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THE LABIATAE OF ARKANSAS

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INTRODUCTION

Information about various taxa of the Labiatae in Arkansas has been known for many years, but a study of the entire family as it occurs in the state has not been made. Furthermore, the distribution of species and varieties in the state and information on the habitats in which they usually occur are sketchy. Also, the pertinent literature is widely scattered.

The objective of this study was to bring together this information on the Labiatae of Arkansas.

Grateful acknowledgment is made to Dr. Edward E. Dale, Jr., Department of Botany and Bacteriology, University of Arkansas, for direction of this work. Thanks are also due the director of the herbarium at Arkansas College and the curator of the herbarium of the Missouri Botanical Garden for permission to examine their specimens.

HISTORY

The first known record of the Labiatae in Arkansas was reported by Bradbury (1817). He collected one species that he called *Stachys Foeniculum* Pursh., or what is now known as *Agastache Foeniculum* (Pursh.) Ktze. (Fernald, 1950). Since Fernald describes the southern distributional limits of *A. Foeniculum* as Illinois and Iowa, and since no other investigator has reported it as being present in the state, it seems likely that the plant was mis-identified. It was probably *A. nepotoides* (L.) Benth., which is the only *Agastache* known to occur in Arkansas at present. Unfortunately the specimen identified by Bradbury is not available for purposes of verification.

Thomas Nuttall (1821), in his travels up the Arkansas River in 1819, included four species belonging to the Labiatae in his collection. He added ten more as a result of his collection from 1821 to 1835 (Nuttall, 1837).

Eleven new species were reported by Lesquereux (1860) as a result of the second botanical and geological survey of Arkansas, and an additional species was included in a report of additions to the flora of Arkansas by Butler (1877).

Branner and Coville (1888) compiled a checklist of the plants of Arkansas in which twenty-four genera and fifty-four species of Labiatae were recorded. Buchholz and Palmer (1926) in their supplement to the

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flora of Arkansas added four species new to the state, and Moore (1951) reported the most recent new addition.

County or area floras such as those of Giles, (1935) and Pyle (1939) and the ecological studies of Hite (1960), Bullington (1962), and Fullerton (1964) have added much information about the distribution and habitat of the Labiatae of Arkansas, but no taxa new to the state were reported.

MATERIAL STUDIED

This investigation is based primarily on the examination of approximately 4,810 herbarium specimens at the University of Arkansas, Arkansas College, and Missouri Botanical Garden. Also, specimens cited in the literature were noted.

The field studies helped augment distributional data and made possible a better understanding of the plants in relation to their environment. The months of June, July, and August, 1963, were spent in the field making extensive collections and studying the habitats. The late blooming specimens were collected on more infrequent trips made the following fall.

GEOGRAPHIC DISTRIBUTION

Species found in Arkansas are characterized in most instances by a cosmopolitan distribution. An exception to this is *Sideritis montana*, a plant native to Europe, which is known to occur in North America only in Fulton County, Arkansas (Moore, 1951). Almost a fourth of the Arkansas species are native to Europe.

The distribution of the various taxa are fairly well known in Northwest Arkansas, but taxa in the remainder of the state have been poorly collected. For this reason, any broad conclusions as to the distribution of species within the state based solely on present known collections are likely to be unsound. Further studies will undoubtedly show a much wider distribution of most taxa.

ANNOTATED LIST OF TAXA

In the list that follows, where possible the names employed are the same as those used in the most recent revisions or monographs.

In taxa for which no intensive studies have been made, those names used by Fernald (1950), Gleason (1952), or Steyermark (1964) have been followed.

Each name is followed by a brief description of the usual habitat, areas, or counties where the plant occurs and citations of representative herbarium specimens. Plants deposited in the herbarium of the University of Arkansas are indicated by (UA), Arkansas College, (AC), and Missouri Botanical Garden, (MBG).

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If a revision or monograph of any genus has been made, the citation follows the generic epithet.

Agastache Clayton (Lint & Epling, 1945)

Agastache nepetoides (L.) Ktze. — Benton, Garland, Polk, and Washington counties. Low open woods, thickets, and at the base of bluffs. D. Demaree, 4591, Benton County (UA); D. Demaree, 16453, Garland County (MBG).

Blephilia Raf.

Blephilia ciliata (L.) Benth. — Known throughout the state. Limestone glades, open woods, clearings, and along roadsides. Delzie Demaree, 6758, Benton County (UA); E. J. Palmer, 5582, Carroll County (MBG).

B. hirsuta (Pursh.) Benth. — Marion and Stone counties. Moist rich valleys and moist areas at base of bluffs. D. M. Moore, 451887, Stone County (UA).

