham Creek, 2 air mi southwest of New Augusta, 14 Sep 1995, *S.W. Leonard 9082* (MMNS).

Eleocharis elongata Chapman (Cyperaceae). Reported herewith new to Mississippi. Although ranging from North Carolina to Florida and Texas (and scattered in the neotropics), this species is not listed by Lowe (1921) or PLANTS. This sedge usually inhabits seasonally to permanently ponded

depressions. The rhizomes are unusually well developed in the Ocean Springs specimen, and the habitat is also unusual, but the specimen appears to be correctly identified, with slender spikes as wide as the culms and with red-margined scales.

Voucher specimens: **Hancock Co.**: Stennis Space Center, NASA, 13 km SE of Picayune, main canal near N-S roadway, 8 May 1992, *J.W. Wooten s.n.* (USM). **Jackson Co.**: 7 mi E of Ocean Springs, local colony on moist slope near longleaf covered hill, 27 May 1962, *S. McDaniel 3231* (IBE); Horn Island, abundant in freshwater marsh shortly S of Park Service pier, 3 Oct 1997, *B.A. Sorrie s.n. with R.J. LeBlond* (bas). **Lamar Co.**: Mossy Pond, 3 mi W of Purvis, uncommon, with *E. robbinsii*, 1 Sep 1998, *B.A. Sorrie 9932 with S.W. Leonard* (GH, NCU).

Eleocharis melanocarpa Torrey (Cyperaceae). Reported herewith new to Mississippi. This species is not listed by Lowe (1921) or PLANTS. Unlike other Mississippi species, the tips of the culms of *E. melanocarpa* often arch over and root in the moist or wet sandy substrate, thus forming a dense tangle. This sedge ranges from Massachusetts to Florida and Mississippi, disjunct to eastern Texas, southern Michigan, and northern Indiana.

Voucher specimen: **Perry Co.**: Camp Shelby, abundant in nearly dry gum pond behind Mars Hill Church, 23 Apr 1995, *J. MacDonald 8469 with A. Leidolf* (IBE); same place, 9 Oct 1996, *S.W. Leonard 9656 with J. Moore and J. MacDonald* (FSU, MMNS).

Eleocharis robbinsii Oakes (Cyperaceae). Reported herewith new to Mississippi. Although known from the state for over twenty-five years, this is the first published documentation. Mississippi marks the western range limit for the species. Plants usually form dense beds in shallow gum ponds with fluctuating water levels; two such ponds on Camp Shelby support populations. In contrast to *E. elongata*, the scales of *E. robbinsii* are green, often with a translucent scarious margin, and without any red coloring. Statements to the contrary in Godfrey & Wooten (1979) were based on misidentified specimens. In addition, scale length in *E. elongata* is 3.5-4.5 mm, in *E. robbinsii* 5.5-7.0 mm.

Voucher specimens: **Forrest Co.**: hwy. 49 about 3-5 mi N of Stone Co. line, shallow pond west of highway across fence, 30 Sep 1970, *K.E. Rogers 4658-B* (NCU); same place but actual distance is 1.2 mi N of county line, 19 Jun 1998, *B.A. Sorrie 9780* (GH, IBE, MMNS); vicinity of Maxie, edge of boggy area, 5 Jul 1971, *K.E. Rogers 6662-B* (NCU). **Lamar Co.**: about 3 mi W of Purvis, abundant, 29 Aug 1973, *K.E. Rogers 9225* (NCU); same place [Mossy Pond], 1 Sep 1998, *B.A. Sorrie 9931 with S.W. Leonard* (GH, bas). **Perry Co.**: Camp Shelby, very abundant around edge of gum pond behind Mars Hill Church, 20 Sep 1994, *J. MacDonald 7728 with D. Wyrick* (IBE); same place, 11 Sep 1995, *S.W. Leonard 9059* (FSU, MMNS).

Elyoneurus tripsacoides Humboldt & Bonpland ex Willd. (Poaceae). This primarily neotropical species is not listed by Lowe (1921), but is included in Hitchcock (1950) for Mississippi. That report may be based on a duplicate of the following. In the United States it is also known from Florida and southern Georgia.

Voucher specimen: **Harrison Co.**: Biloxi, 21 Aug 1898, *S.M. Tracy 4594* (NCU).

Gordonia lasianthus (L.) Ellis (Theaceae). Lowe (1921) cites loblolly bay only from Bay St. Louis in Hancock County. From then until 1994, only 12 sites were documented in George, Perry, and Stone Counties (MSNHP). Extensive searches on Camp Shelby have revealed it to be far more common—25 occurrences have been located there. All of these populations consist of small numbers of plants, primarily in seepage of toe slopes and along streams where organic soils are present. Mississippi marks the species' western range limit.

Voucher specimens: **George Co.**: bottomland at base of slope, E of dirt road in T2S R5W Sec. 26, 17 Nov 1978, *K.E. Rogers 46208 et al.* (IBE, MMNS). **Perry Co.**: Camp Shelby, occasonal in margin of swamp forest on W side of Deep Creek, near S end of FS 332-A, originally discovered by D. Wyrick, 8 Sep 1995, *S.W. Leonard 9048 with J. MacDonald* (MMNS), *J. MacDonald 9100* (IBE). **Stone Co.**: about 1/4 mi S of McHenry, 6 Aug 1952, *R.L. Diener 375* (MISSA).

