

Hiroyoshi OHASHI*: *Notes on Himalayan Hedysarum*
(Leguminosae)

大橋広好*: ヒマラヤのイワオウギ属について**

Three previously unrecognized plants of the genus *Hedysarum* have been found from Central Nepal during the preparation of an account of the Himalayan species of the genus for "The Flora of Eastern Himalaya" third report and also of the family Leguminosae for The Anglo-Japanese Joint Project "Enumeration of the Flowering Plants of Nepal". Of the three two plants are considered as species and the remaining one is regarded as a variety of one of the new species. Therefore, in the present paper these three are named as *Hedysarum campylocarpon*, *H. nepalense*, and *H. nepalense* var. *subhirtellum*. The most closely allied to them is apparently *H. fistulosum* Hand.-Mzt. from Yunnan and Upper Burma, and among the Himalayan species hitherto known the new taxa resemble *H. microcalyx* Baker in leaflets, inflorescences and flowers. All of these taxa, however, are clearly distinguishable from each other by several characters as follows:

1. Leaves verticillate, 1-3 inflorescences at the axil of each leaf on the upper part of stem. Leaflets 5-6-paired. Stipules connate and 3-5 cm long, hence, sheathing entirely the young leaves and inflorescences. Calyx-lobes deltoid-cuspidate, about 1/3 of the calyx
..... *H. microcalyx* Baker
1. Leaves alternate, 1 inflorescence at the axil of each leaf on the upper part of stem. Leaflets 8-12-paired. Stipules connate along the leaf-opposite side and up to 2 cm long, hence, not sheathing the young leaves and inflorescences. Calyx-lobes triangular to narrowly triangular, 1/3-1/2 of the calyx.....2
2. Wings shorter than the keel-petals. Calyx 5-lobed, the upper lobes a little shorter than the other lobes, the lower lobe more or less longer

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- than the others. Inflorescences densely flowered, flowers often whorled. Leaflets 10-12-paired *H. fistulosum* Hand.-Mzt.
2. Wings longer than the keel-petals. Calyx 4-lobed, the upper lobe distinctly shorter than the other lobes, the lateral and lower lobes almost equal in length. Inflorescences rather lax-flowered, flowers alternate. Leaflets 8-11-paired 3
3. Pods pendulous, irregularly crenulate to toothed along the margin. Standards elliptic. Calyx 4-6 mm long, its tube apparently longer than the lobes, lateral and lower lobes 1.2-2.5 mm long
..... *H. campylocarpon* Ohashi
3. Pods ascending, entire along the margin. Standards obovate. Calyx 7-8 mm long, its tube more or less longer than the lobes, lateral and lower lobes 3-4 mm long 4. *H. nepalense* Ohashi
4. Standard glabrous var. *nepalense*
4. Standard puberulent var. *subhirtellum* Ohashi

Hedysarum nepalense Ohashi, sp. nov. (Fig. 1)

Planta perennis, 30-150 cm alta. Caules robusti, prope basin (3-)5-7 mm crassi, primo dense albo-tomentosi sed dein pilis gradatim sparsis. Stipulae foliis oppositae connatae brunneae membranaceae, apice acutae, usque ad 2 cm longae, intus glabrae, extus primo pilosae sed demum glabrescentes. Folia alterna, vulgo (petiolo 1.5-2.5 cm longo incluso) 15-20 cm longa, imparipinnata, rhachi primo albo-tomentosa. Foliola 8-10(-11)-juga, generaliter opposita, anguste ovata vulgo 3-6 cm longa 1-2 cm lata, supra sparsim pubescentia infra tomentosa, margine integra, sine stipellis. Inflorescentiae axillares ramosae, floribus plerumque 20-30, usque ad 20 cm longae, pedunculo et rhachibus primo tomentosis sed demum glabrescentibus. Bracteae membranaceae cymbiformes vel anguste ovatae, apice acuminatae 6-11 mm longae 1.5-2 mm latae, extus sparsim pubescentes intus glabrae. Pedicelli 3-5 mm longi per anthesin dense adscenderter pubescentes, bracteolae anguste ovatae, apice acuminatae, 2.5-5.5 mm longae 0.3-0.8 mm latae, pube ei bracteae simili. Calyx 7-8 mm longus, et supra basin extrinsecus et supra medium intrinsecus dense puberulus, ad maturiorem fructus persistens, supra medium 4-fidus, tubo laciniis saltem logiore, 3.5-4.5 mm longo, lacinia postica ceteris brevior, depresso triangulari 2-3.5 mm longa basi

