

**A CONTRIBUTION TO THE TAXONOMY OF THE GENUS  
SESBANIA ADANSON FROM WEST PAKISTAN**

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**Abstract**

*The taxonomy, nomenclatural position and distribution of the genus Sesbania from West Pakistan has been discussed. Four species namely, S. grandiflora (L.) Poir, S. sesban (L.) Merrill, S. bispinosa (Jacq.) Wight and S. concolor Gillett are recognised from the area under consideration.*

*Four varieties have been recognised under S. sesban viz. var. sesban, var. bicolor, var. concolor and var. muricata including a new variety (muricata Baquar) and a new combination (S. sesban var. concolor (W.&A.) Baquar).*

The genus *Sesbania* Adanson belongs to the subtribe Sesbanianae of the tribe Galegeae. It comprises of about 70 species (Hutchinson 1964) distributed in the tropics and subtropics of both hemispheres with higher frequency and greater number of species in the Old World especially in Africa. It has gained considerable importance because of its applicability in the reclamation of land and its perspective utility in the paper industry. It is being introduced in West Pakistan for cultivation in water-logged and saline areas where other crops do not grow.

Since its establishment in 1763, this genus has been reviewed and revised by a number of workers. Bentham and Hooker (1865) recognized (a) *Eusesbania* (b) *Daubentonia* and (c) *Glottidium*, as three distinct subgenera or sections in this genus. This division was accepted for quite some time, until Small (1903) revised this genus on the basis of fruit characters and recognised the following as independent genera: (a) *Sesban* (b) *Agati* (c) *Daubentonia* and (d) *Glottidium*.

Phillips and Hutchinson (1921) described the African species of this genus under two separate sections (a) *Eusesbania* including *Agati* and (b) *Daubentonia*, characterized by its four winged fruits. Regarding the position of the third section, *Glottidium*, they agreed with the views of Small (1903) in giving it a distinct generic status. They however disagreed on the generic status of *Daubentonia*, which occurs in three wide apart areas, as S. E. United States and Mexico, subtropical S. America and E. Africa. According to them such

unrelated distribution obviates a separate origin of the species of *Daubentonia* from the basal stock *Eusesbania*, species of which occur in all these areas. *Glottidium* which is a native of Florida is distinctly differentiated from *Sesbania* on the basis of its short 2-seeded fruit and its manner of dehiscence.

Rydberg (1923, 1924) agreed in principle with the classification of Small (1903) but added one more genus, *Daubentoniopsis*, thus accommodating the species previously placed in *Sesbania* under five different genera, namely, (a) *Sesban* (= *Sesbania*), (b) *Agati*, (c) *Daubentonia*, (d) *Glottidium* and (e) *Daubentoniopsis*.

Hutchinson (1964) has placed *Sesbania* along with *Glottidium*, *Cracca*, *Poissonia* and *Neocracca* in a new tribe *Sesbanieae*, which corresponds with part of Subtribe *Robinieae*, tribe *Galegeae* of Bentham and Hooker (1865). Gillett (1963) and Hutchinson (1964) have accepted the genus *Sesbania* in a broader sense including all the genera kept separate by Rydberg (1923) except the genus *Glottidium*. This circumscription has also been followed by the present author.

Baker (1876) described four species: *Sesbania aegyptiaca* Poir (= *S. sesban* (L.) Merrill); *Sesbania aculeata* (Willd.) Pers. (= *S. bispinosa* (Jacq.) Wight); *Sesbania procumbens* W. & A. and *Sesbania grandiflora* (L.) Poir., from British India, out of which the first three belong to the subgenus *Eusesbania* while the last one belongs to subgenus *Agati*. All these species are found in West Pakistan with the exception of *S. procumbens* which is said to be restricted to the plains of Western Peninsula in India (Baker 1876).

