

Hiroyoshi OHASHI*: **The taxonomic position of the genus
Murtonia (Leguminosae)**

大橋広好*: *Murtonia* 属(マメ科)の分類学上の位置

Murtonia is a monotypic genus endemic to Thailand. It was placed by Craib (1912), in the original description, as belonging to the position intermediate between the tribes Hedysareae and Phaseoleae in the sense of Bentham (1865). Next year he (1913) put it in the tribe Hedysareae, but among the genera of the tribe he "failed to trace any genus there to which it could be said to be even remotely allied". Again he (1928) noted that "in habit the nearest ally would appear to be *Cruddasia* which, however, has fruits resembling those of *Pueraria*". *Cruddasia* Prain is a monotypic genus distributing in Thailand and Burma and has been placed in the tribe Phaseoleae. This appears similar to *Murtonia* by a climbing habit, 5-foliolate leaves with lanceolate to ovate-lanceolate leaflets and long inflorescences. However, in stipules, nodose inflorescences, flowers and fruits both genera differ clearly and they are considered to be not closely related.

Gagnepain (1920) adopted the Craib's concept and placed *Murtonia* within his Papilionees II, in which the genera included are corresponding with those of the Bentham's tribe Hedysareae. Hutchinson (1964) treated *Murtonia* as a synonym of *Desmodium*. Geesink (1978) adopted my suggestion and added *Murtonia* as a distinct genus to his previous publication of SE. Asiatic Papilionaceae, though he noted a necessity of more materials to confirm its jointed pods.

In previous papers on *Desmodium* and its related genera (Ohashi 1971, 1973) and in our recent one on Desmodieae (Ohashi, Polhill & Schubert 1981) *Murtonia* has not been treated. However, I have examined the genus in these years based on specimens of which several were picked up from unidentified materials kept in TI and KYO. Consequently I have a conclusion on the taxonomic position of the genus. I think that *Murtonia* is a subgenus of the genus *Desmodium*, though once I considered it as a distinct genus.

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Murtonia is characterized by having following features; 1) a climbing habit, 2) hooked hairs exclusively on vegetative organs, i. e. stems, leaves and stipules, 3) persistent stipules which are broadly ovate, acuminate at the apex and auriculate at the base, glumaceous and prominently striate, 4) 5-foliolate leaves and 5) obliquely jointed, not constricted pods. Many of these characters are, however, seen rarely and sporadically in *Desmodium*. *D. oldhamii* of the subgenus *Podocarpium* has often 5-foliolate leaves and *D. brachypodum* of the subgenus *Sagotia* has occasionally 5-foliolate leaves; *D. heterocarpon* of the subgenus *Sagotia* has slightly or not constricted pods, though not obliquely jointed; and stipules of *D. scorpiurus* of the subgenus *Desmodium* are similar to those of *Murtonia* in shape. Moreover, in other characters used for separating genera in the tribe Desmodieae *Murtonia* does not differ from *Desmodium*. Therefore, the genus is apparently included in *Desmodium*.

However, the combination of the characters mentioned above makes it unique within *Desmodium*. Especially, its climbing habits with conspicuous hooked hairs, persistent large stipules and 5-foliolate leaves shows different features from any species of *Desmodium*. The 5-foliolate leaves of *Murtonia* differ from those of *D. oldhamii* and *D. brachypodum*. In *D. oldhamii* adult individuals have usually 7-foliolate leaves and in *D. brachypodum* those have commonly 3-foliolate leaves (cf. Ohashi in Ginkgoana pp. 12 & 133). It would be best to treat *Murtonia* as a subgenus of *Desmodium*, and the following taxonomic treatment is proposed:

Desmodium Desv. subgen. **Murtonia** (Craib) Ohashi, stat. nov.

Murtonia Craib in Kew Bull. 1912: 266 (1912).

Within the genus *Desmodium* subgenus *Murtonia* seems to be related to the subgenus *Desmodium*, because of the similarity in the shape of stipules, seeds and pollen grains. The seeds of the subgenus *Murtonia* are similar to those of the subgenus *Desmodium* in having dome-shaped lens which is remarkable as in the subgenus *Desmodium*. The pollen grains of the subgenus *Murtonia* are tricolporate, fine reticulate and of $28-32 \times 24-29 \mu$ in size, and are similar to especially those of *Desmodium laxiflorum* of the subgenus *Desmodium* (Ohashi 1973).