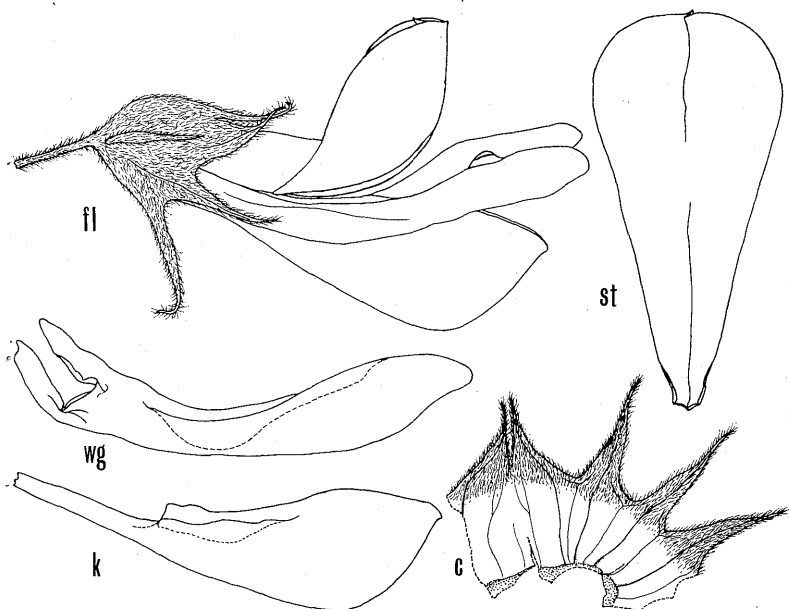


Fig. 1. *Hedysarum nepalense* Ohashi, fl: flower, st: standard, wg: wing, k: keel-petal, and c: calyx from inside. All $\times 3$ and drawn from the isotype.

4-6 mm lata, apice bidentata (dentibus 1.5-2.5 mm longis), laciniis lateralibus et antica anguste triangularibus 3-4 mm longis basi 1.5-2 mm latis. Corolla subrosea vel purpurascenti-rosea, vexillum obovatum, apice rotundatum vel apiculatum, alis carinisque minus, 15.5-19 mm longum 6-9 mm latum, utrinque glabrum (var. *nepalense*) vel albo-puberulum (var. *subhirtellum*); alae ceteris longiores, anguste ellipticae, unguiculatae, (ungue 3-5 mm longo incluso) 16.5-23.5 mm longae 2.5-4.5 mm latae, apice laminarum obtusae prope basin distincte auriculatae, auricula 3-4 mm longa; carina vexillo longior, unguiculata, (ungue 6-7 mm longo incluso) 17.5-20 mm longa 4-6 mm lata, apice laminae acuta vel apiculata, basi auriculata. Stamina diadelphica, filamentum vexillari 14.0-18.5 mm longo, ceteris alte connatis, vexillari vulgo circa 3 mm longioribus, i. e. 18-21 mm longis. Pistillum 19-22 mm longum, brevistipitatum, ovario 2-3(-4) ovulato, 4.5-7 mm longo, dense et breviter adpresse piloso, stylo 14-15 mm longo. Legumina ads-

cententia, 2-3(-4)-articulata, distincte stipitata, 2.5-3.5(-4) mm longa, adpresse minute pilosa vel glabrata, utrinque suturis paucillum marginatis, margine integra; articulis anguste obovatis 7-10(-13) mm longis 4-6 mm latis, plus minusve reticulato-venosis, margine anguste alatis, ala integra.

Hab. Nepal: Tukucha (Kali Gandaki), 10000 ft. Open bank of rivers. Flowers pink. Height 1 ft. June 13, 1954. Stainton, Sykes & Williams 1080 (BM-Holotype, TI-Isotype); loc. cit. Open rocky slopes. Height 2 ft. Corolla pink. Aug. 22, 1954. Stainton, Sykes & Williams 7394 (BM, TI); loc. cit. On steep bank at edge of stream. Corolla pink. Bottom of leaf light green. Sept. 15, 1954. Stainton, Sykes & Williams 7853 (BM, TI); loc. cit. On steep bank at edge of river. Sept. 24, 1954. Stainton, Sykes & Williams 7995 (BM, TI); Taglung (S. of Tukucha), Kali Gandaki, 10000 ft. On river bank. Shrub 5 ft. Calyx green, corolla pink and white. July 11, 1954. Stainton, Sykes & Williams 1698 (BM, TI); Marsiandi Valley, 11500 ft. Clumps on old moraine. Flowers mauve-pink to pink, fading white. Stems pinkish. June 29, 1950. D.G. Lowndes 1065 (BM, TI).

Var. **subhirtellum** Ohashi, var. nov.

A typo vexillo albo-puberulo differt.

Hab. Nepal: Bimtakothi, 13500 ft. On moraine and glacier among big rocks. Flowers bright purplish pink. Leaves dull grey-green. Stems ± suffused with purplish pink. Up to 3 ft. Aug. 27, 1950. D.G. Lowndes 1474 (BM-Holotype, TI-Isotype).

