

DESMODIUM SCHUBERTIAE (LEGUMINOSAE),
A NEW SPECIES FROM CAMBODIA AND VIETNAM

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A new species of *Desmodium* (Leguminosae-Papilionoideae), *D. schubertiae* Ohashi, is found in Cambodia and Vietnam. It resembles *D. rubrum* (Lour.) DC. and is thought to have evolved from *D. heterocarpon* (L.) DC.

While preparing a treatment of *Desmodium* Desv. for the *Flore du Cambodge, du Laos et du Vietnam* at the Harvard University Herbaria in 1988, I found a new species of *Desmodium* among the specimens collected by Poilane in Cambodia and Vietnam and kept in the herbarium of the Laboratoire de Phanérogamie, Muséum National d'Histoire Naturelle (P). It is named in honor of Dr. Bernice G. Schubert, of the Arnold Arboretum of Harvard University, in recognition of her distinguished contribution to taxonomic research in *Desmodium*. In the present paper, the new species is described and its taxonomic relationships are discussed.

***Desmodium schubertiae* Ohashi, sp. nov.**

FIGURE.

Species haec a *Desmodio rubro* differt foliolis inferioribus dense sericeis, anguste ellipticis vel oblongo-ellipticis; calycibus lobis adaxialibus apicis profunde bifidis; ovariis uncinulato- et glandulifero-puberulis; leguminibus ad suturas inferiores uncinulato-puberulis, cetero glabrescentes, ad suturas superiores incrassatis.

TYPE: Vietnam (Annam), Prov. du Darlac, massif du Chu Yang Siuh, 1500 à 1800 m alt., sol granitique médiocre, 22 April 1941, *E. Poilane* 32489 (holotype, P; isotype, TUS; photo of holotype, A).

Shrubs ca. 2 m high, freely branched; young branches densely covered with appressed, silky, white or ferruginous hairs and spreading, minute, hooked hairs. Leaves 1-foliolate; stipules persistent even on 2- to 4-year-old branches, free, narrowly long-triangular with filiform apex, 7–9 mm long, ca. 1 mm wide at base, ciliate, scarious, striate, glabrous inside, densely appressed-pubescent outside; petiole 8–15 mm long, densely strigose with appressed, ferruginous hairs. Leaflets narrowly elliptic or oblong-elliptic, 2–4 cm long, 8–18 mm wide, obtuse to emarginate at apex, obtuse or rounded at base, entire and densely ciliate, subcoriaceous, the upper surface thinly pubescent with appressed soft hairs ca. 0.5 mm long, the lower surface densely so with ascending silky hairs

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Desmodium schubertiae: a, holotype; b, pods, $\times 2$.

to 1.5 mm long, the principal lateral nerves 6 to 8 on each side of midrib, prominent and not directly reaching margin, the cancellate veins inconspicuous below; stipels subulate, 4–5 mm long, silky outside. Inflorescences terminal and occasionally axillary, pseudoracemose, 7–14 cm long, 2-flowered at each node; rachis with dense spreading, hooked hairs ca. 0.3 mm long. Pedicels 5–6 mm long, spreading-hairy with straight, rigid hairs less than 0.5 mm long, glandular hairs ca. 0.3 mm long, and minute, hooked hairs ca. 0.1 mm long. Primary bracts ovate with acuminate apex, 6–7 mm long, 2–2.5 mm wide, scarious, striate, glabrous inside, with dense minute, hooked hairs and dense subspreading, straight hairs outside; secondary bracts and bracteoles absent. Calyces 3.5–4 mm long, pubescent with straight hairs and minute hooked hairs, 4-lobed, lobes longer than tube, the upper one 2.5–3 mm long, bifid at apex, teeth ca. 1 mm long, the lateral ones narrowly triangular, the lowest one longest. Flowers ca. 6 mm long, violet-rose; androecium diadelphous, the filaments glabrous; ovary and lower part of style covered with minute hooked hairs and glandular hairs. Pods ascending, sessile, narrowly oblong, 1.5–2.5 cm long, ca. 4 mm wide, straight, with 3 to 5 articles, dehiscent along lower suture, this undulate, with minute thinly uncinat hairs, the upper suture almost straight, much thickened, glabrescent, the lateral surfaces with prominent reticulate veins, glabrescent; articles 4.5–5 mm long. Seeds compressed-reniform, ca. 3.5 mm long, 2.5 mm wide, reddish purple, rim-arillate around hilum.

