

Notes on Some Southern Cassias.

BY CHARLES LOUIS POLLIARD.

(PLATES 250-252.)

The Chamaecristoid Cassias have always been recognized as a group of great perplexity within a genus of otherwise clear delimitations. Even Bentham, whose careful monographic work is still our standard authority on this genus, admits that his treatment of the Chamaecristae verae is far from satisfactory.* The difficulty is due to the close relationship which the species exhibit, and to the consequent fact that specific distinctions throughout the group are hardly obvious in a superficial examination. I am convinced, however, that differences in the periods of flowering and fruiting, as well as in geographical range, will afford characters by which our American species may be satisfactorily separated. The recent collections of Messrs. A. H. Curtiss and G. V. Nash, in Florida, have contributed much toward a clearer comprehension of this essentially Southern group.

The Chamaecristae verae fall naturally into two divisions: those with small or minute, and those with relatively large flowers; and the general tendency among American botanists has been to refer all plants belonging to the first division to *C. nictitans*, while all large-flowering forms were unhesitatingly classed with *C. Chamaecrista*. Muhlenberg was probably the first to recognize that the South contained more than two species and he accordingly named the hirsute plant which grows in dry fields in Florida *Cassia aspera*.† This was reduced by Torrey and Gray‡, but has been quite generally recognized in recent years as a perfectly valid species. Twenty years before this Michaux had described what he took to be a new Cassia, under the name of *C. fasciculata*;|| but this was referred by Bentham, who had access to Michaux's type in Paris, to *C. Chamaecrista*, and it probably belongs there.

After a critical study of numerous specimens I have reached the conclusion that the true *C. nictitans* of the North does not extend into Florida; a theory that seems to be confirmed by numerous field observations kindly communicated to me by Mr.

*Trans. Linn. Soc. London, 27: 536. 1871. †Ell. Bot. S. Car. & Georg. 1: 474. 1821. ‡Torr & Gray. Fl. N. Am. 396. 1838. ||Fl. Bor. Am. 1: 262. 1803.

Nash. It is replaced by *C. aspera*, a plant of dry barren fields and by a multipinnate, rather tall growing plant, hitherto unnamed, distributed as *nictitans*, but certainly not referable to that species.

C. Chamaecrista grows in Florida, assuming an erect, bushy habit, and often attains a height of from two to three feet. It is associated with another undescribed species, of low growth and divaricately much branched. The technical distinctions between these two new species will be discussed in the subjoined descriptions; but the differences shown in the flowering period are worthy of special note.

Cassia nictitans flowers in August throughout the North and somewhat earlier south of the Virginia line. Its Florida congener is barely in flower by the middle of August, while flowering specimens collected by Mr. Curtiss bear date of September 15, at which time *nictitans* has withered foliage and thoroughly mature pods. *C. Chamaecrista* flowers from May 1 to 15, in Florida, and throughout June at the North; the new allied species was collected by Mr. Nash on September 5, with no pods as yet formed.

These data are remarkable and quite conclusive. It is natural to find a plant of northern range blooming a week or even a month *earlier* in a more southerly latitude; but it is not to be supposed that a plant whose flowering period extends through May and June should assume an autumnal form in the South, especially when we bear in mind the fact that all these Cassias are annuals, and hence can bloom normally but once in a season. It is of course barely possible that *C. Chamaecrista* ripens its fruit in June and presents well developed plants two or three feet in height in late August; in case careful field observations should prove this to be a fact, we shall have a most remarkable case of dimorphism in a single species.

The following key presents the salient characters of the Chamaecristae verae in North America. *C. cinerea* Cham. and Schlecht., a species of Texano-Mexican distribution simulates this group, but belongs in the series Dimidiatae.

KEY TO THE SPECIES.

Flowers large (exceeding 1 cm.).

Leaves glabrous.

Plants tall, erect.

Plant low, diffusely branched.

C. Chamaecrista.

C. depressa.

Leaves pubescent.

Leaflets linear falcate, appressed.

Leaflets elliptical, spreading.

C. procumbens.

C. mississippiensis.

Flowers small (not exceeding $\frac{3}{4}$ cm.).

Plants strongly hirsute.

Leaves 8-12-foliolate.

Leaves 20-24-foliolate.

