

## First record of *Hylodesmum laxum* (Fabaceae) from Korea

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### 한국 미기록 식물: 영주갈고리(콩과)

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**ABSTRACT:** *Hylodesmum laxum* (Candolle) H. Ohashi & R. R. Mill subsp. *laxum* was recorded from Korea. The species is widely distributed in S. E. Asia, but in Korea the plant was the first found in the evergreen forest of Seogwipo-si in Jeju-do. *Hylodesmum* H. Ohashi & R. R. Mill was raised as a separate genus recently based on *Desmodium* sect. *Podocarpium* Benth. Except for two species, all Korean species included in the former *Desmodium* are classified into the genus *Hylodesmum*. A key to and enumeration of the Korean species of *Hylodesmum* are provided.

**Keywords:** *Hylodesmum*, *Hylodesmum laxum*, *Desmodium*, Korea, Fabaceae

**적 요:** 한국 미기록 식물 영주갈고리 *Hylodesmum laxum* (Candolle) H. Ohashi & R. R. Mill subsp. *laxum*를 보고한다. 영주갈고리는 동남아시아에 널리 분포하는 식물로 우리나라에서는 제주도 서귀포시 상록수림에서 최초로 발견되었다. 갈고리속(*Hylodesmum* H. Ohashi & R. R. Mill)은 도둑놈의갈고리속 *Podocarpium*절(*Desmodium* sect. *Podocarpium* Benth)에서 속으로 최근 분리, 승격되었다. 기존의 도둑놈의갈고리속에 속하는 한국산 중 2종을 제외한 나머지는 갈고리속으로 분류된다. 한국산 갈고리속 종의 검색표와 분류군 목록을 작성하였다.

**주요어:** 영주갈고리, 도둑놈의갈고리속, 갈고리속, 한국, 콩과

*Hylodesmum laxum* (Candolle) H. Ohashi & R. R. Mill was found in the evergreen forest of Seogwipo-si, Jeju-do. It is the first record from Korea. The species is widely distributed in S. E. Asia such as in Bhutan, India, Indonesia, Japan, Laos, Nepal, Philippines, Sri Lanka, Thailand, Vietnam (Huang and Ohashi, 2010). The species comprises three subspecies such as subsp. *laxum*, subsp. *falfolium* (H. Ohashi) H. Ohashi & R. R. Mill, and subsp. *lateraxum* (H. Ohashi) H. Ohashi (Ohashi and Mill, 2000). The plant found in Jeju can be recognized as

subsp. *laxum* (Figs. 1 and 2), in having leaves evergreen on lower or middle parts of the stem (Huang and Ohashi, 2010).

The plant grows in shaded places of the southern valley of Mt. Halla, alongside *Ardisia crenata* Sims, *Trachelospermum asiaticum* (Siebold & Zucc.) Nakai and *Ligustrum japonicum* Thunb., and also some ferns as the understory of a broad-leaved evergreen forest dominated by *Castanopsis sieboldii* (Makino) Hatus. ex T. Yamaz. & Mashiba.

*Hylodesmum* H. Ohashi & R. R. Mill was raised as a separate genus recently, based on *Desmodium* sect. *Podocarpium* Benth. [= *D.* subgen. *Podocarpium* (Benth.) H. Ohashi]. Except for

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two species of *Ohwia caudata* (Thunberg.) H. Ohashi [= *D. caudatum* (Thunberg.) Candolle] (Ohashi, 1999) and *Desmodium heterocarpum* (Linnaeus) Candolle, all Korean species included in the former *Desmodium* are classified into the genus *Hylodesmum*. *Desmodium* subgen. *Podocarpium* (= *Hylodesmum*) is distinct from the other subgenera of the genus due to the following characters: large flat seeds lacking a rim-aril around the helium; shallowly obtriangular articles; stipitate and deeply constricted pods that are pubescent exclusively with hooked hairs; lax-flowered pseudoracemes; and ebracteolate calyx (Ohashi, 1973; Ohashi and Mill, 2000).