Isoetes louisianensis Thieret (Isoetaceae). Reported herewith new to Mississippi. This quillwort was described from southeastern Louisiana by Landry and Thieret (1973). Prior to 1996, *I. louisianensis* was known from only eight populations in Washington and St. Tammany Parishes and was listed as endangered by the US Fish and Wildlife Service. In 1996 we independently collected unknown quillworts in the De Soto NF and Camp Shelby, which were verified as *I. louisianensis* by W. Carl Taylor and Neil Luebke of the Milwaukee Public Museum. Subsequently, an intensive search was conducted throughout the De Soto NF by Forest Service personnel and SWL, and elsewhere by SWL. To date, over 50 populations have been found in ten Mississippi counties. This species normally inhabits intermittent streams and stream edges, scour channels, and floodplain depressions beneath a canopy of *Quercus laurifolia* Michx., *Nyssa biflora* Walter, *Acer rubrum* L., and *Cyrilla racemiflora* L. Soils are mineral in content. Plants initiate growth during winter months and produce mature megaspores from April to July. Around mid-July, streams dry up and plants senesce and disappear until rains resume in November. In addition to the following, Louisiana quillwort has been vouchered by SWL from Hancock, Harrison, Pearl River, and Stone Counties.

Voucher specimens: **Forrest Co.**: Camp Shelby, abundant in tributary of Chaney Creek, 27 Jan 1997, *S.W. Leonard 9729* (NY). **Greene Co.**: infrequent in tributary of Waterfork Branch, 8.6 mi E of Bothwell on N side of Bothwell-Knobtown Road, 19 Jan 1997, *S.W. Leonard 9728* (NY). **Jackson Co.**: De Soto NF, local in braided streamhead of Bayou Billie, E side of Old Biloxi Road, 18 Jun 1996, *B.A. Sorrie 8932* (GH, MIL). **Jones Co.**: De Soto NF, shallow still water of scour channels S of FS 201, 0.5 mi SE of jct. with FS 201-F, 15 Feb 1997, *S.W. Leonard 9743* (NY). **Perry Co.**: Camp Shelby, abundant in scour channels at edge of floodplain of tributary of Joes Creek, mixed pine-hardwood bottomland, 22 May 1996, *S.W. Leonard 9511* (MMNS, NY). **Wayne Co.**: De Soto NF, abundant in Okey Branch, E of hwy. 63 and S of FS 207, 15 Feb 1997, *S.W. Leonard 9740* (NY).

Isoetes melanopoda Gay & Durieu (Isoetaceae). Taylor et al. (1993) include Mississippi in the range, but Evans (1978) does not and we have seen no earlier collections than those below. This quillwort grows in moist mixed hardwoods and in ephemeral streams, generally north of the range of *I. louisianensis*.

Voucher specimens: **Jasper Co.**: Bienville National Forest, ephemeral stream S of FS 507, between FS 507-F and 507-C, 7 Apr 1997, *S.W. Leonard 9787* (NY). **Scott Co.**: Bienville NF, occasional in ephemeral stream W of FS 543, 3.1 mi SE of jct. with FS 551, 7 Apr 1997, *S.W. Leonard 9792* (NY). **Smith Co.**: Bienville NF, scarce in shallow depression of floodplain, N side of FS 520, 0.4 mi E of Ichusa Creek and 2.1 mi E of county road 515, 7 Apr 1997, *S.W. Leonard 9793* (NY). **Wayne Co.**: frequent in willow oak-sweetgum-winged elm-palmetto forest on E side of US 45, S of jct. of Hayes-Nute Road, between Hiwannee and Shubura, 14 Dec 1996, *S.W. Leonard 9718* (NY).

Juncus gymnocarpus Coville (Juncaceae). This rush is not listed by Lowe (1921) nor by Pullen *et al.* (1968). Rogers (1973) is apparently the first to report this rush from the state. The geographical range consists of three disjunct areas: montane eastern Pennsylvania; montane North Carolina, South Carolina, and Tennessee; and the coastal plain of panhandle Florida, southern Alabama, and southern Mississippi. The long disjunction between the Appalachian Mountains and the Gulf Coastal Plain suggests the possibility of taxonomically different entities, but R. Kral has seen specimens from Camp Shelby and concurs with our identification (pers. comm. to SWL 1996). To date sixteen occurrences have been documented from Camp Shelby, and four from UMISS Forest Lands. In addition to the following, McDaniel (1987) reports it from Lamar County.

Voucher specimens: **Forrest Co.**: hwy. 98 a few mi SE of junction with hwy. 49, numerous at edge of farm pond, 26 Oct 1972, *K.E. Rogers 8841-E* (MISSA); large colony in black gum-sweetbay-pine swamp forest along Poplar Creek, Camp Shelby, 26 Sep 1996, *S.W. Leonard 9649* (MMNS). **Perry Co.**: occasional along West Fork of Denham Creek, Camp Shelby, 18 Sep 1995, *S.W. Leonard 9088* (MMNS); locally abundant on E side of Sweetwater Creek, N of FS 305-F1, Camp Shelby, 16 Apr 1996, *S.W. Leonard 9428* (NCU). **Stone Co.**: wet seepage in mesic hardwood-loblolly pine ravine by Long Branch, N of Wire Road, Univ. Miss. Forest Lands, 12 Jun 1997, *B.A. Sorrie 9278* (GH, MMNS).