Prain (1903) reported six species: *Sesbania aegyptiaca* (= *S. sesban*); *S. aculeata* (= *S. bispinosa*); *S. grandiflora*; *S. uliginosa*; *S. paludosa* and *S. cannabina* from Bengal. Prain also recognized three varieties in *S. aegyptiaca* on the basis of flower colour. He placed the forms having uniformly yellow flowers in var. *typica* and distinguished it from those having the standard dotted with purple or red and those with uniform deep purple or red standard on the back as varieties *picta* and *bicolor* respectively. In *S. aculeata* (= *S. bispinosa*) he differentiated two forms, namely, *elatior* (having green sparingly prickly stem) and *typica* (with reddish and rather densely prickly stem) whereas Baker (1876) reported three varieties of this species namely (a) var. *paludosa*, (b) var. *sericea* and (c) var. *cannabina*.

Bor (1953) reported the occurrence of *S. cannabina* in Bengal, besides *S. grandiflora*; *S. sesban* and *S. bispinosa* and made no mention of *S. procumbens*. With regards to the varieties of *S. sesban* he agreed with Prain (1903).

Gillett (1963) described 33 species from Africa (excluding Madagascar) and Southern Arabia, including four species which are also found in W. Pakistan.

Under *S. sesban* he mentioned two sub-species viz. (a) *sesban* and (b) *punctata*, the former having four varieties viz. (i) *sesban*, (ii) *bicolor*, (iii) *mubica* and (iv) *zambesiaca*. In *S. bispinosa* he reported only two varieties (i) *bispinosa* and (ii) *micrantha*. The latter variety differs from the former in having 1-2 flowered racemes and small flowers with filament sheath 8 mm instead of 9-13 mm long.

He has very ably discussed the question of binomials and priority in this genus and has pointed out that "Scopoli did not propose a new name but merely introduced a variant of Adanson's name more conformable to the latin usage." Adanson's name is conserved in the variant form proposed by Scopoli, with the result that "binomials in *Sesban* are treated as though they were binomials in *Sesbania*". Thus *S. grandiflora* and several other names are to be attributed to Poiret (1806) who published them as *Sesban* and not to Persoon (1807).

*Sesbania* Adanson, Fam. 2: 326 (1763) (as *Sesban*); corr. Scopoli, Intr.: 308 (1777). nom. conserv.

Type species: *S. sesban* (Linn.) Merrill

#### Key to Specific and Infra specific Taxa

1. Flowers large (5-10 cm long), buds falcately recurved.
  - Tree with white to reddish flowers .. ***S. grandiflora***
1. Flowers small (less than 2.5 cm), buds straight.
  - Large shrub with yellowish flowers
    2. Perennial, pods twisted, vexillar appendages free.
      3. Plant non aculeate
        4. Vexillum uniformly yellow .. ***S. sesban* var. *sesban***
        4. Vexillum mottled with purple .. ***S. sesban* var. *concolor***
        4. Vexillum dark maroon or purple .. ***S. sesban* var. *bicolor***
      3. Plant aculeate, minute prickles on the stem .. ***S. sesban* var. *muricata***
    2. Annual, pods not twisted, vexillar appendages cuneate.
      5. Pods more or less straight, torulose, not pendulous. Leaves less than 10 cm long. Stem glabrous .. ***S. concolor***
      5. Pods slightly curved, not torulose, pendulous; leaves 20-30 cm long. Stems having minute, weak prickles .. ***S. bispinosa***

Abbreviations: KUH : Karachi University Herbarium, Karachi  
 RAW : Gordon College Herbarium, Rawalpindi  
 HJ : Herbarium of Dr. S. M. H. Jafri  
 CLH : Central Laboratories Herbarium, PCSIR, Karachi  
 EA : East African Herbarium  
 ○ : Collector's name not known

1. *S. grandiflora* (L.) Poir in Lam., Encycl. 7: 127 (1806); Pers. Syn. Pl. 2: 316 (1807); Phillip. & Hutch. in Bothalia 1: 46 (1921); Bak. f., Leg. Trop. Afr. 260 (1929); Brenen, Check-list, Trees & Shrubs Tanganyika: 441 (1949); Hepper in Fl. W. Trop. Afr. ed 2, 1: 532 (1958); Gillett in Kew Bull. 17: 91 (1963).

