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THE LESPEDEZAS OF NORTHWEST ARKANSAS

By Orrin J. Henbest, Fayetteville

INTRODUCTION

The uplands of Northwest Arkansas are the meeting-place, so to speak, of at least three plant regions -- the oak-hickory forests from the north and east, the prairies from the west, and the gulf coastal plains from the south. This intermixture of plant types together with the varied habitats provided by the wide range of geological formations, mountains, plains, and prairies produces a flora rich in genera and species.

This paper deals with the floras of that part of the Ozark and Boston Mountains which lies in six counties and the adjacent parts of six more counties in the Northwestern corner of the state.

DISCUSSION

The lespedas are particularly interesting because of the large number of species, their wide distribution, their erosion-control and soil-building qualities, their importance as farm crops, and their value as food for wildlife. It is an easy matter to collect six or eight species within a small area of a few acres, but nowhere does one find a dense stand of any of the native species. Many specimens are difficult to identify using all the manuals available (1, 2, 3 and 4). No one manual covers this area completely, but rather includes it in the outer edge of the region treated in the manual. As a result many of the descriptions do not fit our forms accurately.

Of the 125 species of lespedeza, only two are annuals, and a few of the perennial species are shrubs. Their range appears to be limited to the eastern parts of the Old and New Worlds in the north temperate zone. The twenty odd native species in the eastern United States and southeastern Canada are all perennial herbs.

A large number of annual, perennial, and shrubby species have been introduced into the United States to observe their values for forage, erosion control, and as ornamentals. By far the most valuable of these are the species and varieties of *L. striata* and *L. stipulacea* -- the only two annual species belonging to this genus.

Pieters (5) said of the former, "The common lespedeza has long been in the United States, the earliest record being from Monticello, Georgia, in 1846.....It spread to Alabama and Mississippi by 1867 and was well known in parts of Tennessee in 1870. In 1880 it was being cut for hay in Louisiana." It is supposed that the seeds were brought from Japan or China in some tea boxes.

Many farmers were mystified at the sudden appearance of "Japan clover" in their community and are becoming accustomed to think of lespedeza in terms of hay and soil conservation. They have accepted it as a life-saver for soil much in the same way that Bermuda grass is prized on the severely eroded soils in central and southern Arkansas.

"Korean lespedeza was sent to the United States in 1919 by Ralph Mills, a medical missionary in Chosen (formerly Korea)" (5).

Lespedeza striata is so well adapted to varying conditions and produces such an abundance of seed that it is widely used in pasture mixtures and as a soil improving crop. Some of its improved varieties, known as Kobe and Tennessee 76, have proven to be valuable hay crops, but are not as generally popular in Arkansas as is Korean lespedeza (*L. stipulacea*). The varieties of the latter species, Harbin and early Korean, are early-maturing and are adaptable to the northern states and southern Canada where the summers are shorter.

Sericea lespedeza (*L. sericea*) is gaining importance as a forage crop on acid or sandy soils comparable to the position of alfalfa on the nearly neutral or limestone soils. The two annual species and *sericea* are unrivaled as soil improvers and forage plants for impoverished soils in the southeastern United States. Of the native species only a few show even faint values as erosion control or forage plants. Five species are used as browse by deer, and the leaves of a few more species are eaten by wild turkey (7). Cattle occasionally eat *L. repens* and possibly *L. virginica*. The prostrate species *L. repens* and *L. procumbens* have a habit which would aid in erosion control were they to grow in dense stands. The latter species does this to a limited extent and is worthy of further trial.

Graham (7) has shown that the fruits and leaves of many species are used as food by several forms of song birds and game birds and mammals. The author (8) found that lespedeza seeds made up one-fourth of the food of the bobwhite. The crop of one bobwhite was found to contain approximately 4000 lespedeza seeds -- mostly *L. striata* and *L. stipulacea*.

Several lespedezas, notably *L. bicolor*, have been introduced as ornamentals because of their showy flowers, and have also become useful on eroding field borders and wildlife areas for erosion control and food for wildlife.

In the northern part of their range the lespedezas must be inoculated in order to obtain good yields. Scarification or softening of the seed coat is advisable in the perennial species for some of them produce a high percentage of hard seed.