Lobelia boykinii Torrey & Gray ex A. DC. (Campanulaceae). Reported herewith new to Mississippi, disjunct from Houston County, Alabama, and Okaloosa County, Florida. This coastal plain endemic is most numerous in Georgia and the Carolinas, with a few populations in New Jersey, Delaware, the Florida panhandle, and Alabama.

Voucher specimens: **Jackson Co.**: Cottonmouth Savanna, N side of Frank Snell Road, E of route 613, locally numerous in pond cypress depressions in slash pine flatwoods, 5 Jun 1996, 10 Nov 1997, and 19 Jun 1998, *B.A. Sorrie 8871* (GH, NCU, MMNS), *9785* (FSU, IBE); uncommon in disturbed pond cypress depression at junction of Nut Bank Road and connector to route 613, about 3.5 mi SSW of Big Point village, 2 Oct 1997, *B.A. Sorrie 9587 with R.J. LeBlond* (bas).

Marshallia trinervia (Walter) Trelease (Asteraceae). This striking member of the genus was brought to the attention of SWL by Dr. Sam Rosso of the University of Southern Mississippi, who reported a station near the Lamar/Marion County line. Despite knowledge of its presence in Mississippi for nearly 150 years, *M. trinervia* has traditionally been considered rare in the state. Lowe (1921) lists it only from Greene and Tishomingo Counties, but Channell (1957) cites collections from Clarke, Forrest, Greene, Perry, and Scott Counties. Watson and Estes (1990) add Covington, Lee, and Pearl River Counties. At the University of North Carolina herbarium (NCU) there are specimens from seven sites in Covington, Forrest, and Pearl River Counties. Thus, it would seem that this species is not as rare in Mississippi as previously thought. Primarily a plant of creek banks, wooded slopes, and limestone cliffs from central Alabama and western Georgia to central Tennessee, recent collections suggest that *Marshallia trinervia* has exploited moist roadsides in the Gulf Coastal Plain. We here report stations not previously documented.

Voucher specimens: **Forrest Co.:** hwy. 11 and 49 cloverleaf, cleared area, 2 Jun 1965, *S.B. Jones, Jr. 2935* (NCU); about 1/2 mi S of Hattiesburg, edge of low pine woods, 24 Aug 1969, *K.E. Rogers 1350-C* (NCU). **Lamar Co.:** moist roadside, 6.0 mi S of US 98 on W side of MS hwy. 89 and 0.4 mi S of junction of WPA Road, N of Purvis, 22 Jun 1997, *S.W. Leonard 9833* (MMNS). **Pearl River Co.:** 4.4 mi S of Derby on US 11, roadsides and ditches, 30 May 1976, *D.E. Bonifford 18652 et al* (NCU); wet ditches, hwy. 11, 1 mi N of McNeill, 2 Jun 1977, *C.F. Reed 103625* (NCU); low area on roadside of hwy. 26, about 15 mi E of Poplarville, 30 May 1976, *G. Nesom s.n.* (NCU) [this location probably is in Stone Co.]. **Perry/Forrest Co.:** Camp Shelby, edge of shrubs along small streams on E and W sides of Poplar Creek, at county line, 22 May 1998, *S.W. Leonard 9959* (MMNS).

Mitreola angustifolia (Torrey & Gray) J.B. Nelson (Loganiaceae). Reported herewith new to Mississippi. Godfrey and Wooten (1981) credit this plant only to southern Georgia and northern Florida. *Mitreola angustifolia* inhabits seasonally ponded depressions in pine flatwoods, often under a thin canopy of pond cypress.

Voucher specimens: **Jackson Co.:** savanna circa 1 mile W of Alabama state line on S side of US 90, 26 July 1983, *C. Norquist 1291* (IBE). Scattered in drying out cypress pond on E side of hwy. 63, 14.4 mi S of jct. of hwy. 26 in Lucedale, 4 Aug 1996, *S.W. Leonard 9596* (MMNS, NCU); Cottonmouth Savanna, N side of Frank Snell Road, E of route 613, cypress-bordered depression in pine flatwoods, 1 Oct 1997, *B.A. Sorrie and R.J. LeBlond 9583* (GH, MMNS).

Myriophyllum laxum Shuttleworth ex Chapman (Haloragaceae). Neither Lowe (1921) nor Jones (1975) includes it for Mississippi, but PLANTS does. Mississippi marks the species' western range limit. This southeastern United States endemic is often misidentified as *M. pinnatum* (Walter) BSP. or *M. heterophyllum* Michaux.

Voucher specimens: **Jackson Co.:** submersed aquatic in pond, about 7 mi NNE of Ocean

Springs, 18 Sep 1970, *S.B. Jones, Jr. 20548* (GA). **Lamar Co.:** Mossy Pond, 3 mi W of Purvis, 21 Jul 1973, *E. Decker 62-6* (USM); about 3 mi W of Purvis, abundant in lake, 29 Aug 1973, *K.E. Rogers 9224* (GA, NCU, NLU). **Perry Co.:** N end of unnamed pond NE of FS 321, Camp Shelby, population originally discovered by D. Wyrick, 11 Sep 1995, *S.W. Leonard 9060* (MMNS).

Parnassia grandifolia DC. (Saxifragaceae). Large-leaved grass-of-Parnassus is known from the state only from the southeastern quarter, where first collected in the late nineteenth century. Eakes (1989) cited two populations, in Forrest and Stone Counties. The Camp Shelby inventory has verified 17 occurrences, plus an additional station on private property. Populations occur in seepage communities at the base of slopes, in clayey soil.