Collinsonia L.

Collinsonia canadensis L. — Present in Arkansas on rich, rocky, limestone-derived soils, slopes, in woods, and ravines. This plant was not seen, but is cited in Gleason (1952) and Fernald (1950).

Cunila L.

Cunila origanoides (L.) Britt. — Known throughout the state. Upland slopes, bald hills, rocky or open woods, and prairies. D. M. Moore, 30G023, Carroll County (UA); Delzie Demaree, 13868, Drew County (MBG).

Glechoma L.

Glechoma hederacea L. — Benton, Independence, Little River, Washington, and White counties. Low meadows, woodland, near streams, and springs. W. L. Ellison, 307, Independence County (AC); Delzie Demaree, 6653, Benton County (UA).

Hedeoma Pers.

Hedeoma hispida Pursh — Known throughout the state. Prairies, limestone glades, and fallow fields. D. M. Moore, 330188, Baxter County (UA); Delzie Demaree, 17151, Drew County (MBG).

H. pulegioides (L.) Pers. — Known throughout the state. Dry sandy soils, ridge tops, upland slopes, clearings, and glades. D. M. Moore, 43229, Newton County (MBG).

Isanthus Michx.

Isanthus brachiatus (L.) BSP. — Known from the western half of the state. Limestone glades, bald hills, prairies, and gravel bars. D. M. Moore, 308071, Marion County (UA).

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Lamium L. (Jorgensen, 1927; Bushnell, 1937)

Lamium amplexicaule L. f. amplexicaule. — Known throughout the state. Old fields, pastures, lawns, meadows, and waste ground. W. L. Ellison, 344, Independence County (AC); H. R. Gregg, 31, Hot Spring County (UA).

L. amplexicaule L. f. albiflorum D. M. Moore. — Garland, Hot Spring, Pope, Washington, and Woodruff counties. This plant shows a homozygous recessive condition according to Bushnell (1936). D. M. Moore, 430083, Pope County (UA).

L. purpureum L. — Benton, Independence, and Washington counties. Lawns, pastures, meadows and waste ground. White flowered forms have been observed growing in Washington County. D. M. Moore, 400003, Washington County (UA).

Leonurus L.

Leonurus Cardiaca L. — Benton, Hot Spring, Independence, and Washington counties. River banks, old fields, wast ground, the roadsides. Delzie Demaree, 17462, Hot Spring County (MBG); Dr. C. C. Smith, Independence County (AC).

Lycopus L.

(Hermann, 1936; Henderson, 1962, and Steyermark, 1964)

Lycopus americanus Muhl. — Benton, Washington, and Pulaski counties. Low wet woods, thickets, along streams, ditches, lakes, and flood plains. Delzie Demaree, 5515, Benton County (UA).

L. rubellus Moench var. arkansanus (Fresn). Benner — Known throughout the state. Low wet woods, thickets along streams, ditches, and flood plains. E. M. Merrill, 1023, Pulaski County (UA).

L. rubellus Moench var. lanceolatus Benner — Carroll County. Low wet woods, thickets, and flood plains. D. M. Moore and H. H. Iltis, 328, Carroll County (UA).

L. rubellus Moench var. rubellus Moench — Ashley and Washington counties. Thickets along streams, ditches, and flood plains. Delzie Demaree, 18586, Ashley County (UA).

Marrubium L.

Marrubium vulgare L. — Benton, Carroll, Independence, Marion, Newton, Pulaski, and Washington counties. Fields, pastures, waste ground, exposed bluffs, and roadsides. Lang and Smith, Independence County (AC); H. H. Iltis, 4461, Newton County (UA).

Melissa L.

Melissa officinalis L. — Baxter, Carroll, Newton, and Polk counties. Thickets, wooded slopes, waste ground, abandoned fences, and near old homesites. Delzie Demaree, 23590, Baxter County (MBG); H. H. Iltis, 5436, Newton County (UA).

*Labiatae of Arkansas***Mentha** L. (Dewolf, 1954)

Mentha citrata Ehrh. — Benton and Garland counties. Wet meadows and springs. D. M. Moore, 410420, Garland County (UA).

M. piperita L. — Benton, Fulton, Pulaski, and Washington counties. Wet ground bordering streams, ponds, ditches, meadows, and roadsides. Delzie Demaree, 15587, Hot Spring County (MBG).

M. spicata L. — Boone, Miller, Montgomery, Polk, and counties. Wet ground bordering springs, streams, ponds, and meadows. James H. Moore, Washington County (UA).