Basionym: *Robinia grandiflora* Linn. Sp. Pl.: 722 (1753).

Type: India Herb. Linn. No. 922 (Linn.)

Synonymy:

*Robinia grandiflora* L., Sp. Pl.: 722 (1753).

*Aeschynomene grandiflora* (L.) L., Sp. Pl. ed. 2: 1061 (1763).

*Coronilla grandiflora* (L.) Willd., Sp. Pl. 3: 1145 (1803).

*Coronilla coccinea* Willd., Sp. Pl. 3: 1146 (1803).

*Agati grandiflora* (L.) Desv. in J. de Bot. Desv. II. 1: 120 (1813).

Representative specimens: Karachi, 8.11.61, O 3777 (HJ); Karachi, Malir, 12.1.58, Mushtaq Husain (KUH); Karachi Univ. Road, 13.2.67, Baquar (CLH); Karachi-Nazimabad, 23.12.67, Baquar (CLH); Karachi, Paposhnagar, 16.2.68, Baquar (CLH).

Distribution: Mauritius to N. Australia and Philippines but often cultivated (Baker 1876). Gillett (1963) considers it to have its native home in Indonesia. Burbidge (1965) suggested that the N. Australian specimens previously referred to "*S. grandiflora*" should be called as *S. formosa* (F. Mueller) Burbidge, instead of *S. grandiflora*. Apart from some marked morphological variation within the two species she says "the decision to maintain the Australian material as distinct from *S. grandiflora* is to some extent supported by the fact that the distribution is mainly western". She further remarked "*S. formosa* is evidently related to *S. grandiflora* Poir, rather than to the other Australian species, and its distribution history may also differ from theirs".

Flowering Period: Oct.-Dec.

2. *Sesbania sesban* (L.) Merrill in Phil. J. Sci. Bot. 7: 235 (1912); Chiov., Fl. Somalia 1: 145 (1929); Brenen, Check-list, Trees & Shrubs Tanganyika: 441 (1949); Eggeling & Dale, Indig. Trees Uganda: 311 (1952); F. W. Andrews Pl. Sudan 2:

232 (1952); Berhaut in Bull. Soc. Bot. Fr. 99: 297 (1953); Crong. in Fl. Congo Belge 5: 76, t. 5 (1954); Cufod., Enum. Pl. Aeth.: 288 in Bull. Jard. Bot. Brux. 25, Suppl. (1955); Hepper in Fl. W. Trop. Afr., ed. 2, 1: 532 (1958); Dale and Greenway, Kenya Trees & Shrubs: 376 (1961); Gillett in Kew Bull. 17: 112 (1963); Burbidge in Aus. J. Bot. 13: 124 (1965).

(a) var. *sesban*

Basionym: *Aeschynomene sesban* L., Sp. Pl.: 714 (1753).

Holotype: Egypt, Hasselquist (Linnean Herbarium No. 922.12 (Linn). Gillett (1963) reported Linn sheet 922.13 as holotype but according to W.T. Stern (personal correspondence) "this specimen cannot be possibly accepted as the type specimen as this Koenig specimen of 1777 did not come into Linnaeus's possession until many years after his publication of the name *Aeschynomene sesban*. He further says "there is good reason to believe the type is the specimen 922.12, which bears the *Species Plantarum* first edition number 5 indicating that it came into Linnaeus's hands either before or immediately after publication of *Species Plantarum* in 1753".

Synonymy:

*Aeschynomene sesban* L., Sp. Pl.: 714 (1753).

*Coronilla sesban* (L.) Willd., Sp. Pl. 3: 1147 (1803).

*Sesban aegypticus* Poir. in Lam., Encycl. 7 - 128 (1806).

