

Shinobu AKIYAMA* & Hideaki OHBA*: **Studies on hybrids in
the genus *Lespedeza* sect. *Macrolespedeza* (3)
A putative hybrid between *L. Buergeri* Miq.
and *L. satsumensis* Nakai****

秋山 忍*・大場秀章*: ハギ属ヤマハギ節の雑種について (3)
キハギとサツマハギの雑種

Lespedeza satsumensis Nakai is distributed in south of the Satsuma peninsula (Akiyama & Ohba 1983) where is also included the range of *L. Buergeri* Miq. The latter prefers to grow in rocky habitat, so it is rather rare for it to meet the former showing a preference for soil deposited habitat. The type locality of *L. satsumensis*, Mt. Isomayama, is formed a mass of huge sedimental rocks. At the summit area, *L. Buergeri* grows on exposed rocks sporadically, while the intermediates between this and *L. satsumensis* sparsely grow on steep slopes with poor soil. In spite of its type locality, *L. satsumensis* could not be found here when we surveyed in 1979 and 1980. No plant of *L. cyrtobotrya* Miq. was found on the summit area either, though that species is very abundant on the midslopes and the foot of this hilly mountain.

The intermediate *Lespedeza* grows up to 1 m tall. Some branches have spreading hairs and others appressed hairs even in one individual. The phyllotaxy is also variable in one plant, some branches are short and more or less zigzag, but others well elongate and have leaves arranged spirally. Moreover, the leaflet varies elliptic with acute apex (like *L. Buergeri*) to elliptic-broadly elliptic-obovate with obtuse or retuse apex (approaching to *L. satsumensis*) according to branch, as the case of *L. cyrtobuergeri* (Akiyama & Ohba 1982). The upper surface of the leaflet is nearly glabrous, but sometimes has sparse hairs remaining at flowering period. Its flower (Fig. 1B) also shows the intermediate appearance between the putative parents, mainly in the standard, the calyx and the bracteole at the base of the calyx (Tab. 1).

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** Continued from Journ. Jap. Bot. 58: 97-104, 1983.

Tab. 1. Comparison of *L. Buergeri*, *L. satsumensis* and their putative hybrid.

Character	<i>L. Buergeri</i> (Mt. Isomayama)	The putative hybrid (Mt. Isomayama)	<i>L. satsumensis</i>
Petals	$W \doteq S < K$	$W < S < K$	$W < S \leq K$
Standard colour	whitish yellow with purple patches near the base	pale red-purple with deeper patches near the base	red-purple with deeper patches near the base
length	8-9 mm	9-10 mm	(8-) 9.5-11.5 mm
lamina	very broadly oblong-very broadly elliptic	oblong (-broadly oblong)	(obovate-) elliptic-broadly elliptic
auricle	well developing, broadly lunate	well developing, broadly lunate	not well developing, narrowly-broadly lunate
Calyx length	2.5-3 (-3.5) mm	3.5-4 mm	4-5 mm
lateral lobes	triangular	triangular-lanceolate	(narrowly) elliptic-lanceolate
Bracteole at the base of calyx	broadly elliptic, ca 1.7 mm (longer than calyx-tube)	elliptic-ovate, ca 1.3 mm (as long as or shorter than calyx-tube)	elliptic-ovate, 0.5-1 mm (shorter than calyx-tube)

Lespedeza kagoshimensis was described based on specimens only from Shiro-yama, Kagoshima City and thought to become extinct (Hatusima 1963). In vegetative features its leaflet is elliptic or obovate-elliptic with emarginate apex and has appressed (pilose) hairs as described by Hatusima (Fig. 2). Hatusima mentioned its differences from *L. satsumensis* in branchlet, racemes and flowers, and also from *L. Kinashii*¹⁾ in the inflorescence. Later, he (1969) suggested that *L. kagoshimensis* gave the impression that it was a hybrid between *L. Buergeri* f. *angustifolia* and *L. formosa* at a glance. Ohwi (1965) presumed that *L. kagoshimensis* was thought to be a hybrid between *L. cyrtobotrya* and *L. satsumensis* in having smaller flowers, apiculate calyx-lobes and small wings compared with the keel-petal.

1) It seems that Hatusima used this name wrongly instead of *L. Buergeri* var. *Kinashii*, which is now treated as a synonym of *L. Buergeri* f. *angustifolia*.