Dry open woods, glades, idle fields, and prairies are the natural habitats of our native lespedezas. A few species are shade tolerant but most of them enjoy only partial shade or completely open areas. Acid soils are generally preferred by most species, for on cherty soils which are strongly acid one may find several species within a small area.

August and September find the largest number of species in bloom, but the range of dates of blooming begins with *L. repens* in early May and extends through September with *L. hirta* and *L. capitata*.

CONSPECTUS

LESPEDA Michx. Herbs or shrubs. Leaves pinnately 3-foliate, rarely one; leaflets not stipellate. Flowers perfect, petaliferous, most species having both apetalous and petaliferous flowers. Calyx 5-cleft, the lobes nearly equal, slender, or the two upper ones more or less united. Corolla pink, purplish, cream color, or whitish; the standard broad, clawed; the wings and keel petals clawed. Stamens 10 (9 and 1, or the upper stamen partially united with the sheath), anthers all alike. Loment simple (or sometimes 2-jointed, with the lower joint empty and stalk-like). Flowers May-September. Pods sometimes remain on

the dry stalks through the winter. (Dedicated to LESPEDEZ, the Spanish governor of Florida in the time of Michaux.)

Deam (9) points out, "In a study of this genus the two kinds of pods and the relative length of the calyx and its lobes should be noted. The pods of cleistogamous flowers are usually broadly oval and short and have very short calyx lobes of nearly equal length, mostly 0.5-2 mm long, and a short, recurved style, usually less than 1 mm long. The pods of petaliferous flowers are usually not so wide and are longer, the calyx lobes more irregular in length and much longer than those of the cleistogamous flowers, and the style is much longer and not recurved."

The forms covered in this report include thirteen native and introduced species and one variety occurring in Northwest Arkansas (based on the herbarium of the University of Arkansas and the author's collection), and five species and two varieties reported in various manuals with their ranges extending into this section of the state. These unconfirmed forms are as follows: *L. prairea* Britt., *L. Nuttalli* Darl., *L. Manniana* Mack. & Bush., *L. Stuevei* f. *augustifolia* (Britt.) Hopkins, *L. Stuevei* var. *neglecta* Britt., *L. acuticarpa* Mack & Bush., and *L. augustifolia* (Pursh.) Ell. It is expected that further collections and examinations of other herbaria will verify these species and add more species to our list.

A key to the sections based on Small's treatment of the genus and a key to the species and varieties are given followed by a chart showing the synonyms and the diagnostic features of the species and varieties. It is to be noted that *L. sericea* is included in close relationship with *L. virginica* because of its similar vegetative characters.

KEY TO THE LESPEDEZAS OF NORTHWEST ARKANSAS

- Section I. **STRIATAE.** Annuals; stipules and bracts broad and scarious; calyx lobes about as wide as long, shorter than the pod; flowers of two kinds, petaliferous and apetalous.
- Section II. **VIOLACEAE.** Perennial herbs; stipules subulate; bracts minute; calyx lobes much longer than wide, shorter than the pod; flowers of two kinds, petaliferous and apetalous; corolla purple or purplish (greenish-yellow in *L. sericea*).
- Section III. **BICOLORAE.** Perennial shrubs; stipules subulate; bracts minute; calyx lobes much longer than wide, much shorter than pod; flowers all alike; petaliferous, purple or white; panicles open.
- Section IV. **CAPITATAE.** Perennial herbs; stipules subulate; bracts minute; calyx lobes much longer than wide, as long as or longer than the pod; flowers all alike, petaliferous, whitish or cream-color; panicles congested, usually capitate.

I. STRIATAE

- Pubescence of stem appressed downward; leaflets oblong-obovate; calyx lobes bluntly pointed, almost as long as the pointed pods 1. *L. striata*
- Pubescence of stem appressed upward; leaflets broadly obovate; calyx lobes rounded, about one-fourth as long as the rounded, strongly reticulated pod 2. *L. stipulacea*