*Emerus sesban* (L.) Kuntze, Rev. Gen. : 180 (1891).

*Sesban sesban* (L.) Britton, Brooklyn Bot. Gard. Mem. 1: 54 (1918).

Representative specimens: Rawalpindi, 23-3-62, Siddiqui 26 (RAW); Walton, 24-11-34, Stewart 14722 (RAW); Zafarwal, 29-12-16, Stewart 659 (RAW); Kahuta, S. Singh (RAW); Lyallpur, 17-3-17, RRS 1490 (RAW); Jhelum, 18-12-16, RRS 577 (RAW); Sambrial, 19-12-16, RRS 580 (RAW); Khairpur, 14-3-56, O 1254 (KUH); Karachi, Lalukhet, 4-5-56, O 120 (KUH); Karachi, Nazimabad, 28-2-57, O (KUH), Karachi University, 5-8-57, Anwar Iqbal (KUH); Karachi University, 1962 Shafia Bano (KUH); Karachi University, 9-11-63, Rafia Majeed (KUH); Karachi University, 10-2-64, Zakia Bilgrami (KUH); Karachi, Paposnagar, 6-11-66, Baquar (CLH); Karachi, North Nazimabad, 3-12-66, Baquar (CLH); Karachi, PCSIR Campus, 16-9-67, Baquar (CLH); Karachi, North Nazimabad, 13-11-67, Baquar (CLH); Karachi, Monghopir, 23-11-67, Baquar (CLH).

Distribution: Cosmopolitan in tropics of the Old World; common throughout W. Pakistan.

Flowering Period: Aug. to Feb.

(b) var. *concolor* (W. & A.) Baquar com. nov.

## Basionym:

*S. aegyptica* var. *concolor* W. & A., Prodr. Fl. Pen. Ind. Or. 1: 214 (1835).

## Synonymy:

*Aeschynomene picta* Cav. Ic. 4: 7 (1797).

*S. aegyptiaca* var. *picta* Prain in J. As. Soc. Bengal 66: 367 (1897).

Representative specimens: Karachi, North Nazimabad, 3-12-66, Baquar, (CLH); Karachi, Husain D'Silva Silva Town, 13-9-67, Baquar (CLH); Karachi, PCSIR Campus, 16-9-67, Baquar (CLH); Karachi, PCSIR Campus, 13-10-67, Baquar (CLH); Jamshoro, 23-2-67, Baquar (CLH).

Distribution: Widely distributed in the tropics of the Old World. Common throughout West Pakistan.

Flowering Period: Aug.-Feb.

(c) var. *bicolor* (W.A.) F.W. Andre, Fl. Pl. Sudan 2: 232 (1952); Gillett, Kew Bull. 17:115 (1963).

## Basionym:

*S. aegyptiaca* var. *bicolor* W. & A., Prodr. Fl. Pen. Ind. Or: 214 (1834).

## Synonymy:

*S. atropurpurea* Taub. in Engl. Bot. Jahrb. 23: 188 (1896).

Type: India, Wight 906 (K) (Gillett 1963).

Representative specimens: Khairpur, 7-3-56, Jafri 1212 (HJ); Rawalpindi, 6-1-66, Baquar (CLH); Rawalpindi, 23-10-67, Baquar (CLH).

Distribution: India, Senegal, Sudan, sometimes cultivated in other tropical regions (Gillett 1963), throughout West Pakistan (but not so common as other two varieties mentioned above).

Flowering Period: Aug.-Feb.

(d) var. *muricata*, Baquar var. novo.

A var. *sesban* caulibus, rachibus foliorum aculeatis differt.