Monarda L. (McClintock & Epling, 1942)

Monarda Bradburiana Beck — Known throughout the state. Ravines, dry bluffs, and borders of glades. E. J. Palmer, 27003, Washington County (MBG); W. L. Ellison, 340, Independence County (AC).

M. citriodora Cerv. — Benton, Carroll, Howard, Hempstead, Miller, and Pulaski counties. Limestone glades, bald knobs, and rocky prairies. B. F. Bush, 14884, Carroll County (MBG); Hugh H. Iltis, 5137, Howard County (UA).

M. fistulosa L. — Known throughout the state. Dry open woods, pastures, roadsides, and railroad embankments. Jewell H. Moore, 674, Conway County (UA); Delzie Demaree, 17547, Ashley County (MBG).

M. punctata L. var. **arkansana** McClintock and Epl. — Known throughout the state. Prairies, dry fields, and open ground. Delzie Demaree, 23857, Bradley County (MBG); J. E. Moore, Polk County (UA).

M. Russeliana Nutt. — Franklin, Garland, Hot Spring, Little River, Polk, and Washington counties. Open woods, dry hill sides, and borders of glades. E. J. Palmer, 24892, Garland County (MBG); Delzie Demaree, 2991, Washington County (UA).

Nepeta L. (Dewolf, 1955)

Nepeta Cataria L. — Known throughout the state. Old fields, waste ground, open woodland, along roadsides, and near old dwelling. G. M. Merrill, 529, Pope County (UA).

Perilla L.

Perilla frutescens (L.) Britt. — Known throughout the state. Stream beds, pastures, meadows, and gravel bars. E. J. Palmer, 4437, Carroll County (MBG); G. M. Merrill, 1016, Pulaski County (UA).

Prunella L.

Prunella vulgaris L. — Known throughout the state. Old fields, roadsides, waste ground, prairies, and low woodland. E. J. Palmer, 27127, Garland County (MBG); Mary Stewart, Independence County (AC); W. M. Giles, 1, Freeman Springs (UA).

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***Pycnanthemum* Michx.** (Grant & Epling, 1943)

Pycnanthemum albescens T. & G. — Known throughout the state. Rocky open woods, thickets, and roadsides. Delzie Demaree, 14472, Hazen (UA); E. J. Palmer 43850, Boone County (MBG).

P. incanum (L.) Michx. — Pulaski and Cleveland counties. Thickets, open woods, and dry hillsides. J. T. Buchholz, 264, West Arkansas (UA).

P. muticum (Michx.) Pers. — Known throughout the state. In grassy open places and low or dry woodland. Delzie Demaree, 3728, Craighead County (MBG); Jewel E. Moore, 1031, Conway County (UA).

P. pilosum Nutt. — Benton, Carroll, Marion, Newton, Stone, and Washington counties. Prairies, open upland, woodland, and thickets. Delzie Demaree, 23478, Stone County (MBG); D. M. Moore, 350135, Marion County (UA).

P. tenuifolium Schrad. — Known throughout the state. Open woods, dry fields and prairies, thickets, meadows, and gravel bars. Winell Gipson, Independence County (AC); J. E. Moore and A. McWilliams, Polk County (UA); Delzie Demaree, 22209, Prairie County (MBG).

***Physostegia* Benth.**

Physostegia angustifolia fern. — Benton, Boone, Craighead, Franklin, Fulton, Sebastian, and Washington counties. Moist prairies and low ground. Ruth Armstrong, 111, Sebastian County (UA).

P. intermedia (Nutt.) Engelm. & Gray — Known throughout the state. Moist prairies and swamps. H. Eggett, Green County (MBG).

P. virginiana (L.) Benth. — Known throughout the state. Moist thickets, river banks, and waste places. May be cultivated. Delzie Demaree, 5089 Craighead County (UA).

***Salvia* L.**

Salvia lanceifolia Poir. — Known from only one specimen from Marion County. Plains and fallow fields. D. M. Moore, 350136, Marion County (UA).

S. lyrata L. — Known throughout the state. Dry sandy woods and thickets. John Kellog, Howard County (MBG); G. M. Merrill, 1623, Pulaski County (UA).

S. Pitcheri Torr. — Known throughout the state. Dry prairies. May be cultivated. Delzie Demaree, 9975, Pike County (MBG); H. R. Pyle, 572, Logan County (UA).

***Satureja* L.** (Steyermark, 1964)

Satureja arkansana (Nutt.) Briq. — Known in the northwestern half of the state. Limestone glades, rocky openings, limestone bluffs, wet meadows, and gravel bars. Delzie Demaree, 22223, Newton County (MBG); J. T. Buchholz, 992, Faulkner County (UA); Dr. C. C. Smith, Independence County (AC).