II. VIOLACEAE

- Flower clusters slender-peduncled, mostly 2-4 times as long as their subtending leaves
- Stems and leaflets woolly or soft-downy with short spreading hairs; stems branched at base, the branches trailing or procumbent 3. *L. procumbens*
- Stems and leaflets glabrate or sparingly appressed pubescent; stems slender, branched, and trailing or spreading upright
- Stems very slender, prostrate or trailing; leaflets small, 6-15 mm long; stipules mostly 2-4.5 mm long. 4. *L. repens*
- Stems upright or spreading; leaflets larger; stipules mostly 5-8 mm long; petaliferous flowers paniculate
- Inflorescence close, short-peduncled; calyx-lobes half as long as pod; main leaflets 20-50 mm long. 5. *L. violacea*
- Inflorescence lax, long-peduncled; calyx-lobes one-fourth as long as pod; main leaflets 6-18 mm long. 6. *L. prairea*
- Flower clusters stouter-peduncled, some of them shorter than the leaves, making them appear spike-like or head-like
- Calyx of petaliferous flowers 6-9 mm long, two-thirds as long as the pod or more 7. *L. Manniana*
- Calyx of petaliferous flowers 3-5 mm long, one-half as long as pod or less
- Leaflets oval to suborbicular or obovate, downy or woolly beneath. 8. *L. Nuttallii*
- Leaflets oblong to oblong-elliptic, appressed-pubescent beneath. 9. *L. acuticarpa*
- Flowers clusters sessile or nearly so
- Calyx of petaliferous flowers 3-5 mm long, rarely half as long as the pod
- Leaflets densely woolly beneath
- Leaflets elliptical to orbicular 10. *L. Stuevei*
- Leaflets linear to linear-oblong
- Upper surface of leaflets tomentose-strigose with long hairs, lower surface more densely so; petioles of principal cauline leaves averaging 17 mm long 11. *L. Stuevei f. augustifolia*
- Upper surface of leaflets downy, the lower surface more densely so; plant similar to *L. Stuevei*, but smaller. 12. *L. Stuevei var neglecta*
- Leaflets appressed-pubescent or glabrate beneath
- Leaflets linear to linear-oblong
- Apex truncate or obtuse, flowers purple 13. *L. virginica*
- Apex truncate, leaflets cuneate, flowers greenish-yellow. 14. *L. sericea*
- Leaflets oval to oblong; petaliferous often short-peduncled 15. *L. frutescens*
- Calyx of petaliferous flowers 6-8 mm long, two-thirds as long as the pod or more. 16. *L. simulata*

III. BICOLORAE

Tall perennial shrubs with slender branches, large ovate to obovate leaflets, sparingly pubescent beneath, and lax panicles of showy purple or white flowers . . 17. *L. bicolor*

IV. CAPITATAE

Leaflets oval, ovate, or oblong
 Peduncles mostly longer than the leaves;
 spike cylindric 18. *L. hirta*
 Peduncles shorter than the leaves; spike
 subglobose 19. *L. capitata*
 Leaflets linear to linear-oblong or linear-lanceolate
 Spike subglobose; bracts and calyx-lobes
 conspicuously long-tipped; calyx
 about 8 mm long 20. *L. capitata* var *longifolia*
 Spike densely-flowered; bracts and
 calyx-lobes not conspicuously long-tipped; calyx about 6 mm long 21. *L. augustifolia*

SUMMARY

Fourteen native and introduced lespedezas found in Northwest Arkansas are discussed along with seven species and varieties which possibly occur in this part of the state. Their values for agriculture, erosion control, and wildlife are discussed. Aids for identification are presented by a key to the species and by a chart showing in tabular form the diagnostic features of the species and varieties.

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DIAGNOSTIC FEATURES OF THE LESPEDEZAS OF NORTH AMERICA

The following references are indicated in the second column of the Chart: D = Britton & Brown, Illus. Flora; F = Fassett, Leguminosae Plants of the United States; G = Graham, Legumes for Erosion Control; H = Howell, Leguminosae of the United States; W = Wats., Bot. Charact. of the United States; S = Scribn. & Merr., Bot. Diag. of the United States; B = Benth., Fl. Australasica; R = Rydberg, Bot. Expl. Exped.; M = MacDougal, Bot. of the United States; P = Peck, Bot. of the United States; C = Cronquist, Bot. of the United States; L = Linker, Bot. of the United States; N = Nutt., Bot. of the United States; O = Oakes, Bot. of the United States; T = Tuckerm., Bot. of the United States; V = Vasey, Bot. of the United States; Y = Young, Bot. of the United States; Z = Zucc., Bot. of the United States; D = Deam, Plants of Indiana; F = Fassett, Leguminosae Plants of the United States; G = Graham, Legumes for Erosion Control; H = Howell, Leguminosae of the United States; W = Wats., Bot. Charact. of the United States; S = Scribn. & Merr., Bot. Diag. of the United States; B = Benth., Fl. Australasica; R = Rydberg, Bot. Expl. Exped.; M = MacDougal, Bot. of the United States; P = Peck, Bot. of the United States; C = Cronquist, Bot. of the United States; L = Linker, Bot. of the United States; N = Nutt., Bot. of the United States; O = Oakes, Bot. of the United States; T = Tuckerm., Bot. of the United States; V = Vasey, Bot. of the United States; Y = Young, Bot. of the United States; Z = Zucc., Bot. of the United States.