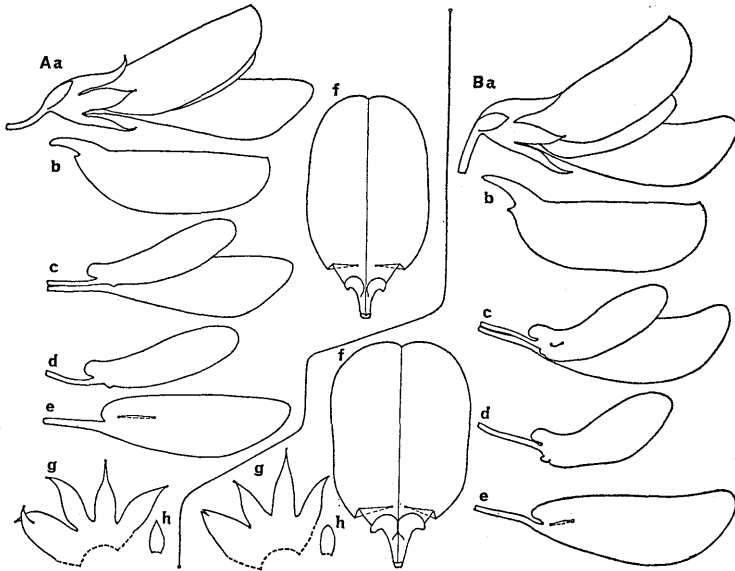


Fig. 1. Flowers of *Lespedeza* × *kagoshimensis*. A. Type. B. Ôura-machi, Mt. Isomayama (Ohba & Akiyama 2589, TI). a: Flower. b: Standard, lateral view. c: Wing and keel-petal. d: Wing. e: Keel-petal. f: Standard, opened. g: Calyx, dissected. h: Bracteole. All ×3.

Then the flower of the type of *L. kagoshimensis* is morphologically examined in detail (Fig. 1A). As the result it becomes clear that *L. kagoshimensis* shares the same expressions with the intermediate *Lespedeza* mentioned above particularly in the standard, the calyx and the bracteole. Except the pointing nature of the calyx-lobes, other essential features of *L. kagoshimensis* as well as the intermediate of Isomayama are not thought to be influenced from *L. cyrtobotrya* at all.

If *L. kagoshimensis* is regarded as a hybrid between *L. Buergeri* and *L. satsumensis*, there remains a few problems: 1) *L. kagoshimensis* is slightly different from the intermediate *Lespedeza* collected at Isomayama in having hairs on the upper surface of the leaflet; and 2) since *L. satsumensis* is not recorded from Kagoshima City, it is uncertain whether the type stock of *L. kagoshimensis* had grown naturally at Shiroyama or not. Nevertheless, from many floral and vegetative features, *L. kagoshimensis* and the intermediate

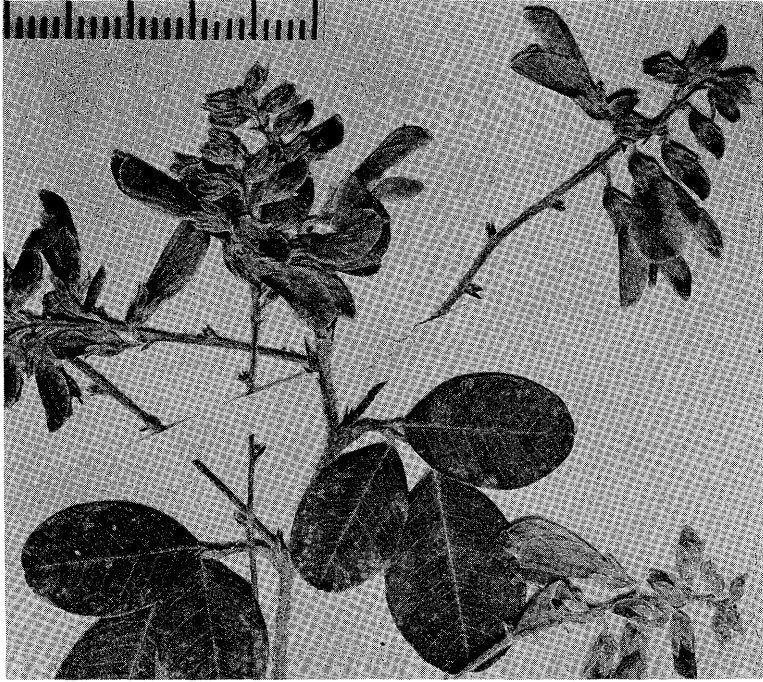


Fig. 2. *Lespedeza kagoshimensis* Hatusima (Hatusima on 29 Sept. 1956, KAG).