**A key to *Hylodesmum* and its related genera**

- 1. Petioles winged ..... *Ohwia* 된장풀속
- 1. Petioles not winged
  - 2. Lements sessile, lower suture constricted between seeds but isthmus more than 1/3 as wide as pod; seeds rim-arillate ..... *Desmodium* 도둑놈의갈고리속
  - 2. Lements stipitate, lower suture deeply constricted between seeds and isthmus less than 1/5 as wide as pod; seeds scarcely rim-arillate ..... *Hylodesmum* 갈고리속

*Ohwia* H. Ohashi, Sci. Rep. Tohoku Univ., Ser. 4, 40: 243. 1999.

*Catenaria* Benth in Miquel, Pl. Jungh. 217, 220. 1852, not Roussel (1806), nor Sternberg (1825)

Korean name: Doen-jang-pul-sok 된장풀속 (신칭)

Two species in E. and S. E. Asia.

One species in Korea.

*Ohwia caudata* (Thunberg) H. Ohashi, Sci. Rep. Tohoku Univ., Ser. 4, 40: 243. 1999.

*Heydysarum caudatum* Thunberg in Murray, Syst. Veg., ed. 14, 675. 1784.

*Desmodium caudatum* (Thunberg) Candolle, Prodr. 2: 337. 1825.

*Catenaria caudate* (Thunberg) Schindler in Repert. Spec. Nov. Regni Veg. 20: 275. 1924.

Korean name: Doen-jang-pul 된장풀

*Hylodesmum* H. Ohashi & R. R. Mill, Edinburgh J. Bot. 57: 173. 2000.

*Desmodium* sect. *Podocarpium* Benth in Miquel, Pl. Jungh. 226. 1852.

*Podocarpium* (Benth) Y. C. Yang & P. H. Huang, Bull. Bot. Lab. N. E. Forest. Inst. Harbin 4: 1-15. 1979.



Fig. 1. *Hylodesmum laxum* subsp. *laxum*. A. habit; B. inflorescences; C. flowers; D & E. fruits; F. young leaves; G. leaves in flowering.

Korean name: Gal-go-ri-sok 갈고리속 (신칭)  
 Fourteen species in E. Asia and N. America.  
 Three species in Korea.

### A key to the Korean species of *Hylodesmum*

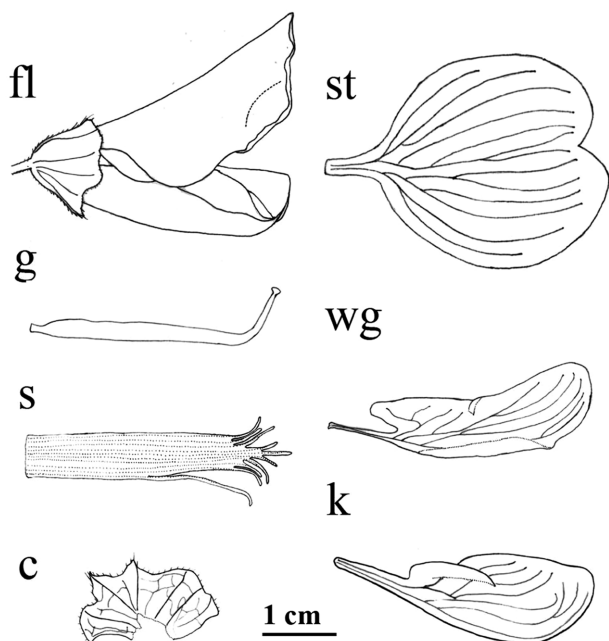
1. Leaflets 5-7 ..... *H. oldhamii*
1. Leaflets 3; flowers 3–7 mm long
  2. Leaves deciduous; principal lateral nerves of leaflets extending to margin; flowers 3–4 mm long; stipules subulate, ca. 1 mm wide at base, deciduous ..... *H. podocarpum*
  2. Leaves evergreen; principal lateral nerves of leaflets looped within margin; flowers 6–9 mm long; stipules triangular-lanceolate, ca. 2 mm wide at base, persistent ..... *H. laxum* subsp. *laxum*

#### Enumeration for Korean *Hylodesmum*

*Hylodesmum oldhamii* (Oliver) H. Ohashi & R. R. Mill, Edinburgh J. Bot. 57: 180, 2000.

*Desmodium oldhamii* Oliver, J. Linn. Soc., Bot. 9: 165. 1865 ["oldhami"].

Korean name: Keun-do-duk-nom-ui-gal-go-ri 큰도독놈의 갈고리



**Fig. 2.** Flower of *Hylodesmum laxum* subsp. *laxum*. fl. flower; g. gynoecium; s. stamens; c. calyx from inside; st. standard; wg. wing; k. keel-petal.