C. simpsoni.

C. aspera.

Plants glabrate or pubescent.

Leaflets narrow, 20-25.

Leaflets broad, 8-14.

C. multipinnata.

C. nictitans.

CASSIA MULTIPINNATA n. sp.

Slender, tall, erect, more or less branched; stem slightly woody at base, pubescent; leaves lanceolate-elliptical in outline, 20-25-foliolate, the rhachis obscurely strigose-pubescent; leaflets 10 mm. long, $1\frac{1}{2}$ mm. wide, glabrous, narrowly linear, cuspidate, the mid-vein approximating the outer margin; petiolar gland minute, depressed-cupuliform, substipitate; stipules long-acuminate, striate, foliaceous; flowers scattered, sessile, the corolla quite irregular, its small yellow petals not much exceeding the narrow, scarious-edged sepals; legume linear, compressed, pubescent or even hirsute, dorsally and ventrally dehiscent, elastic, 2 to $2\frac{1}{2}$ cm. long seeds 4 to 6, oblique. (Plate 250.)

Near Jacksonville. A. H. Curtiss, North American Plants. No. 512, distributed as *C. nictitans* and *C. nictitans* var. *aspera*; second distribution, No. 5157, September 15, and October 27, 1894. Tallahassee. G. V. Nash, No. 2403, August 12, 1895.

This is separable from *nictitans* by the narrowly linear, very numerous leaflets, the more hairy pod, and the late period of flowering. The irregular corolla, noticeable in some other members of this group of Cassia, but not often commented on, is here very prominent, one petal greatly exceeding the others.

CASSIA MULTIPINNATA NASHII n. var.

Differs from the erect type in being of low, diffusely spreading habit.

Collected in low pine woods, River Junction, Gadsden Co., Florida, by Mr. Nash, September 5, 1895 (no. 2577).

CASSIA DEPRESSA n. sp.

Low and spreading, but not prostrate, divaricately much

branched; stems obscurely strigose-pubescent; leaflets 6 to 10 pairs, linear-elliptical, glabrous, 9 mm. long, 2 to 3 mm. broad, with the excentric midrib of *C. Chamaecrista*; petiolar gland small, circular, sessile, depressed; flowers solitary on filiform mostly supra-axillary peduncles; petals large, obovate, much exceeding the sepals, $1\frac{1}{2}$ cm. long, $1\frac{1}{2}$ cm. broad; sepals linear, scarious, strongly ciliate; legume not observed. (Plate 251.)

Low pine woods, River Junction, Gadsden Co., Florida. G. V. Nash, September 5, 1895 (no. 2571).

Potosi, Missouri. F. Pech.

The difference between this and *C. Chamaecrista* lies mainly in its aspect, but the leaflets are smaller and less numerous and the flowers are relatively much larger. The flowering period, moreover, is from two to three months later than in that species.

Cassia Mississippiensis Pollard, Bull. Torr. Club, 21: 219. 1894.