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S. Calamintha (L.) Scheele var. **Nepeta** (L.) Briq. — Benton, Clark, Hot Spring, Saline, Sevier, and St. Francis counties. Waste places, old fields, and roadsides. Sidney McDaniel, 829, St. Francis County (UA); E. J. Palmer, 8424, Saline County (MBG).

Scutellaria L. (Epling, 1942; Penland, 1924)

Scutellaria australis (Fassett) Epl. — Known throughout the state. Meadows, rocky fields, open woods, bluffs, ridges, and prairies. R. G. French, 394, Washington County (UA); B. F. Bush, 1435, Fulton County (MBG).

S. Bushii Britt. — Found only in Baxter County. Limestone glades, and bald knobs. D. M. Moore, 330163, Baxter County (UA).

S. cardiophylla Engelm. & Gray. — Garland, Hempstead, and Hot Spring counties. Open woods and prairies. E. J. Palmer, 10503, Hempstead County (MBG); F. L. Harvey, Hot Spring County (UA).

S. elliptica Muhl. — The northwestern half of the state. Steep wooded areas. D. M. Moore, 52052, Franklin County (UA); Delzie Demaree, 23102, Conway County (MBG).

S. incana Biehler — Benton, Lawrence, Newton, Stone, and Washington counties. Open woods, bluffs, wooded slopes, roadsides, thickets, and along streams. D. M. Moore, 510379, Stone County (UA).

S. integrifolia L. — Known throughout the state. Thickets, dry sandy soil, open ground, and along roadsides. Delzie Demaree, 21187, Magnet Cove (MBG); Nettie Bustin, Sharp County (UA).

S. lateriflora L. — Known throughout the state. Wet woods, swampy meadows, gravel bars, flood plains, bordering sloughs, streams and swamps. Delzie Demaree, 7056, Craighead County (UA); Delzie Demaree, 9343, Pulaski County (MBG).

S. Leonardi Epl. — Benton, Fulton, Marion, Pope, and Pulaski counties. Glades, meadows, waste ground, exposed ledges, and along roadsides. D. M. Moore, 32610, Marion County (UA).

S. ovata Hill. — According to Epling (1942), there are three subspecies: **S. ovata** subsp. **mississippiensis**, **S. ovata** subsp. **bracteata**, and **S. ovata** subsp. **versicolor**. These are considered to be varieties by other authors.

S. ovata Hill subsp. **bracteata** Epl. — Known throughout the state. Bald hills, waste ground, and roadsides. H. R. Pyle, 500, Logan County (UA).

S. ovata Hill subsp. **mississippiensis** Epl. — Known throughout the state. Rocky glades and exposed ledges. G. M. Merrill, 1052, Pulaski County (UA).

S. ovata Hill subsp. **versicolor** Epl. — Ashley, Baxter, Benton, Logan, and Pulaski counties. Rocky embankments, exposed ledges, and rocky grades. G. M. Merrill, 375, Pulaski County (UA).

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S. parvula Michx. — Benton, Baxter, Izard, Marion, Nevada, and Prairie counties. Meadows, rocky fields, open woods, bluffs, ridges, and prairies. Delzie Demaree, 14709, Ashley County (MBG); Lang 2, Independence County (AC).

Sideritis (Tourn.) L.

Sideritis montana L. — Fulton County. Limestone glades, and roadsides. D. M. Moore, 510613, Fulton County (UA).

Stachys L.

Stachys Nuttallii Shuttlew. — Logan and Polk counties. Wooded mountain slopes. E. J. Palmer, 2314, Logan County (MBG).

S. tenuifolia Willd. — Arkansas, Craighead, Montgomery, Pulaski, and Sevier counties. Moist meadows and thickets. John Kellogg, Arkansas Post (MBG); Delzie Demaree, 6966, Craighead (UA).

Teucrium L. (McClintock & Epling, 1946)

Teucrium canadense L. — Known throughout the state. Old fields, prairies, meadows, woodlands, and along roadsides, Mary H. Steward, Independence County (AC); D. M. Moore, Pope County (UA); Delzie Demaree, 23559, Baxter County (MBG).

Trichostema L. (Lewis, 1945)

Trichostema dichotomum L. — Known throughout the state. Limestone glades, bald hills, prairies, and alluvial soils. G. M. Merrill, 1078, Pulaski County (UA); E. J. Palmer, 29061, Garland County (MBG).

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