*Hylodesmum podocarpum* (Candolle) H. Ohashi & R. R. Mill, Edinburgh J. Bot. 57: 181, 2000.

#### subsp. *podocarpum*

*Desmodium podocarpum* Candolle, Ann. Sci. Nat. (Paris) 4: 102, 1825.

Korean name: Gae-do-duk-nom-ui-gal-go-ri 개도독놈의 갈고리

subsp. *fallax* (Schindler) H. Ohashi & R. R. Mill, Edinburgh J. Bot. 57: 182, 2000.

*Desmodium fallax* Schindler, Bot. Jahrb. Syst. 54: 55, 1916.

*Desmodium podocarpum* subsp. *fallax* (Schindl.) H. Ohashi, Bull. Univ. Mus. Univ. Tokyo 2: 65, 1971.

Korean name: Gin-do-duk-nom-ui-gal-go-ri 긴도독놈의 갈고리

subsp. *oxyphyllum* (Candolle) H. Ohashi & R. R. Mill, Edinburgh J. Bot. 57: 182, 2000.

var. *oxyphyllum* (Candolle) H. Ohashi & R. R. Mill, Edinburgh J. Bot. 57: 183, 2000.

*Desmodium oxyphyllum* Candolle, Ann. Sci. Nat. (Paris) 4: 102, 1825.

*Desmodium podocarpum* Candolle subsp. *oxyphyllum* (Candolle) H. Ohashi, Bull. Univ. Mus. Univ. Tokyo 2: 65, 1971.

Korean name: Do-duk-nom-ui-gal-go-ri 도독놈의 갈고리

var. *mandshuricum* (Maxim.) H. Ohashi & R. R. Mill, Edinburgh J. Bot. 57: 183, 2000.

*Desmodium podocarpum* Candolle var. *mandshuricum* Maxim., Bull. Acad. Imp. Sci. Saint-Petersbourg 31: 28, 1886.

Korean name: Ae-gi-do-duk-nom-ui-gal-go-ri 애기도독놈의 갈고리

*Hylodesmum laxum* (Candolle) H. Ohashi & R. R. Mill, Edinburgh J. Bot. 57: 178, 2000.

#### subsp. *laxum*

*Desmodium laxum* Candolle, Ann. Sci. Nat. (Paris) 4: 102, 1825.

Korean name: Yeong-ju-gal-go-ri 영주갈고리 (신칭)

#### Description of *Hylodesmum laxum* subsp. *laxum*

**Perennial** evergreen herbs, 40–120 cm tall. **Stem** erect, somewhat woody at base, simple or often branched, pubescent. **Stipules** triangular-lanceolate, ca. 2 mm wide at base, persistent. **Leaves** 3-foliolate, often clustered on middle or lower part of stem, reddish brown at young stage. **Leaflets** subcoriaceous,

upper surface deep green, pubescent, lower surface whitish green, subglabrous, reticulate veins rather conspicuous, principal lateral nerves 4–6 pairs, looped within margin, margin entire; terminal leaflet ovate, 5–12 cm long, 3–5 cm wide, apex acuminate. **Inflorescences** terminal or terminal and axillary, pseudoracemose, 55–75 cm long; laxly flowered; pedicel 3–9 mm long at anthesis, ca. 14 mm long in fruit. **Flowers** usually 2 per node, 6–9 mm long; calyx 4-lobed, ca. 2 mm long, lobes shorter than tube; petals pale pink to whitish; standard elliptic, apex emarginate, clawed at base; wings narrowly elliptic, auriculate and shortly clawed at base; keel-petals obtuse at apex, clawed at base, not auriculate; stamens 10, ca. 7 mm long; ovary minutely stipitate, 1-ovuled. **Loment**s stiped, 2–3 jointed, hooked hairs; articles ca. 10 mm long; stipes 13–17 mm long.

**Flowering:** Aug. to Oct.

**Fruiting:** Sept. to Oct.

**Distribution:** Korea, Japan, Taiwan, China, Malesia, India, Bhutan, Indonesia, Laos, Nepal, Philippines, Sri Lanka, Thailand, Vietnam.

**Korea:** Jeju. Streamside in evergreen broad-leaved forests.

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