Voucher specimens: **Pearl River Co.:** at least 100 plants in boggy drainage on N side of Hillsdale Road, 3.7 mi W of I-59, or 0.5 mi SE of US 11, between Poplarville and Lumberton, 27 Apr 1996, *S.W. Leonard 9447* (MMNS). **Perry Co.:** several colonies from a few plants to 400 or more, in seepages that drain into Dickey Creek, Camp Shelby, SE of New Augusta, 12 Nov 1996, *S.W. Leonard 9691* (MMNS).

Polygala leptostachys Shuttleworth (Polygalaceae). Lowe (1921) only lists one record, from Harrison County. This species ranges from central Florida to southwestern Georgia and southeastern Mississippi. *Polygala leptostachys* is even more slender than its close relative, *P. verticillata* L., and the difficulty of detecting it may explain the paucity of herbarium collections range-wide.

Voucher specimens: **Forrest Co.:** Camp Shelby, vicinity of Range 45, 0.5 mi NE of Lake Janney, along hillside slope of road, 19 Jul 1996, *J. MacDonald 9781* (IBE). **Stone Co.:** Univ. Miss. Forest Lands, diverse mesic uplands S of Wire Road and E of route 15, 20 Aug 1997, *B.A. Sorrie 9433 with R.G. Wieland* (bas).

Potamogeton epihydrus Raf. (Potamogetonaceae). Jones (1974) omits this species from Mississippi, but PLANTS includes it. Hellquist and Crow (1980) specifically state "northern Mississippi" in their range description. In any event, this pondweed is rarely collected in the state. The junior author found it in dense beds at several road crossings of a gravelly, fast-flowing stream in Lawrence County. In protected pools along the stream, the upper leaves have weakly expanded blades to 5 mm wide, but none floating. This site and those in two nearby Louisiana parishes (Thomas and Allen 1993), mark the southernmost locations for the species.

Voucher specimen: **Lawrence Co.:** swiftly flowing water of Tilton Creek at SW end of Tilton Road, about 0.4 mi from Sauls Valley Church; plants in clear water from a few cm deep to 0.5 m, 28 Dec 1996, *S.W. Leonard 9726* (IBE, MMNS).

Rhynchospora curtissii Britton (Cyperaceae). Kral (1996) maps only Jackson County for Mississippi. This rare sedge is an East Gulf Coastal Plain endemic, known from fifteen counties range-wide.

Voucher specimens: **Hancock Co.:** 3.5 mi NE of Santa Rosa, just N of Dead Tiger Creek, clearcut adjacent to hardwood hammock, clay soil, 23 May 1981, *S. McDaniel 25108* (FLAS). This specimen was originally determined as *R. pleiantha* (Kukenthal) Gale. **Jackson Co.:**

Ocean Springs, 1898, *S.M. Tracy 4891* (GH, NCU); wet depression in sandy longleaf pine savanna about 3 mi N of Ocean Springs, 20 Jul 1955, *Channell 3577* (DUKE); scattered populations in seepy powerline S of Semmes Road, about 1 mi W of Fort Bayou Creek, NE of Ocean Springs, locally common, 15 Aug 1997, *B.A. Sorrie 9410* (GH, MNNS, NCU, VDB).

Rhynchospora decurrens Chapman (Cyperaceae). Reported herewith new to Mississippi. This is a seldom collected species, although ranging from southeastern North Carolina to south Florida and Louisiana. Gale (1944) cites no Mississippi collections and PLANTS omits it. *Rhynchospora decurrens* inhabits temporarily flooded depressions in swamps, often with *Taxodium* and *Nyssa*.

Voucher specimen: **Pearl River Co.:** 2 mi W of Picayune, low woods, 9 Jun 1965, *F.H. Sargent 8629* (DUKE, VDB).

Rhynchospora fascicularis (Michaux) Vahl var. **distans** (Chapman) Small (Cyperaceae). Gale (1944) cites one Mississippi collection without specific location. This is still a poorly known and seldom collected taxon, despite distinctive achene morphology. It ranges from southeastern Virginia to south Florida to southeastern Mississippi; disjunct to Bermuda.

Voucher specimen: **Stone Co.:** disturbed roadside seepage in clayey soil, Univ. Miss. Forest Lands, uncommon, with *Aletris aurea, Lachnocaulon anceps*, 13 Jun 1997, *B.A. Sorrie 9285* (GH, NCU).

Rhynchospora globularis (Chapman) Small var. **pinetorum** (Small) Gale (Cyperaceae). Reported herewith new to Mississippi. Despite ample differences from other varieties of *R. globularis*, most authors have not recognized var. *pinetorum*. The achene characters noted by Godfrey and Wooten (1979) and Weakley (in prep.) are diagnostic. *Rhynchospora globularis* var. *pinetorum* ranges from North Carolina to southern Florida and eastern Texas; also western Cuba and Jamaica. This sedge often occurs on calcareous substrates.

Voucher specimen: **Jackson Co.:** low wet areas, Fountainbleau Point, P.O. Ocean Springs, 29 Apr 1954, *D. Demaree 35016* (GH).

Rhynchospora harperi Small (Cyperaceae). Reported herewith new to Mississippi. Kral (1996), and LeBlond (1997) do not credit this species to the state. Knowledge of the distribution of this species has increased dramatically during the past several years (LeBlond 1997). This sedge occurs exclusively in seasonally ponded depressions on the Atlantic and Gulf Coastal Plains.