The subgenus *Desmodium* is divided into two sections of which the section *Angustistipulosa* contains four species. Among them *D. teres* Wall. ex Benth. and *D. lacei* Schindler are endemic to the regions covering Burma, Thailand and Indo-China. Generally, the regions are considered to be the center of dif-

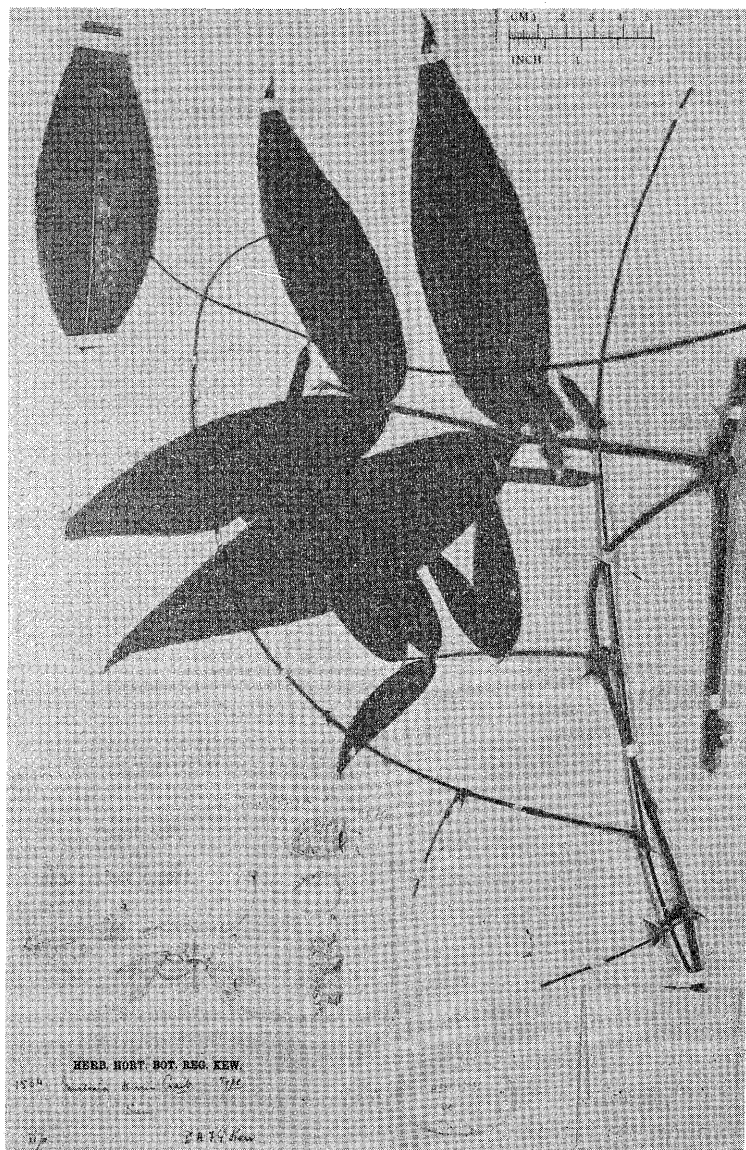


Fig. 1. Holotype of *Martonia kerrii* Craib (K).

ferentiation in the genus *Desmodium* and its related genera (Ohashi 1973). These facts suggest that an environment producing specific differentiations might exist in the regions at least in these legume species groups. The subgenus *Murtonia* seems to be derived from an ancestral stock probably common with that of the subgenus *Desmodium* within the regions mentioned above.

Under *Desmodium* a new name, not a new combination, for *Murtonia kerrii* is necessary because *Desmodium kerrii* was already used by Craib (1928) for *Pteroloma kerrii* Schindler. A revised description of the species including a new description of pollen grains is as follows:

Desmodium craibii Ohashi, nom. nov. (Fig. 1)

Murtonia kerrii Craib in Kew Bull. 1912: 266 (1912); in Hook., Icon. Pl. ser. 4, 10: t. 2979 (1913); Fl. Siam. Enum. 1: 428 (1928)—Gagnep. in Fl. Indo-Chine 2: 612 (1920).