SPECIES OF LESPEDEZA	SYNONYMS & REFERENCES	H A B I T		P U B E S C E N C E		PETIOLE Length, etc.	L E A V E S		L E A F L E T S			
		HABIT	REFERENCE	PUBESCENCE	REFERENCE		SHAPE	SIZE	APEX & BASE	PUBESCENCE		
<i>L. procumbens</i> Michx.	B, D, F, G, H, S, Y	Procumbent Branched at base Sometimes ascending 3-8 dm		Woolly or downy Pubescent Short ascending hairs		Shorter than leaves	Stipules subulate	Oval or ovate-elliptic	10-25 mm long	Obtuse or retuse Rounded at base	Downy	
<i>L. repens</i> (L.) Bart.	B, D, F, G, H, S, Y	Procumbent, Slender, Branched at base 1.5-7 dm		Glabrous or appressed- pubescent		Shorter than leaves	Stipules subulate 2-9.5 mm long subrigid	Oval or obovate	6-15 mm long	Obtuse or retuse, Rounded at base	Glabrous or appressed- pubescent	
<i>L. violacea</i> (L.) Pers.	B, D, F, G, H, S, Y	Upright or ascending Slender, branched Slender, terete 1.5-2.10 dm		Sparsely pubescent		Nearly equaling the leaves	Broadly leafy, leaflets thin Simple, petioles 3-6 mm	Broadly oval or oblong	Stem leaves 20-25 mm long 10-20 mm wide Smaller than petioles	Obtuse or retuse Rounded at base	Fine appressed- pubescent hairs	
<i>L. prairea</i> Britt.	B, D, F, G, H, S, Y	<i>L. violacea</i> var. <i>prairea</i> MacDougal		Upright or ascending Branched 3-8 dm		Appressed pubescent above		Obovate Sometimes obcordate	Principal leaflets 10-20 mm long 4-10 mm wide Smaller than petioles	Obtuse or retuse Rounded at base	Glabrous or appressed- pubescent below	
<i>L. Nuttallii</i> Bart.	B, D, F, G, H, S, Y	Erect, stoutish Simple or branched 5-12 dm		More or less pubescent or villous		Mostly long Shorter than the leaves	Leaflets Leaflets Dark green above Stipules subulate	Oval to obovate- oblong	2.5-40 mm long	Obtuse or retuse Narrowed or rounded at base	Glabrous or slightly pubescent or woolly below	
<i>L. Manniana</i> Mackenz.	B, D, F, G, H, S, Y	Erect or ascending Rather slender 3-9 dm		Appressed pubes- cent with rather long hairs or some white hairs		Mostly short	Leaflets thick	Linear oblong to narrowly elliptic, or cuneate	10-40 mm long	Mucronulate, Obtuse at apex	Minute pubescent hairs or striate below	
<i>L. aculeata</i> Mackenz.	B, D, F, G, H, S, Y	Ascending Slender Somewhat mucro- nate 6 dm. or to 10		Glabrous to densely pubescent		Slender	Leaflets firm Stipules subulate 4-6 mm	Oblong to oblong- elliptic	12-25 mm long 4-10 mm wide	Obtuse or cuneate and mucro- nate	Glabrous above pubescent below	
<i>L. Stuevei</i> Nutt.	B, D, F, G, H, S, Y	Upright or ascending Very leafy Mainly slender 3-12 dm		Wiry or downy Pubescent all over		Short, much shorter than leaflets	Very leafy Cuneate Leaflets firm Stipules subulate 4-6 mm	Elliptic seriate	10-30 mm long	Obtuse to retuse Narrowed or rounded at base	Densely pubescent above and somewhat at base	
<i>L. Stuevei f. angustifolia</i> (Britt.) Hopkins	D, P			Pubescent spreading		17 mm long in the principal cauline leaves	Stipules subulate- obovate, pubescent, not scarious Shorter than petiole	Linear to linear- oblong			Tomentose on the upper surface Pure seriate	
<i>L. Stuevei</i> var. <i>neglecta</i> Britt.	B, D, F, G, H, S, Y	<i>L. neglecta</i> (Britt.) MacDougal		similar to <i>Stuevei</i>			Stipules subulate	Linear or linear-oblong or linear- elliptic			Downy	