Voucher specimens: **Jackson Co.:** Cottonmouth Savanna, N side of Frank Snell Road, E of route 613, common in pond cypress-slash pine depression in flatwoods, 10 Nov 1997, *B.A. Sorrie 9632* (GH, MMNS, NCU); same place, 19 Jun 1998, *B.A. Sorrie 9786* (FSU, IBE, VDB).

Rhynchospora nitens (Vahl) Gray (Cyperaceae). Lowe (1921) and PLANTS

do not list it for Mississippi, but there are specimens at VDB from Forrest and Jackson Counties (Kral pers. comm.). *Rhynchospora nitens* is widespread on the southeastern United States coastal plain, probably overlooked in Mississippi.

Voucher specimen: **Forrest Co.**: Camp Shelby, NE of McLaurin, open wet area along and above Hartfield Creek, 15 Oct 1994, *C.T. Bryson 14511 et al.* (ctb). **George Co.**: circa 8 mi W of Ala. state line on hwy. 98, 25 Sep 1979, *K.L. Gordon 1495 with J. Burris* (IBE). **Harrison Co.**: Ship Island, small, seasonally inundated depressions, 7 Sep 1998, *B.A. Sorrie 9953* (IBE, NCU). **Jackson Co.**: Horn Island, 20 Jul 1894, *S.M. Tracy 2925* (MISSA); NE of US 90 and MS 63, Moss Point, open wet area and ditch along US 90 and frontage road, 1 Sep 1993, *C.T. Bryson 12838 with Newton* (ctb); dammed streamhead, now a *Nyssa biflora-Eleocharis equisetoides-Scirpus etuberculatus* dominated pond, W side of FS 404, 0.25 mi N of Larue Road, De Soto NF, 1 Oct 1997, *B.A. Sorrie 9578 with R.J. LeBlond* (GH, MMNS, NCU, bas). **Lamar Co.**: Mossy Pond, 3 mi W of Purvis, 1 Sep 1998, *B.A. Sorrie 9929 with S.W. Leonard* (FSU). **Perry Co.**: Camp Shelby, Leaf River Wildlife Management Area, T1S R9W Sect. 22, 15 Oct 1994, *C.T. Bryson 14533 with J. MacDonald* (ctb).

Rhynchospora scirpoides (Torrey) Gray (Cyperaceae). Reported herewith new to Mississippi. Like *R. nitens*, this species inhabits periodically inundated sites, but is much rarer in the southeastern United States. Lowe (1921) lists *Psilocarya corymbiformis* Bentham, a synonym of *R. scirpoides*, from Horn Island, but the specimen at MISSA is actually *R. nitens*.

Voucher specimens: **Forrest and Perry cos.**: frequent on moist sandbars along Black Creek, E of Brooklyn, 28 Sep 1997, *B.A. Sorrie 9569 and M. Pyne* (GH, IBE, VDB). **Jackson Co.**: Gator Pond (dammed streamhead), just NE of jct. of Wire Road and FS 404-A, Univ. Miss. Forest Lands, two robust plants on exposed pond bottom, 24 Aug 1997, *B.A. Sorrie 9546* (MMNS, NCU). **Lamar Co.**: 2.1 mi N of Lumberton on US 11, sandy clay of seepage area around pine woods pond, 4 Sep 1965, *R. Kral 25854* (VDB); Mossy Pond, 3 mi W of Purvis, 1 Sep 1998, *B.A. Sorrie 9930 with S.W. Leonard* (NCU).

Rhynchospora tracyi Britton (Cyperaceae). Lowe (1921) reports this sedge on the authority of Small, but gives no localities. The following will serve to document its presence in Mississippi.

Voucher specimens: **Jackson Co.**: cypress pond between Ocean Springs and Gaurier, 28 Jul 1955, *R.K. Godfrey 53700 with R.B. Channell* (FSU, GH); hwy. 90 just W of Ala. line, wet soil at edge of sawgrass marsh, 26 Sep 1970, *K.E. Rogers 4612-A* (SMU), *4612-B* (NCU); same place, in shallow water, no date, *K.E. Rogers 4627-A* (NCU); edge of *Cladium* marsh along US 90, circa 1 mi N of Orange Lake, 11 Sep 1980, *K. Gordon 2255* (ctb, MMNS); common in disturbed cypress depression at juncrion of Nut Bank Road and connector to route 613, about 3.5 mi SSW of Big Point village, 2 Oct 1997, *B.A. Sorrie 9588 with R.J. LeBlond* (GH, IBE, NCU).

Ruellia pedunculata Torrey ex Gray ssp. **pinetorum** (Fern.) R.W. Long (Acanthaceae). This seldom collected taxon is vouchered from about 25 counties range-wide (South Carolina to panhandle Florida to western Louisiana); half of which are concentrated in a small area from Washington County, Alabama to Tangipahoa Parish, Louisiana. Previously, this plant had been col-

lected in Harrison and Wayne Counties (MSNHP); here we add four more counties. Because it is difficult to detect when not in flower, we suggest that *R. pedunculata* ssp. *pinetorum* is probably not as rare in Mississippi as previously assumed.