Description: An erect perennial shrub or under tree with minute prickles on the younger stem and leaf rachis. *Raceme* 8-9 flowered of which only 2-3 appear to be fertilized to form the fruit. *Leaves* 6-12 cm with 9-17 pair of leaflets, *Leaflets* 1-2 cm long and 3-4 mm broad. *Flowers* yellow with purple or dark red dots at the back of the vexillum. *Vexillum* 2 cm broad and 1.7 cm long with a notch at the back. Claw of the vexillum is less than half as long as the blade. *Keel* 1.5 cm long, claw as long as the blade. *Wing* 2 cm long. Claw half as long

as the blade. *Calyx cup* 7 mm broad and 4 mm long. Fruits pendulous, twisted, slightly curved 9-19 cm long.

Holotype: Bhambhor, 30-1-68. Baquar (CLH).

Representative specimens: Bhambhor, Baquar. 30-1-68. (4 sheets CLH); Karachi, North Nazimabad, 16-2-68, Baquar (11 sheets CLH); Karachi, Memon-goth, 18-2-68, Baquar (2 sheets CLH).

Distribution: Presently known only from Karachi.

Flowering Period: Nov.-Feb.

3. *Sesbania bispinosa* (Jacq.) W.F. Wight in U.S. Dept. Agr. Bur. Pl. Ind. Bull. 137:15 (1909); Fawcett. & Rendle, Fl. Jam. 4: 24 (1920); Sprague & Milne-Redhead in Kew Bull. 1939: 159 (1939); Brenen, Check-list Trees & Shrubs Tanganyika Terr. 440 (1949) pro parte. Ali in Kew Bull.: 13: 288 (1958); Dale & Greenway, Kenya Trees & Shrubs: 375 (1961); *non sensu* Eggeling & Dale, Indig. Trees, Uganda: 311 (1952), *nec* Berhaut in Bull. Soc. Bot. Fr. 99: 299 (1953) *nec* Cufod., Enum. Pl. Aeth. 285 (1955), *nec* Hepper in Fl. W. Trop. Afr. ed. 2, 1: 532 (1958); Gillett, Kew Bull. 17: 129 (1963).

Basionym: *Aeschynomene bispinosa* Jacq., Ic. Pl. Rar. 3: 13. t. 564. (1793).

Type: Illustration of a plant of unknown (probably Asiatic) origin, cultivated in Vienna before 1788, in Jacq., Ic. Pl. Rar., t. 564 (Gillett 1963).

Synonymy:

*Aeschynomene aculeata* Schreb. in Nov. Act. Cur. 4: 134 (1770),

*Aeschynomene sesban* sensu Jacq. Coll. Bot. 2: 283 (1788) *non* L.

*Coronilla aculeata* Willd., Sp. Pl. 3: 1147 (1803) *nom illegit.*

*Sesban aculeatus* (Willd.) Poir. in Lam., Encycl. 7: 128 (1806) *nom. illegit.*

*Sesbania aculeata* (Willd.) Pers., Syn. 2: 316 (1807) *nom. illegit.*; *Halv.* in Fl. Cap. 2: 212 (1862); Baker in Fl. Trop. Afr. 2: 134 (1871); pro parte; Taub. in Eng., Pflanzenw. Ost. Afr. C: 213 (1895); Prain in Jour. As. Soc. Bengal 66: 369 (1897); Phill. & Hutch. in Bothalia 1: 50 (1921) pro parte; Bak. f. Leg. Trop. Afr.: 262 (1929), pro parte; non sensu Guil & Perr., Fl. Seneg. Tent.: 198 (1832) *nec* Hutch. & Dalz. Fl. W. Trop. Afr. 1: 387 (1928).

*Sesbania muricata* Macfad. Fl. Jam. 1: 257 (1837).

*Sesbania bispinosa* Steud. Nom. nud. 2: 2: 572 (1841).

*Emerus sesban aculeata* Kuntze, Rev. Gen. 181 (1891).

*Emerus aculeatus* (Willd.) Horn. in Hort. Reg. Bot. Haun. 2: 696 (1819). *non sensu* Schumach. & Thorn., Beskr. Guin. Pl.: 353 (1827).

*Sesban bispinosus* (Jacq.) Rydb., N. Amer. Fl.: 203 (1924).

