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.
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 28-32×24-29 μ 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 *Murtonia kerrii* Craib (K).
Differentiation 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. Indochine 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 uncinate 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 uncinate 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 uncinate 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 uncinate hairy outside and sparsely both uncinate 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,
marginate, more or less flattened or slightly intruding, the membrane granulated; exine evenly fine reticulate, lumina below 1 μ in size, tectate, about 1.5 μ thick, the exetexine thicker than the endexine, columnellae distinct.

Distr. Thailand.
Specimens examined. Thailand.
Cultivated at Chiangmai 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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References

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本論文では Murtonia 属をヌスピ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 で採取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点あるが過ぎなかったが、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にはなかった。Craib（1912, 1913）や Ganepain（1920）は広義のイワオウギ類（今日ではイワオウギ類、ヌスピトハギ類、クサネム類、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）はこれをヌスピ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、全体に針毛があり、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。属レベルではヌスピトハギ属に含めることができ、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ピ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。ヌスピトハギ亜属の中で、Angustistipulosa 節に属する4種のうち2種がビルマ、タイ、インド総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。