Voucher specimens: **Forrest Co.**: frequent in pine savannas in Ranges 43 and 45, Camp Shelby, 22 May 1998, *S.W. Leonard 9954* (MMNS). **Hancock Co.**: Stennis Space Center, NASA, 13 km SE of Picayune, pipeline at mi 2, off main canal, W of spillway, 29 Apr 1992, *J.W. Wooten s.n.* (USM). **Marion Co.**: occasional in powerline right-of-way through low grounds, 1.2 mi N of hwy. 35 on E side of hwy. 13, 5 Sep 1998, *S.W. Leonard 10085* (MMNS). **Pearl River Co.**: about 5.5 mi N of McNeill, clearcut, 18 Aug 1980, *S. McDaniel 24337* (FSU); frequent in grassy roadside 0.2 mi E of jct. of MS 26 and MS 43, 30 Apr 1998, *S.W. Leonard 9928* (MMNS). **Perry Co.**: about 30 plants in moist pine plantation on S side of Dickey Creek and E of North Tank Trail, Camp Shelby, 1 May 1998, *S.W. Leonard 9929* (MMNS); burned-over hillside drains of Impact Area Buffer Zone, N of South Tank Trail and 1.0 mi E of Middle Creek, Camp Shelby, 11 May 1998, *S.W. Leonard 9952* (MMNS).

Sagittaria isoetiformis J.G. Smith (Alismataceae). Reported herewith new to Mississippi. This is one of the more difficult species of *Sagittaria* to find, because plants are often obscured by dense colonies of *Eleocharis robbinsii*, *Leersia hexandra*, or other aquatics. Two locations are known from Camp Shelby, a range extension westward from Covington County, AL.

Voucher specimen: **Perry Co.**: mostly submerged and not abundant in dense vegetation fringing gum pond behind Mars Hill Church, Camp Shelby, 20 Sep 1994, *J. MacDonald 7728b with D. Wyrick* (IBE); same place, 8 Sep 1995, *S.W. Leonard 9057 with J. MacDonald* (MMNS), *J. MacDonald 9107* (IBE).

Scleria reticularis Michaux (Cyperaceae). Reported herewith new to Mississippi. We here treat *S. reticularis* in the strict sense, without var. *pubescens* Britton (= *S. muehlenbergii* Steudel). The two warrant treatment as full species, based on morphological characters, habitat, and distribution, as treated by Weakley (in prep.). *Scleria reticularis sensu stricto* ranges discontinuously on the coastal plain from southern New Hampshire to the Florida panhandle to Mississippi, disjunct to Michigan and Indiana. It is very rare south of the Carolinas. *Scleria muehlenbergii* ranges continuously from southern New Jersey to south Florida, west to Texas and Oklahoma, with scattered records inland, in the West Indies, and in Central America. It is abundant in the southern Atlantic and Gulf Coastal Plains.

Voucher specimen: **Forrest Co.**: hwy. 49 ca. 3.5 mi N of Stone County line, shallow pond W of hwy. across fence, 1970, *K.E. Rogers 4660-B* (VDB), *4660-C* (NCU). **Lamar Co.**: Mossy Pond, 3 mi W of Purvis, uncommon on sandy-peaty shelf on NW shore, 1 Sep 1998, *B.A. Sorrie 9936 with S.W. Leonard* (GH, IBE, NCU).

Sorghastrum apalachicolense D.W. Hall (Poaceae). Shortly after this species was named and described from Florida (Hall 1982), S. McDaniel found it in Lamar Co., Mississippi (specimens at FSU, IBE) and K. Gordon found it

in Pearl River County (MSNHP database). Until our survey work, *Sorghastrum apalachicolense* was thought to be a rare disjunct in Mississippi, but it now has been documented from nine counties. Moreover, this grass is quite common in suitable habitat: frequently burned, mesic longleaf pine-oak-bluestem communities with diverse herbaceous layers. We observed several thousand plants in 1997 and 1998.

In 1997, SWL spent many hours observing the inflorescence development of *S. apalachicolense, S. secundum* (Ell.) Nash, and *S. elliottii* (Mohr) Nash, species often misidentified on specimen labels and annotations. Because of the arching-drooping panicle axis, even soon after breaking the sheath, *S. elliottii* differs markedly from the other two, in which the axis is straight to slightly arching. Furthermore, *S. elliottii* flowers a month later than *S. apalachicolense* (in southern Mississippi) and about two weeks later than *S. secundum* (in southern Alabama).

As the inflorescence emerges from the apical leaf sheath of *S. apalachicolense*, it takes the form of a compact plume with mostly ascendant branches. The branches and branchlets diverge in an irregular pattern as anthers reach maturity; later, as seeds develop and are shed, the branches return to the ascendant position. In *S. secundum*, the branches and branchlets diverge in a very regular manner so as to form a secund inflorescence in which the florets line up uniformly along one side of the axis. Each floret appears equidistant from each other and from the axis. After seed maturation, the branches return to the ascendant position. Thus, specimens taken prior to full anthesis, or toward the end of seed dispersal, are superficially similar in these two species. In addition to the spikelet width character given in Hall (1982), *S. apalachicolense* specimens possess a short collar of bristles at each panicle branch node; these bristles are greatly reduced or absent in *S. secundum*.

Our observations of *Sorghastrum* reveal other important points. First, *S. secundum* is absent from Mississippi; specimens so labeled from Lamar County [*S.B. Jones, Jr. 2460* (FSU)] are *S. apalachicolense*. In fact, we are unaware of any verified record of *S. secundum* from west of the Mobile-Tensaw Delta, Alabama. Second, flowering of *S. apalachicolense* occurs about three weeks later in Mississippi (late August to early September) than in the Florida panhandle. We can offer no explanation for this discrepancy. Thus, in Florida, flowering and fruiting of *S. apalachicolense* overlaps no other species, but in Mississippi, it overlaps the onset of *S. nutans* (L.) Nash. Third, the very short life cycle—maximum of four weeks from breaking sheaths to seed set—gives *S. apalachicolense* a short detection window.