<i>L. virginica</i> (L.) Britt.	B, D, F, G, H, S, Y	<i>L. escholtzii</i> Michx. <i>L. fasciculata</i> Pers. <i>L. angustifolia</i> Gr. <i>L. stricta</i> var. <i>angustifolia</i> Gr.		Erect, slender, Simple or branched somewhat mucro- nate 3-10 dm		Appressed, Pubescent or glabrate	Principal Stem leaves with slender rather long petioles	Linear or linear- oblong	15-40 mm long 3-7 mm wide	Truncate or obtuse Rarely acute	Glabrous or slightly pubescent below	
<i>L. frutescens</i> (L.) Britt.	B, D, F, G, H, S, Y	<i>L. internodiosa</i> Britt. <i>L. angustifolia</i> S. Wats. <i>L. Stuevei</i> var. <i>inter- media</i> Wats.		Erect, slender, Simple or branched nodes long 1.5-10 dm		Finely appressed- pubescent or glabrate	Slender long (15-20 mm nearly equal- ling leaves)	Leaflets firm Dark green above Pale below Stipules subulate, 2-4 mm	Oval to oblong or elliptic	Stem leaflets 18-40 mm long	Obtuse, truncate or retuse Narrowed or rounded at base	Glabrous above or slightly pubescent below
<i>L. simulata</i> Mackenz.	B, D, F, G, H, S, Y	Erect, stout Usually simple Resembles <i>caerulea</i> 3-9 dm		Glabrous or short- pubescent		Short	Leaflets firm	Linear-oblong to elliptic	Stem leaflets 15-40 mm long	Obtuse and mucronate or rounded at base	Appressed- pubescent above and below	
<i>L. hirta</i> (L.) Hornem.	B, D, F, G, H, S, Y	Erect or ascending Rather stout Branched above 5-12 dm		Villous, mostly spreading or loosely ascending		4-12 mm long	Stipules 2-5 mm long	Obovate to oblong- ovate	10-40 mm long	Rounded at apex or notched at apex	Hairy	
<i>L. capitata</i> Michx.	B, D, F, G, H, S, Y	<i>L. frutescens</i> Ell. Right, simple, nearly erect 6-10 dm		Tomentose with short spreading hairs Rarely glabrous or glabrate		Very short	Leaflets bipinnate, Multiculate above	Oblong to oblong- elliptic	2.5-32 mm long 4-10 mm wide	Obtuse or acute on both sides	1/2 inch or long above 1/2 inch below	
<i>L. capitata</i> var. <i>longifolia</i> (DC.) T. & G.	B, D, F, G, H, S, Y	Stout Densely villous with ascending hairs		Densely villous with ascending hairs		Very short	Leaves subsessile	Long-oblong to linear- rather thick	20-60 mm long 4-8 mm wide	Apex acute	Glabrous above and below Densely pubescent below	
<i>L. angustifolia</i> (Nutt.) Ell.	B, D, F, G, H, S, Y	<i>L. capitata</i> var. <i>angustifolia</i> Pursh.		Slender, simple or branched Simple or ascending longifolia 6-10 dm		Mostly appressed or glabrate	Very short	Linear to linear-oblong or elliptic Lower leaflets often wider than upper	10-35 mm long 2-4 mm wide	Obtuse, acute, or emarginate	1/2 inch or long above 1/2 inch below	
<i>L. stricta</i> (Thunb.) H. & A.	B, D, F, G, H, S, Y	<i>L. stricta</i> (Thunb.) H. & A.		Densely branched, decumbent, slender 1-4 dm		Subpubescent Appressed downward	Very short	Stipules broad and scarious, Petioles Ascending as petiole	Oblong-obovate	8-25 mm long	Ciliate	
<i>L. stipulacea</i> Maxim.	B, D, F, G, H, S, Y	<i>L. stipulacea</i> Maxim.		Annual Erect, slender 1-4 dm		Appressed upward	Short	Stipules broad, scarious, Petioles Much broader than scarious	Broadly obovate Much broader than scarious	Wedge-shaped (cuneate) Linear-oblong	Apex square- cut	
<i>L. stricta</i> (Thunb.) DC.	B, D, F, G, H, S, Y	<i>L. stricta</i> (Thunb.) DC.		Stem greenish- yellow 6-9 dm		Appressed upward	Short	Stipules broad, scarious, Petioles Much broader than scarious	Broadly obovate Much broader than scarious	Wedge-shaped (cuneate) Linear-oblong	Apex square- cut	
<i>L. bicolor</i> Turcz.	B, D, F, G, H, S, Y	<i>L. bicolor</i> Turcz.		Tall shrub Branched slender Up to 30 dm		Finely pubescent Pubescent		Obovate, oval, elliptic, or obovate	11-65 mm long		Sparsely pubescent below	