Representative specimens: Mirpur, 1-1-1908, Jan Mohammad 20, KUH); Hyderabad, 12-9-56 Aziz Ahmed Khan (HJ); Tandojam, 9-9-56, A. Jalis (RAW); Mirpur, 1-1-56, J. Mohd. (RAW); Khanna, Sept. 28, Stewart 10117 (RAW); Sakesar, 29-9-51 A. Rahman (RAW); Rawalpindi, 10-4-31, W. Singh (RAW); Sialkot, Oct. Stewart (RAW); Chakwal, 30-7-39, S. Sarup. (RAW); Karachi Univ. Road, 6-6-67, Baquar (CLH); Karachi, PCSIR Campus, 13-6-67, Baquar (LCH); Karachi Univ. Road, near exhibition, 29-6-67, Baquar (CLH); Karachi, near Abdullah College, 9-7-67, Baquar (CLH); Karachi, PCSIR Campus, 16-6-67, Baquar (CLH); Karachi, Husain D'Silva Town, 6-7-67, Baquar (CLH); Karachi, PCSIR Campus, 23-7-67, Baquar (CLH); Karachi, PCSIR Campus, 16-8-67, Baquar (CLH); Karachi, Husain D'Silva Town, 13-8-67 (CLH); Karachi, PCSIR campus, 13-10-67, Baquar (CLH); Karachi, PCSIR Campus, 13-11-67 Baquar (CLH); Karachi, North Nazimabad, 10-12-67, Baquar (CLH).

Distribution: Cosmopolitan in tropics of the Old World (Baker 1876).

Flowering Period: June - Sept.

4. *S. concolor* Gillett in Kew Bull. 17: 142 (1963).

Description: Annual unarmed shrub reaching 1-2 m. Stem reddish. Leaf paripinnate compound, 10-25 cm long. Leaflet: 1-3 cm x 3-8 mm, 13-23 pairs, oblong. Inflorescences few flowered subsessile. Flowers dull yellow with blackish dots, 1 cm long, pedicellate, pedicel 1-2 mm. Calyx 3-4 mm long, teeth c.1 mm, hairy. Corolla papilionaceous. *Vexillum* yellow with minute blackish dots, 7 mm broad, claw c. 2.5 mm, half as long as the limb. *Wing* as long as the *vexillum* (2.5 mm broad), claw shorter than the limb. *Keel* as long as the *vexillum* (2.5 mm broad), claw longer than the limb. Style glabrous, ovary with few (3-4) ciliary hairs. Pod 7-13 cm long and 3-4 mm broad, older ones typically constricted pointed at the apex, more or less straight non pendulous. Seed oblong 3 mm x 1.5 mm, blackish or dark brown.

Type: Arabia: Hadhramaut near W. Idm. east of Tarim, in fields, 16-9-49 K. Guichard Had. 242 (EA., holotype; BM, isotype).

Representative specimens: India: Gujrat Ahmadabad, Wadaj Road, 27-9-14, W. T. Saxton 452 (K). W. Pakistan Montgomery, 27-11-33, a weed of cultivation, R. N. Parker 3293 (K); Karachi C.L. Campus, 19-8-67 Baquar 13853 (EA); Karachi, PCSIR Campus, 2-9-67, Baquar (CLH); Karachi, Off Univ. Road near PCSIR Campus, 2-7-67, Baquar (CLH); Karachi, PCSIR Campus, 2-6-67, Baquar (CLH); Karachi, PCSIR Campus, 9-6-67, Baquar (CLH); Karachi,



Off Univ. Road, 9-6-67, Baquar (CLH); Karachi, PCSIR, 3-7-67, Baquar (CLH); Karachi, PCSIR, 3-7-67, Baquar (CLH); Karachi, PCSIR, 18-8-67, Baquar (CLH); Karachi, PCSIR, 19-8-67, Baquar (CLH); Gharo, 3-6-67, Baquar (CLH); Thatta, 3-6-67, Baquar (CLH).