Voucher specimens: **Forrest Co.**: longleaf pine woodland, 1.0 mi WSW of Grapevine Road along FS 310-B, Camp Shelby, 6 Sep 1996, *S.W. Leonard 9622* (MMNS). **George Co.**: mixed pine-hardwood stand N of Walker Road, Univ. Miss. Forest Lands, 22 Sep 1997,

B.A. Sorrie 9518 (US, bas). **Harrison Co.**: frequent in powerline right-of-way in sandy soil, about 1 mi NE of Lizana along Saucier-Lizana Road, 7 Sep 1997, *S.W. Leonard 9883* (swl); rare in mesic longleaf/slash pine woods by CC Camp Road Bog, S side of route 43 between Lyman and Lizana, 27 Sep 1996, *B.A. Sorrie 9069 with R.J. LeBlond* (bas). **Jackson Co.**: uncommon in multi-age longleaf pine-oak uplands N of Larue Road about 0.5 mi NW of Old Biloxi Road, De Soto NF, 1 Oct 1997, *B.A. Sorrie s.n. with R.J. LeBlond* (bas); cut-over pinelands 0.3 mi S of Wire Road on east side of hwy. 57, 7 Sep 1997, *S.W. Leonard 9879* (MMNS). **Lamar Co.**: very large population in thinned longleaf pine-bluestem upland along Dobson Road, 1 Sep 1998, *B.A. Sorrie 9938 with S.W. Leonard* (FSU, IBE, US); same place, 4 Sep 1998, *B.A. Sorrie 9944* (BRIT, GA, GH). **Marion Co.**: infrequent in pinelands along hwy. 13, 0.6 mi NW of Lamar Co. line, 5 Sep 1998, *S.W. Leonard 10082* (MMNS). **Perry Co.**: scattered in longleaf pine woods S of pipeline on both sides of FS 327, 3.2 mi S of FS 309, Camp Shelby, 8 Sep 1996, *S.W. Leonard 9052 with J. MacDonald* (IBE). **Stone Co.**: frequent in mesic well-burned longleaf pine uplands, Univ. Miss. Forest Lands, sheaths swelling and inflorescences opening 21-23 Aug 1997, spikelets nearly all dropped by 23 Sep, *B.A. Sorrie 9444* (MMNS, bas), *9446* (GH, NCU, bas), *9451* (IBE), *9452* (NCU, US), *9454* (DUKE, FSU, GH), *9533* (US).

Spiranthes brevilabris Lindley var. **floridana** (Wherry) Luer (Orchidaceae). Reported herewith new to Mississippi. In a treatment of the *Spiranthes* of the state, Morris (1989) could find no documentation of its occurrence, but suggested that *S. brevilabris* and its var. *floridana* might occur. Although the variety *floridana* supposedly ranges from North Carolina to Florida and Texas, current information on distribution and abundance is virtually nonexistent. Most botanists have never seen this orchid and the Florida Natural Areas Inventory (the state with the most historical records) does not track it. Knowledge of the range and current abundance of the nominate variety is even poorer. Furthermore, confusion with *S. lacera* (Raf.) Raf. var. *gracilis* (Bigelow) Luer has clouded specimen records, literature reports, and range maps, including those of Luer (1972). Observations in 1997 suggest that this orchid appears in the first growing season following a fire, when competition from coarser herbs and shrubs is at a minimum. Plants mature and senesce in only a few weeks, providing a brief window for detection. Mississippi populations all support less than twenty individuals. The Jackson County specimen at AMES was originally determined as *S. gracilis*, and is mounted on a sheet with other specimens of that taxon from Connecticut, Illinois, and Vermont.

Voucher specimens: **Harrison Co.**: lobe of large seepage bog near FS 424, De Soto NF, burned in winter/spring 1997, 22 May 1997, *B.A. Sorrie 9251* (AMES). **Jackson Co.**: Ocean Springs, 29 April 1889, *F.S. Earle s.n.* (AMES); seepage bog near FS 409-E, De Soto NF, burned winter 1997, 16 Apr 1997, *B.A. Sorrie 9157* (bas). **Stone Co.**: mesic longleaf pine-oak-grass upland with hardwoods mostly removed, very diverse herb layer, E of route 15 and S of Wire Road, Univ. Miss. Forest Lands, 16 May 1997, *B.A. Sorrie 9231 with R.G. Wieland* (MMNS, NCU).

Stylisma aquatica (Walter) Raf. (Convolvulaceae). PLANTS lists this species for Mississippi, but Myint (1966) does not map it there. This, our only

pink flowered *Stylisma*, inhabits intermittently ponded depressions, often with *Taxodium ascendens* and *Nyssa biflora* in the canopy.