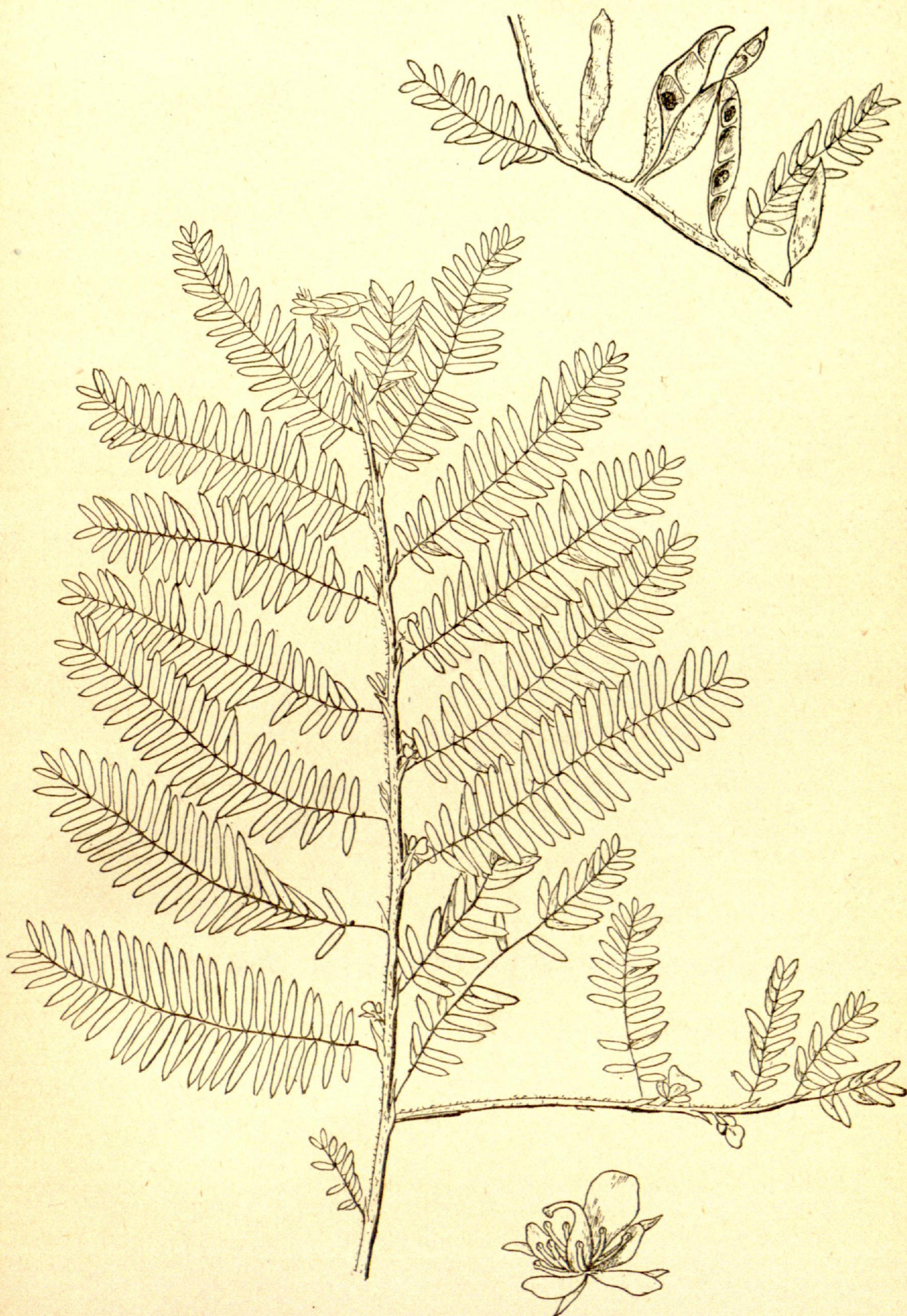
This plant has not yet been collected, so far as I am aware, outside of the State from which it was first described. Professor S. M. Tracy, of the Mississippi Agricultural Experiment Station, wrote me that he had four acres covered with a dense growth of the species; from which I infer that it is locally as troublesome a weed as *C. nictitans*.

Cassia Simpsoni Pollard, Bull. Torr. Club, 21: 221. 1894.