ADDITIONAL SPECIMENS EXAMINED. **Cambodia:** Bokor, montagnes de l'Éléphant, 1000 m alt., *E. Poilane* 23059 (P, TUS; photo A).

Desmodium schubertiae belongs to sect. *Nicolsonia* of subg. *Sagotia* because its pods, calyces, and bracts agree with those characterized for this section. It is a group of 12 Asiatic species (Ohashi, 1973). Of these, *D. ferrugineum* Wallich ex Thwaites, *D. heterocarpon* (L.) DC., *D. jucundum* Thwaites, *D. nemorosum* F. Mueller ex Benth, and *D. rubrum* (Lour.) DC. are similar to the new species in general appearance. These six species can be distinguished from each other by the following key:

1. Articles of pod at least twice as long as broad. *D. nemorosum*.
1. Articles of pod less than twice as long as broad.
 2. Leaves 3- or (1- to) 3-foliolate.
 3. Pods stalked, reflexed when mature. *D. ferrugineum*.
 3. Pods sessile, erect or ascending when mature.
 4. Leaflets coriaceous, with lateral nerves elevated below; leaves 3-foliolate; stipules broadly ovate, 5–6 mm wide; articles 5–6 mm long. *D. jucundum*.
 4. Leaflets not as above; leaves 1- and 3- or all 3-foliolate; stipules narrowly triangular, less than 3 mm wide; articles less than 4.5 mm long. *D. heterocarpon*.
 2. Leaves 1-foliolate.
 5. Leaflets glabrescent below, elliptic to nearly orbicular, with 4 to 6 pairs of lateral nerves; upper calyx-lobes minutely bifid at apex; ovary glabrous; pods glabrous, with upper suture only slightly thickened. *D. rubrum*.
 5. Leaflets densely silky-hairy below, narrowly elliptic or oblong-elliptic, with 6 to 8 pairs of lateral nerves; upper calyx-lobes distinctly bifid at apex; ovary

with minute hooked hairs and glandular hairs; pods glabrescent except on lower suture, with upper suture much-thickened. *D. schubertiae*.

Although *Desmodium schubertiae* is most similar to *D. rubrum* in the characters indicated in the foregoing key, it is most closely related to *D. heterocarpon*. There are fundamental similarities among these three species in habit, leaflets, flowers, and pods. However, *D. schubertiae* is found in mountainous regions between 1000 and 1800 m elevation, while *D. rubrum* is found at the seaside or in open places at low altitudes. There is a significant difference in distribution between these two species. *Desmodium heterocarpon* occurs in the tropical, subtropical, and warm regions of India, southeastern and eastern Asia, the Pacific islands, and Australia. It is common on sunny roadsides through forests, in thickets, or in grasslands, from sea level to more than 1000 m altitude, and is possibly sympatric with both *D. schubertiae* and *D. rubrum* in Indochina.

In Indochina and neighboring regions are concentrated *Desmodium harmsii* Schindler (southern Vietnam), *D. rubrum* (Vietnam; Hainan and Kwangtung, People's Republic of China), *D. schubertiae* (Vietnam, Cambodia), and *D. strigillosum* Schindler (Burma (rare), Laos, Cambodia, and Vietnam), all endemic species of sect. *Nicolsonia*. This distribution pattern is a characteristic feature of the section. Moreover, *D. griffithianum*, which occurs in India (Assam), Burma, Thailand, Laos, Vietnam, and southwestern China, and *D. topinii*, endemic to Burma, show related patterns of distribution. All these species are considered to be most closely related to *D. heterocarpon* (Ohashi, 1973) and perhaps are derived from it.

Desmodium schubertiae is therefore thought to be derived from *D. heterocarpon* in a mountainous region of Cambodia and Vietnam, and *D. rubrum* may also be evolved from *D. heterocarpon*, having adapted to open places near the sea or at low elevations.

LITERATURE CITED

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