Distribution: Arabia; W. Pakistan; India.

Flowering Period: June - Sept.

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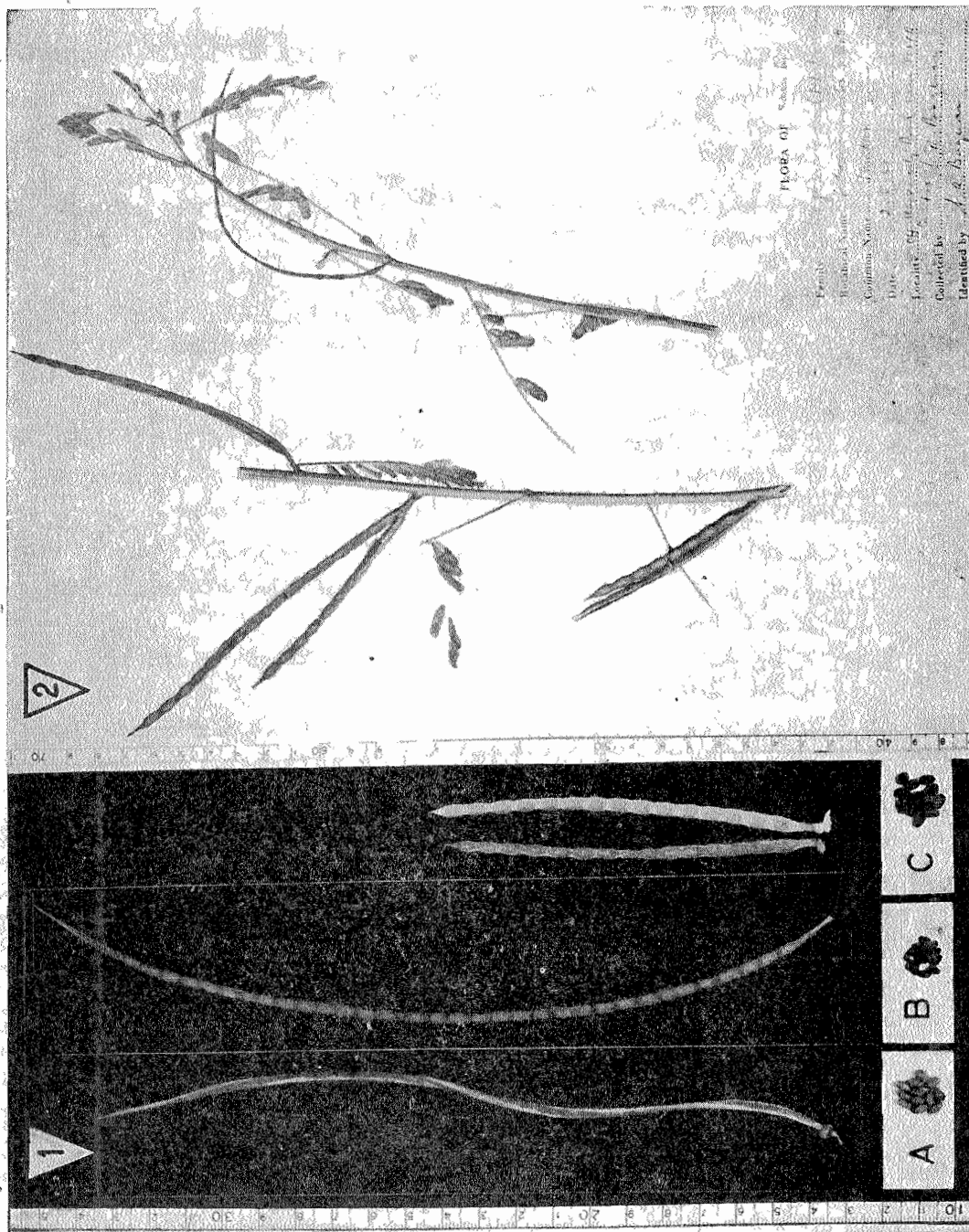


Fig. 1. Showing comparative size and form of the fruit and seeds. (A) *Sesbania sesban*, (B) *S. bispinosa* and (C) *S. concolor*.