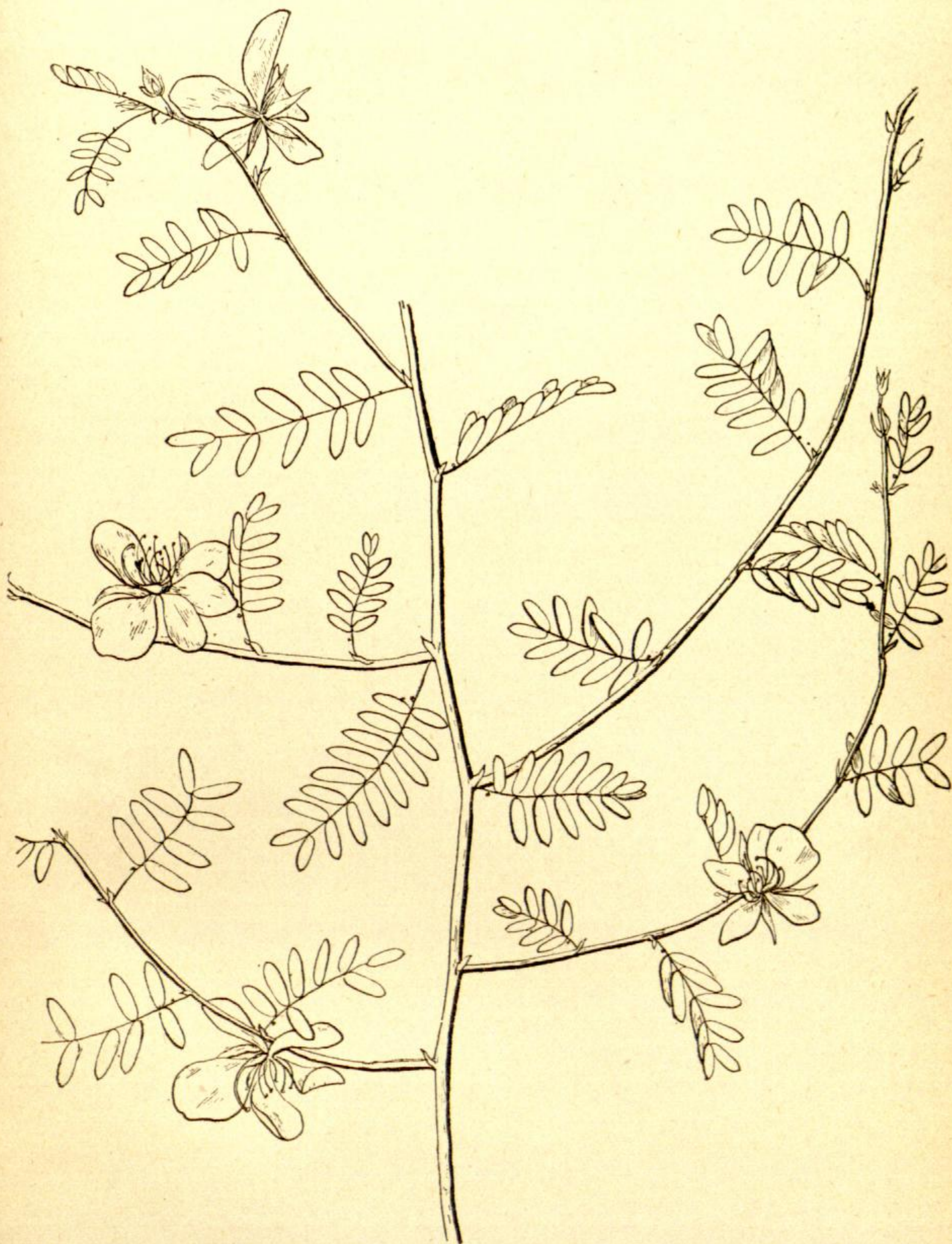
Apparently a subtropical type, confined in the United States to the Keys of Florida, but probably growing in Cuba. It may be considered, in fact, the West Indian representative of the Texano-Mexican species *C. procumbens* L. The original specimens, collected by Mr. J. H. Simpson, on No Name Key, are in the possession of the National Herbarium. I have detected it in no other collection thus far examined.

Explanation of Plate 252.

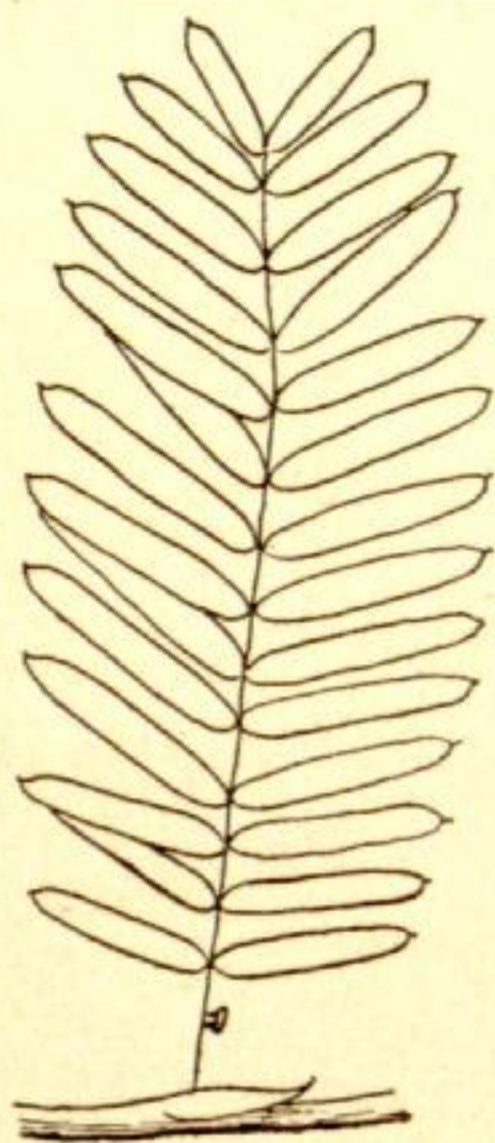
- Fig. 1. *Cassia nictitans* L.
- Fig. 2. *Cassia aspera* Muhl.
- Fig. 3. *Cassia multipinnata* Pollard, n. sp.
- Fig. 4. *Cassia Simpsoni* Pollard.
- Fig. 5. *Cassia Chamaecrista* L.
- Fig. 6. *Cassia depressa* Pollard, n. sp.
- Fig. 7. *Cassia Mississippiensis* Pollard.
- Fig. 8. *Cassia procumbens* L.