A climbing undershrub, up to 150 cm high; stems simple or branched, woody, glabrous and terete near the base, young shoots rather sharply angular, striate, densely hooked hairy (hairs about 0.5 mm long). Leaves 5-foliolate but rarely mixed with 3-foliolate leaves, stipulate, stipellate and petiolate; terminal leaflets 2-stipellate and petiolulate, lateral ones 1-stipellate and sessile.

Stipules persistent, rigidly chartaceous, conspicuously striate, obliquely ovate, long-acuminate, distinctly auriculate at the base, 10-22 mm long and 7-13 mm wide, rather densely uncinately hairy on the outside and along the margin, glabrous on the inside; stipels subulate, 6-13 mm long and 0.7-1.3 mm wide, rather sparsely minute uncinately hairy (hairs about 0.1 mm long) outside and margin, glabrous inside. Petioles 3-7.5 cm long, conspicuously striate, with hooked hairs as those on the stem; petiolules 1-2.5 cm long, hairy like the petioles. Leaflets thinly chartaceous; terminal leaflets narrowly ovate, acute, obtuse or rotund at the base, (7-)11-20 cm long and 3-7 cm broad, entire but rugulose along the margin, the upper surface sparsely uncinately hairy only on the nerves, the lower surface densely rigid hooked hairy on the nerves, lateral nerves distinct especially on the lower surfaces and not reaching the margin, 11-18 on each side of the midrib, rather conspicuously cancellate-veined; lateral leaflets 4 in 2 pairs, similar to the terminal one in shape, texture, hairiness and venation, the lower pair almost equal to or larger than the terminal leaflet and the upper pair smaller than the terminal one.

Inflorescences racemose or paniculate, terminal or terminal and axillary,

usually 20–50 cm long; rachis densely with rigid hooked hairs (about 0.5 mm long); flowers usually 2-flowered fascicles but often solitary near the top of the inflorescence; pedicels 1.5–3 mm long in flower, 4–5 mm long in fruit, glabrous or with a few hooked hairs. Bracts rather persistent; primary bracts narrowly ovate, (2.5–)3–4 mm long and 0.7–1 mm wide, rather densely minute uncinately hairy outside and sparsely both uncinately and straight hairy along the margin; secondary bracts minute, narrowly ovate, 0.3–0.4 mm by about 0.1 mm in size, hairy like the primary bracts. Bracteoles absent.

Calyx broadly campanulate, about 3 mm long, sparsely hairy with longer straight hairs (0.5–0.7 mm long), shorter hooked hairs (0.5–0.7 mm long) and minute hooked hairs (below 0.2 mm long), tube about 1.5 mm long, 4-lobed, the upper lobe deltate with minute 2 teeth at the apex, about 1 mm long and 1.5 mm wide at the base, lateral lobes broadly triangular, acute at the apex, about 1.1 mm long and 1 mm wide, the lower lobe triangular, about 1.5 mm long and 1 mm wide. Corolla purplish (standard white, keel and wings purple); standard orbicular, shortly clawed, not auriculate, 5.5–7 mm in diameter; wings 5.5–7 mm long and about 1.5 mm wide, rounded at the apex; keel-petals 6–7.5 mm long including about 1 mm long claw and 2–2.3 mm wide, acute at the apex, not auriculate. Stamens monadelphous, the vexillary one free above the middle, the others united for two-thirds of their length, 4.5–6 mm long, glabrous. Pistils linear, 5.5–7 mm long, sparsely straight puberulent on the ovary, glabrous on the style: style 1.5–2 mm long, not thickened in the upper part; stigma capitate, terminal.

Pods (Fig. 2) linear, compressed, not constricted, slightly swollen, sessile, 9–11-jointed, 5–6.5 cm long and about 5 mm wide, densely with minute hooked hairs especially on sutures, both sutures thickened and straight, slightly reticulate-veined; joints obliquely quadrangle, 4–5 mm long. Seeds (Fig. 2) compressed, more or less obliquely transversely broadly oblong, 2.5–3×3.5 mm in size and about 1 mm thick, with a swollen ring-like margin around the hilum.