WEST ARKANSAS

Gy - Gray, Manual of Botany
 Palmer & Steyermark, Annot. Cat. of Fl. Pl. of Mo.
 R - Rydberg, Flora of the Prairies & Plains
 S - Small, Manual of the Southeastern Flora.

SPECIES	INFLORESCENCE		FLOWERS				FRUIT		COVERING PUBESCENCE	RANGE & DATES	HABITAT & SOIL REQUIREMENTS	COMMON NAMES
	PEDUNCLE SHAPE	NO. OF FLOWERS	CALYX Length & Comp. with Fruit	MISC. CHARACTERISTICS OF FLOWERS	COROLLA COLOR	SIZE	SHAPE	LENGTH				
Slender, exceeding the leaves, in the leaf axils	Spike-like or head-like	Few-flowered usually 2-6	Less than 3 mm; shorter than ped.	Two kinds, or sometimes all similar style mostly glabrous	Purple, violet-purple or pinkish-purple	4-7 mm long	Oval-obovate	3-4.5 mm	Pubescent	E. of Plains Aug-July	Dry rocky woods	Trailing Lespedeza
Slender, exceeding the leaves, in the leaf axils	Head, spike-like or head-like	Few-flowered	lobes narrow attenuate, 4-7 mm long, shorter than ped.	Two kinds, pedicels axillary	Violet-purple white at base	4-7 mm long	Oval-obovate	3-4.5 mm	Finally pubescent	E. of Plains May-July	Rocky open woods	Creeping Lespedeza
Slender, generally exceeding the leaves	Close to leaves, panicles	Few	4-6 mm long 1/2 length of ped.	Two kinds	Violet-Purple showy	6-10 mm long	Oval or acute	4-8 mm	Finally pubescent or glabrous	E. of Plains July-Sept.	Rocky or dry open woods, prairies, and prairies	Violet Bush Clover
Slender, long, longer than calyx	Loose panicles		1/2 as long as ped.	Two kinds shorter, pedicels axillary	Purple	6-8 mm long	Oval	3-4 mm	Primarily veined		Dry prairies	
Slender, long, longer than calyx	Spike-like or head-like, dense		lobes linear-lanceolate, 3-5 mm long, less than 1/2 length of ped.	Two kinds Ovary capitate pubescent	Purple or violet-purple	5-7 mm long	Narrowly oval	3-5 mm; longer acuminate at apex	Strigose or densely pubescent	E. of Plains	Dry open woods and prairies	
Slender, many of them longer than leaves	Short racemose		3-5 mm long 1/2 as long as ped.	Two kinds	Purple	5-6 mm long	Oval	3-6 mm	Strigose or minutely pubescent	Avt. to Mich.	Rocky woods and glades	
Slender, elongate, sometimes longer than leaves	Racemose or sparse racemose peduncles	Petaliferous flowers few	Less than 1/2 length of ped. Almost as long as corolla	Two kinds	Purplish	6-8 mm long	Oval	About 3 mm long as calyx	Sparingly pubescent	Mo. & Ark.	Rocky open woods, prairies and prairies	
Short, nearly axillary	Crowded racemes	Crowded	3-4 mm long 1/2 as long as ped. Less calyx	Two kinds	Purple or violet-purple	4-6 mm long	Oval-oblong or acute	4-6 mm	Villosa-canescent	E. of Plains	Dry open woods, bluffs and prairies	Stueves Lespedeza
Shorter than leaves			Less than 1/2 mm in axillary flowers	Two kinds	Purplish	6-7 mm long	Oval in pedicel, subsessile in axil	3-5 mm (in ped.) 4-5 mm (in axil)	Commonly villosa-canescent	N. to Ill. & Texas		
Nearly sessile			2-3 mm long shorter than ped. Lobes lanceolate	Two kinds	Purple	6-7 mm long	Oval	6-7 mm	Me. and N. Ark.			