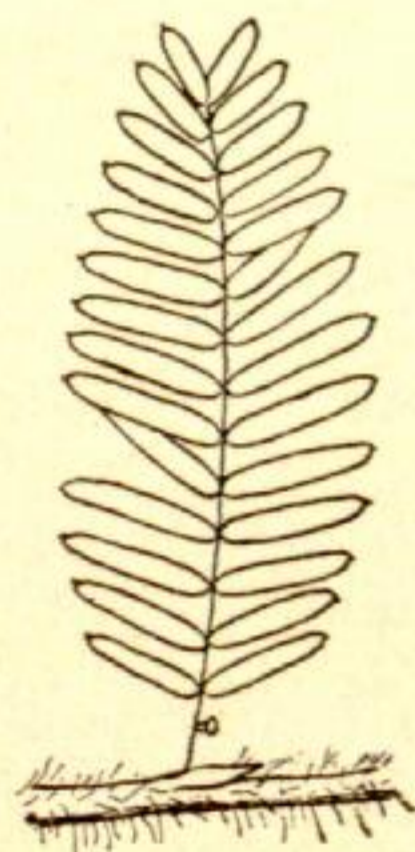
CASSIA MULTIPINNATA POLLARD.



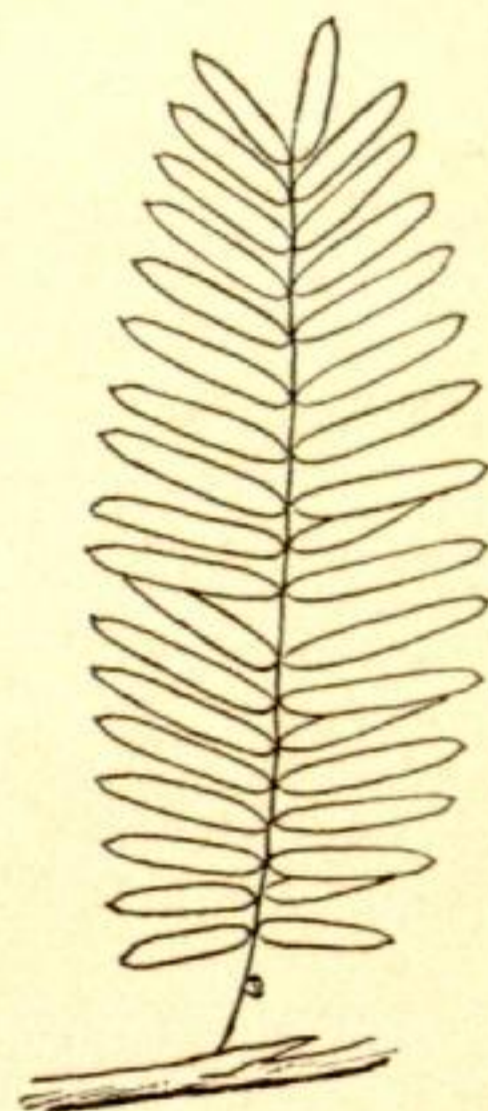
CASSIA DEPRESSA POLLARD.