Voucher specimens: **Harrison Co.**: locally common in seasonally ponded depression in pine flatwoods, off of FS 452, S of Wortham Road, De Soto NF, grass-sedge dominated, with *Dichanthelium erectifolium, D. wrightianum, Lycopodiella alopecuroides*, 27 Sep 1997, *B.A. Sorrie 9558 with S.W. Leonard and J. Moore* (MMNS, NCU). **Jackson Co.**: disturbed cypress depression at jct. of Nut Bank Road and connector to route 613, about 3.5 mi SSW of Big Point village, abundant, 2 Oct 1997, *B.A. Sorrie 9586 with R.J. LeBlond* (GH, IBE, NCU); Cottonmouth Savanna, N side of Frank Snell Road, E of route 613, cypress-bordered depression in pine flatwoods, 1 Oct 1997, *B.A. Sorrie with R.J. LeBlond 9582* (GA, DUKE). **Perry Co.**: frequent in and around a wet weather pond on E side of FS 322, 0.5 mi N of FS 307 in Camp Shelby Training Area 63, 4 Jun 1996, *S.W. Leonard 9529* (MMNS).

Stylisma pickeringii (Torrey ex M.A. Curtis) Gray (Convolvulaceae). Lowe (1921) and Myint (1966) do not include this species for Mississippi, but PLANTS does. The subspecific disposition of Mississippi specimens is problematic—characters they possess do not fit the published descriptions or the key provided by Myint (1966). Supposedly, *S. pickeringii* var. *pattersonii* (Fern. & Schub.) Myint can be separated from var. *pickeringii* by style branches 1.0–1.5 mm long vs. 2–3 mm, style branches definitely unequal vs. mostly equal or slightly unequal, stylopodia 1–2 mm long vs. up to 3–4 mm, and sepals mostly acute or acutish vs. mostly obtuse. In Mississippi plants, style branches are all less than 0.7 mm and vary from equal to definitely unequal, stylopodia are all less than 2 mm, and sepals vary from acute to obtuse. The resolution of this problem must await more detailed studies. The nominate variety ranges discontinuously on the coastal plain from New Jersey to central Alabama; var. *pattersonii* ranges from western Louisiana and southern Arkansas to eastern Texas, Kansas, and Iowa. The following document the known extant populations.

Voucher specimens: **Forrest Co.**: abundant in extensive sand deposits in old floodplain of Leaf River, N of Faulkner Street and E of James Street Baptist Church, Hattiesburg, 18 Jun 1998, *B.A. Sorrie 9779 with S.W. Leonard* (FSU, GH, MMNS, NCU). **Perry Co.**: rare in white sand in cut-over longleaf pine scrub behind Mars Hill Church, Camp Shelby, 15 Oct 1994, *J. MacDonald 7953 with C.T. Bryson* (IBE); same place, 10 Jul 1996, *S.W. Leonard 9556* (MMNS); same site, 25 Sep 1997, *B.A. Sorrie 9549* (bas, NCU). **Wayne Co.**: xeric, deep white sands of hills along Brewer Town Road, De Soto NF, uncommon, with *Pinus palustris, Quercus laevis, Aristida tuberculosa, Rhynchospora megalocarpa*, 26 Sep 1997, *B.A. Sorrie 9551 with M. Pyne* (bas).

Tridens carolinianus (Steudel) Henrard (Poaceae). Lowe (1921) does not include this species (nor under any synonym), but PLANTS does. This striking grass ranges from southeastern North Carolina to northwestern Florida to western Louisiana, apparently nowhere common.

Voucher specimens: **George Co.**: mesic longleaf-oak upland N of Walker Road, Univ. Miss. Forest Lands, rare, *with Tridens chapmanii, Sorghastrum apalachicolense, S. nutans, Paspalum bifidum, P. floridanum* var. *floridanum, Aristida lanosa*, 22 Sep 1997, *B.A. Sorrie s.n.* (bas).

Pearl River Co.: Poplarville, 1932, *H.R. Reed 324* (FSU), specimen originally determined as *Triodia drummondii* Scribner & Kearney; McNeill, 23 Sep 1931, *H.R. Reed 147* (FSU), specimen originally determined as *Triodia elliottii* Bush. **Stone Co.:** mesic longleaf-oak upland N of Wire Road in Henley Park, Univ. Miss. Forest Lands, uncommon, associated with high diversity of graminoids and herbs, 23 Sep 1997, *B.A. Sorrie 9535* (MMNS, NCU). **Wayne Co.:** De Soto NF, rare in mesic longleaf pine-oak upland by FS 245, burned in 1996 and 1997, with diverse herbaceous layer, 26 Sep 1997, *B.A. Sorrie s.n. and M. Pyne* (bas).

Utricularia olivacea C. Wright ex Grisebach (Lentibulariaceae). New to Mississippi. This neotropical species occurs in the United States as scattered populations on the coastal plain from New Jersey to Florida. The plant's extremely small size, even when flowering, makes detection difficult. Moreover, *U. olivacea* is sensitive to changes in water level, so that it may not appear annually at a given site. The Hinds County specimen names three lakes, at least one of which was a natural arm of the Pearl River (R. Wieland, Mississippi Natural Heritage Program, pers. comm.). The 1935 date represents the second oldest collection in the United States and the first outside of Florida.

Voucher specimens: **Hinds Co.:** "Spring Lake; Clinton Lake; Hederman Lake", 1935–1945, *E. Cook s.n.* (MMNS). **Jackson Co.:** ponded gum swamp at FS 404, 0.25 mi N of Larue Road, DeSoto NF, common in very shallow water and becoming stranded with *U. biflora*, 18 Aug 1997, no sign of any plants on 1 Oct 1997, *B.A. Sorrie 9416* (GH, NCU, FSU, MISSA).

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