Nearly sessile		Very crowded	3-4 mm long 1/2 as long as ped. or less	Two kinds	Purple or violet	4-6 mm long	Oval	3-6 mm	Strigose or glabrous	E. of Plains	Dry hills	Tender Lespedeza
Nearly sessile or may equal the leaves			3-4 mm long 1/2 as long as ped. or less	Two kinds	Purple	4-6 mm long	Oval-oblong	4-7 mm	Strigose	E. of Plains	Rocky open woods and bluffs	Wood Lespedeza
Nearly sessile lower than leaves	Subcorymbose clusters	Raceme densely-flowered	3-5 mm long 1/2 as long as ped. or longer	Two kinds	Purplish	6-8 mm long	Oval	About 4 mm	Strongly pubescent	E. of Plains	Dry open woods and rocky prairies	
Flattened, calyx equaling the style	Spike-like or head-like	Spreading or ascending	6-8 mm long Slightly longer than ped.	All alike and perfect style glabrous	White or cream-colored with purple spot on standard	6 mm long	Oblong-ovate or obovate	Nearly 1/2 long as calyx	Pubescent	Mo. & Ark. to Tex. & Fla.	Dry woods, fields, prairies, and glades	Hairy Bush Clover
Slender, when heads	Head glabrous	Closely appressed ascending	6-8 mm long	All alike and perfect style glabrous	White or cream-colored with purple spot on standard	6-8 mm long	Oblong-ovate	3-5 mm long as calyx	Pubescent	Mo., Ark. & Tex.	Rocky hills, dry and sandy soil, and glades	Dusty Clover, Bush Clover
Slender or subsessile	Racemes dense	Oblong-corymbose	6-10 mm long 5/11, exceeding the corolla	All alike and perfect	White or cream-colored with purple spot on standard	6-8 mm long	Oblong-ovate	6 mm long	Pubescent	Ill., Iowa, Mo., Ark., Tex.	Open woods and fields	Beal's Lespedeza
Distinct and slender	Short-cylindric heads	Appressed ascending	3-5 mm long slightly longer than ped.	All alike and perfect	White or cream-colored with purple spot on standard	6-7 mm long	Round-ovate	3-5 mm long	Me. & Ark. to Fla. & Tex.	Aug-Sept.	Sandy prairies open woods	Narrow-leaved Bush-Clover
Very short	1-3 mm pedicels	3-5 mm long slightly shorter than ped. Lobes broad, blunt, notched	Two kinds	Bluish-purple, pink, or white	6-8 mm long	Suborbicular	Small, lobes exceeding calyx	Partly pubescent seeds matid	D.C. to Tex. & Fla. & Tex.	Wet-land	Roadside and open areas	Japanese Clover
Broad and succulent	2-3 mm pedicels	About 1/2 as long as ped. 1/2 rounded	Two kinds	Bluish-purple	Small	Rounded blunt	Strongly reticulate seeds black	July	Mo., Ark. & Tex.	Native of Asia	Introduced from Europe in 1855	Warren Clover
Slender	3-5 mm pedicels	Does not usually remain with ped.	Two kinds	Greenish-yellow	Small	Rounded blunt	Strongly reticulate seeds black	July	Mo., Ark. & Tex.	Native of Asia	Introduced from Asia in 1855	Senecio Lespedeza
Slender	3-5 mm pedicels	3-5 mm long Much shorter than ped.	All alike and perfect	Purple or white	Large	Oblong to oval	7-10 mm long Much longer than calyx	Reticulate and strigose	Fla. to N.C. Ark.		Wetlands	Greater Lespedeza