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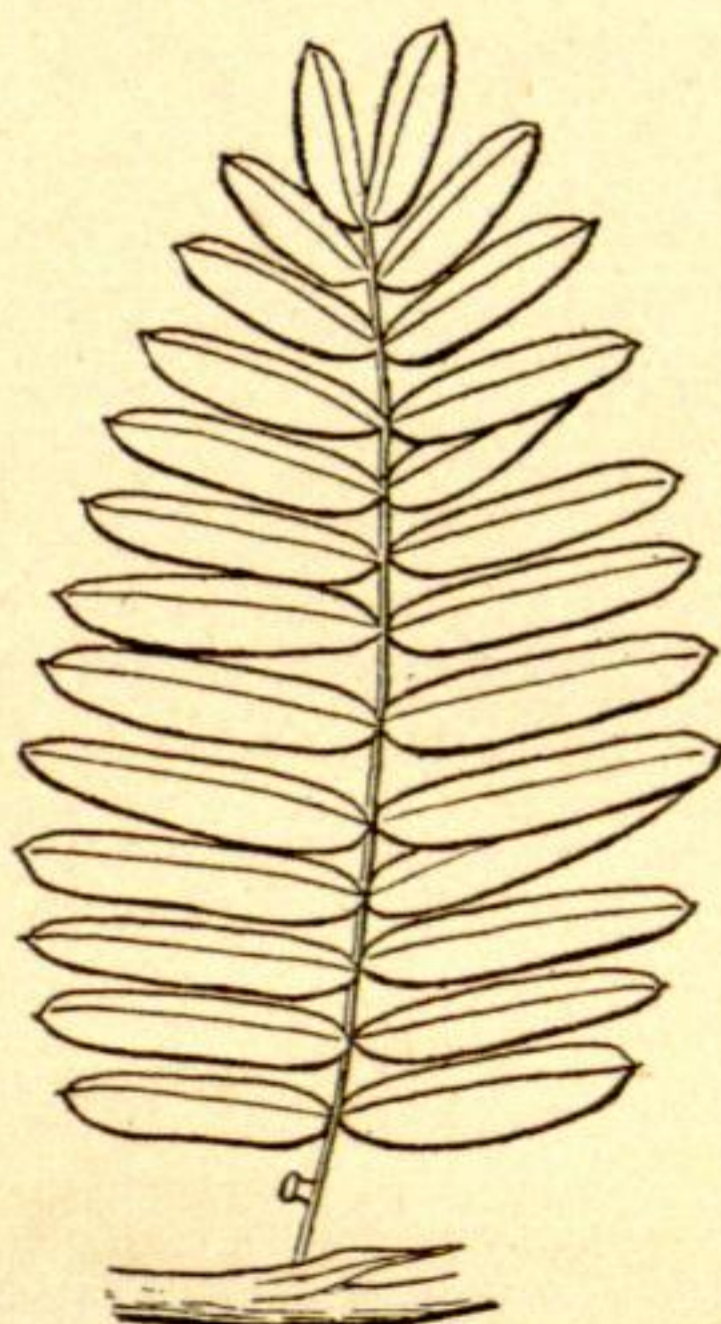
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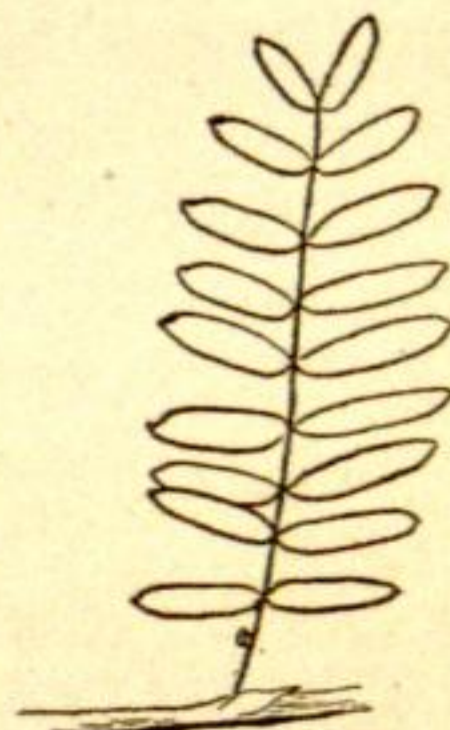
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