Fig. 2. *S. concolor*.

TABLE I

Comparative description of four species of *Sebania*.

Species	Habit	Leaves	Leaflets	Stipules	Inflorescence	Flower
<i>S. grandiflora</i> (L.) Poir	Perennial 6-10 M tall tree	20 cm long much longer than the inflorescence	15-20 pairs, 2-5-3 cm long, 5-10 mm broad, elongate oblong, rounded and slightly unequal sided at the base, rounded and minutely mucronate at the apex	Deciduous, subulate minute	Short axillary raceme, 2-4 flowered	White or pinkish showy 10 cm
<i>S. sesban</i> (L.) Merrill	Perennial 2-5 M tall shrub. Branches pilose or pubescent usually ribbed	5-13 cm long	9-15 pairs, 1.5-2.5 cm long and 4-6 mm broad	5 mm long, ovate, acuminate, pubescent, usually deciduous, if present then coiled	Slender axillary raceme, 5-8 cm long with 3-8 flowers usually longer than the subtending leaf	Yellow 1.2-2 cm long
<i>S. hispidosa</i> (Jacq.) Wight	Annual. 1-2 M tall shrub, branches aculeate, sometimes smooth branching from the base	20-30 cm long	30-45 pairs, 1-2 cm long and 3-4 mm broad smaller and narrower than <i>S. sesban</i>	7 mm long, linear lanceolate, glabrous often subsperisitant	Lax raceme 3-6 flowered and shorter than the subtending leaf. Pedicel 5 mm long glabrous. Base of the pedicel densely or scantily pilose	Pale yellow 1-1.5 cm
<i>S. concolor</i> Gillett	Annual 1.2 M tall shrub, unarmed, stem reddish	10-25 cm long and 2-4 cm broad	13-23 pairs 1.5-3.5 cm long and 3-8 mm broad	Deciduous	Subsessile axillary racemes, 4-5 flowered	Pale yellow 1.2 cm with dots

<i>Calyx tube</i>	<i>Corolla</i>	<i>Vexillum</i>	<i>Fruits</i>	<i>Seeds</i>
2-5 cm, glabrous shallowly 2-lipped	White or pink, 7-10 cm deep	About 9 cm long with a narrow incurved claw	30-40 cm, long 8 mm wide falcate, not foetose, flat, the sutures much thickened 25-35 seeded	Reniform, 6 mm long, 4 mm broad, brown, smooth
3-5 mm long, 5-7 mm in diam. glabrous, truncate, with 5 small teeth or lobes 1 mm long. Ovate, usually minutely ciliate	Yellow, tinged with deep red or purple 1.2-1.8 cm long	Obovate, suborbicular or transversely oblong, rounded or usually retuse at the apex with two free appendages on the claw	12-18 mm long, flexible twisted, subterete, long acuminate, sutures little thickened, 15-30 seeded	Oblong, 3.5-4 mm long & 2 mm broad, light brown
3 mm long campanulate, glabrous teeth 1-2 mm long, subacute	Pale yellow 8-10 mm standard dotted with red	Broadly orbicular with 2 sessile appendages on the claw	15-20 cm long, 3 mm wide, firm, slightly falcate, beaked, not twisted, 35-45 seeded	Oblong 3 mm, long 1.5 mm broad, dark brown
Calyx teeth 1 mm hairy with long hairs	Dull yellow 8-10 mm standard dotted with blackish dots	7 mm, claw is half as long as the limb	6-12 cm long, 3-4 mm broad older one typically constricted, pointed, straight, non pendulous, 15-20 seeded not twisted	Oblong 3 mm long 1.5 mm broad blackish or dark brown