Lespedeza collected at Isomayama are reasonably considered to be the putative hybrids between *L. Buergeri* and *L. satsumensis*. *L. satsumensis* always has hairs on the upper surface of the leaflet, but *L. Buergeri* is usually glabrous. So in their hybrid the expression of the hairiness may be thought to be variable from glabrous to densely pubescent. The type stock might be transplanted from the Satsuma peninsula to Shiroyama where was the site of the castle and is now converted into a park, or even in cultivated origin.

Lespedeza* × *kagoshimensis Hatusima in Journ. Jap. Bot. 38: 155 (1963), pro. sp.—Ohwi, Fl. Jap. rev. ed. 791 (1965).

L. formosa (Vogel) Koehne var. *shiroyamensis* Hatusima in Mem. Fac. Agr. Kagoshima Univ. 6: 8 (1967), nom. nud., ut nov. comb.

L. formosa (Vogel) Koehne var. *kagoshimensis* (Hatusima) Hatusima in Ann. Rep. Yokosuka City Mus. no. 14, 4 (1969).

L. Buergeri Miq. × *L. satsumensis* Nakai.

The photograph cited as the type by Hatusima (1963) is not the real type, i. e. Hatusima 21279 on 25 Sept. 1959 (actually 1957), though the specimen photographed was collected from also the type stock cultivated in Kagoshima University (Kagoshima) on 29 Sept. 1956 by Hatusima.

Specimens examined. Japan. Kyushu. Kagoshima Pref.: Mt. Shiroyama ([ex the transplant at Kagoshima Univ.] Hatusima 21279 on 25 Sept. 1957, KAG-Holotype of *L. kagoshimensis*; on 29 Sept. 1956 & in Dec. 1958, KAG); Kawanabe-gun, Ôura-machi, Mt. Isomayama (Ohba & Akiyama 2585-2590, T1).

Literature cited

Akiyama, S. & H. Ohba 1982. Journ. Jap. Bot. 57: 232-240. — & — 1983. Journ. Jap. Bot. 58: 97-104. Hatusima, S. 1963. Journ. Jap. Bot. 38: 155-157. — 1969. Ann. Rep. Yokosuka City Mus. no. 14, 1-7. Ohwi, J. 1965. *Lespedeza* in Flora of Japan, rev. ed. 788-793.

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磯間山は薩摩半島南西部にある標高 362 m の小岳であるが、サツマハギ (*L. satsumensis* Nakai) の基準産地として知られている。1979, 80両年に調査したところ、山頂の岩上にキハギが、土壌の発達の悪い急斜面にキハギとサツマハギの中間形と思われる数個体が生育しており、サツマハギ自身は見られなかった。これら中間形の個体は、枝ぶりや葉形では 1 個体内でキハギとサツマハギを思わせる両方の特徴を示し、葉の表面は無毛かまたはごくわずかに毛を有していた。花部の形態は、特に旗弁、萼、萼の基部の小苞でキハギとサツマハギの中間的な現われを示している (Tab. 1)。

一方、シロヤマハギ (*L. kagoshimensis* Hatusima) は鹿児島市城山で見出された植物に基づいて記載されたものである。すでに初島博士 (1969) はこれが“一寸見たところではタチゲキハギとチョウセンヤマハギの雑種のような感じがする”と述べている。鹿児島大学に移植された個体やタイプ標本の花を検討したが、磯間山で採集した中間形のものとの区別できなかった (Fig. 1)。そこで、シロヤマハギと磯間山で採集された中間形はキハギとサツマハギの雑種であると推定した。シロヤマハギは花の形態では、キハギとサツマハギの中間的現われを示し、栄養器官の形質は 1 個体においてさえキハギ的な現われからサツマハギ的な現われをする。野外調査にあたり佐方敏男氏 (加世田市) にご協力いただいた。また標本利用にあたり迫静男先生 (鹿児島大学) に便宜をはかっていただいた。ここに深く謝意を表します。