Pollen grains tricolporate, subprolate, prolate spheroidal or often oblate spheroidal, ellipsoidal to rhomboidal in the equatorial view, 28–32×24–29 (average 30.0×26.6) μ in size; colpi long, slightly opened, protruding at the equator, without constriction, the remaining part distinctly bordered by the endexine thickening, intruding, margin jagged, the membrane more or less granulated; pores large, elliptic, about 7×13 μ in size, equatorially elongated,

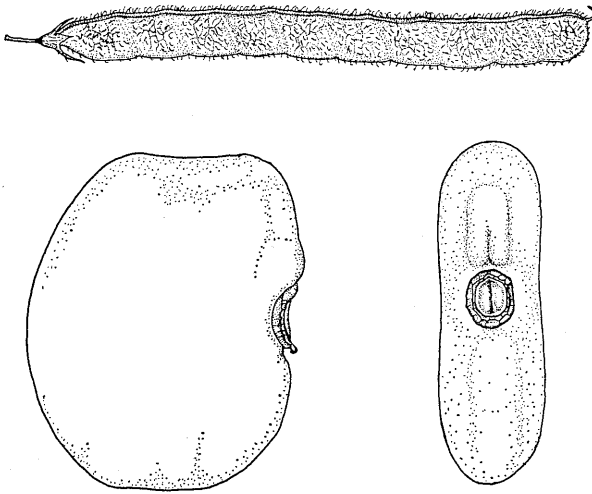


Fig. 2. Pod ($\times 1.3$) and seed ($\times 13$) of *Desmodium craibii*.
Both from Hayata s.n. Dec. 2, 1921.

marginate, more or less flattened or slightly intruding, the membrane granulated; exine evenly fine reticulate, lumina below 1μ in size, tectate, about 1.5μ thick, the ectexine thicker than the endexine, columellae distinct.

Distr. Thailand.

Specimens examined. Thailand. Cultivated at Chiang-mai from seed collected

at Lakon, Lampang, alt. ca 360 m, climber; standard white, keel & wings purple; in mixed forest (Kerr 1534 Nov. 5, 1911, K—Holotype, BM—Isotype); Udawn, Nawng Bua, alt. ca 300 m, under mixed deciduous forest (Kerr 8624 BM, BK); Ken Cao—Don Men (B. Hayata s.n. Dec. 2, 1921 TI); Lampang, Doi Palad, about 600 m, in bamboo thicket (T. Shimizu et al. T. 10848 KYO).

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本論文では *Murtonia* 属をヌスビトハギ属の亜属とする新見解とそれに伴う新学名、すなわち *Desmodium craibii* Ohashi (= *Murtonia kerrii* Craib), を発表した。本種の外部形態について、これまでの記載を訂正補足した。また花粉形態を新たに記載した。

Murtonia は単型属で、*M. kerrii* Craib よりなるとされていた。1912年 Craib によって Kerr no. 1534 (タイプ標本は K と BM にある) に基づいて記載された。タイプ標本は Chiang Mai=Chiengmai で栽培されていた植物で、これはタイ北部の Lampang で採集された種子から育てられたものである。本種の標本は少なく BK, K, BM などに 1, 2 点があるに過ぎなかったが、東大 (TI) の早田文蔵教授の未整理標本と、京大 (KYO) の1967年のタイ・コレクションの中にそれぞれ 1 点ずつ数枚のよい標本を見つけ出すことができ、本研究が可能となった。

Murtonia の分類学上の位置は長らく明らかではなかった。Craib (1912, 1913) や Ganepain (1920) は広義のイワオウギ連 (今日ではイワオウギ連, ヌスビトハギ連, クサネム連, Adesmieae, Coronilleae に分割されている) に属するが、その中では近縁属がないとした。Hutchinson (1964) はこれをヌスビトハギ属と合一したが、synonym の一つに挙げただけで終わった。

Murtonia はつる性の亜低木で、全体に鉤毛があり、大形の托葉と 5 小葉よりなる葉をもち、斜めに割れる小節果よりなる豆果をもつ。属レベルではヌスビトハギ属に含めることができるが、属内では独立した亜属として位置づけることがよいと考えられる。托葉、種子および花粉がヌスビトハギ亜属と似ていることによって両亜属は近縁であると推測した。ヌスビトハギ亜属の中で、*Angustistipulosa* 節に属する 4 種のうち 2 種がビルマ、タイ、インドシナに固有であることから *Murtonia* 亜属がタイに固有であることとその種分化に関して何らかの関連があることが考えられる。