Hedysarum campylocarpon Ohashi, sp. nov. (Fig. 2)

Planta perennis, 30-90 cm alta. Caules erecti robusti, prope basin circa 5 mm crassi, primo albo-tomentosi sed deinde fere glabrescentes. Stipulae foliis oppositae connatae brunneae membranaceae, apice simplices, vulgo 1-2 cm longae, intus glabrae, extus primo pubescentes sed dein glabrescentes. Folia alterna, vulgo (petiolo 1-3 cm longo incluso) 15-20 cm longa, rhachi albo-lanuginosa; foliola alterna vel opposita 8-10-juga, anguste ovata vel interdum anguste elliptica, apice acuta vel obtusa, vulgo 1.5-4 cm longa 0.7-1.8 mm lata, utrinque sparsim vel dense adpresse albo-sericea, margine integra; sine stipellis. Inflorescentiae axillares ramosae, plerumque floribus 20-30 ornatae, vulgo 12-20 cm longae; earum rhachi primo albo-lanuginosa sed dein fere glabrescenti; pedunculo 4-10 cm longo; bracteis anguste vel

vere ovatis vel cymbiformibus, 3-10.5 mm longis 1.5-2.5 mm latis, apice acuminatis, extus pubescentibus; pedicellis 3-5 mm longis, dense pubescentibus, per anthesin adscendentibus vel patentibus sed in fructus maturitate deorsum curvatis; bracteolis subovatis 3-4 mm longis circa 1 mm latis, extus pubescentibus. Calyx 4-6 mm longus, et supra basin extus et supra medium intus dense puberulus, supra medium 4-fidus; tubo laciniis distincte longiore, 3-3.5 mm longo; lacinia postica ceteris brevior, 1-2 mm longa, apice bidentato (dentibus 0.5-1.3 mm longis), lacinnis ceteris triangularibus, 1.2-2.5 mm longis basi 1.5-2 mm latis, lateralibus anticam paene aequantibus vel antica tantum brevioribus. Corolla magentea vel purpurascens, alis cetera petala paene aequantibus vel eis longioribus; vexillum ellipticum apice rotundatum vel acutum, 15.5-17 mm longum 7.5-9 mm latum, glabrum; alae unguiculatae, (ungue 3.5-4.3 mm longo incluso) 17.5-19 mm longae, plus minusve incurvatae, laminis anguste oblongis 3-5 mm latis apice obtusis basi auriculatis (auricula 3.5-4.3 mm longa); carina longe unguiculata, (ungue 5.6-6.5 mm longo incluso) 17-18 mm longa 4.5-5.5 mm lata, incurvata, lamina fere obovata apice acuta basi breviter auriculata. Stamina diadelpha,

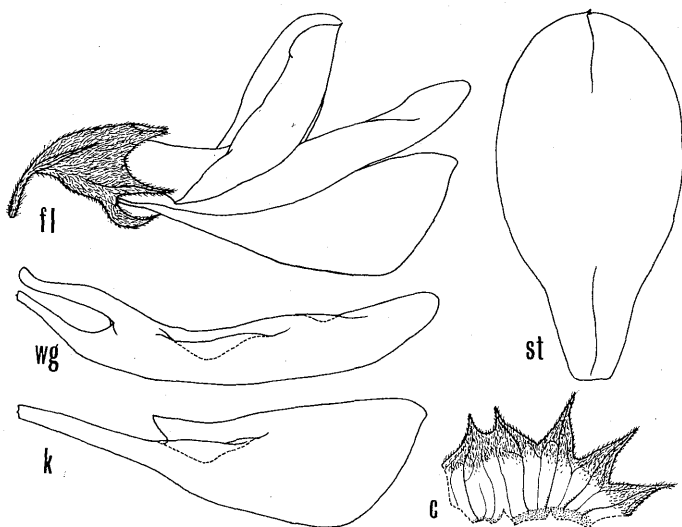


Fig. 2. *Hedysarum campylocarpon* Ohashi fl: flower, st: standard, wg: wing, k: keel-petal, and c: calyx from inside. All $\times 3$ and drawn from the isotype.

filamento vexillari omnino libero, 13.5–16 mm longo; ceteris connatis vexillari vulgo 3–4 mm longioribus, i. e. 17–20 mm longis. Pistillum 17–21 mm longum, breviter stipitatum (stipite 0.5–1 mm longo); ovario anguste elliptico 6–8 mm longo 2–3(–4)-ovulato, dense adpresse piloso; stylo 10–14 mm longo; stigmatibus minute capitato. Legumina pendula, 2–3(–4)-articulata, 2.5–4 mm longa, distincte stipitata, primo adpresse puberula sed dein glabrescentia, utrinque suturis conspicuo marginatis, margine irregulariter crenulata vel subdenticulata; articulis anguste obovatis vel ellipticis, 8–12 mm longis 6–7 mm latis, reticulato-venosis. Semina plerumque 4.3–4.7×3.3–3.5 mm magna.

Hab. Nepal: Likhoo Shailoong, 14–15000 ft. Fl. bluish-pink. Capt. Lall Dhwoj 0408 (BM); Kyangin Kharka, 11–12000 ft. Shrub beside the Langtang river. July 18, 1967. S. B. Malla 9195 (BM); Langtang, 12000 ft. River side, dry stony ground. Fl. magenta; 2–3 ft. June 23, 1949. O. Polunin 562 (BM, TI); Shiar Khola, W. of Chumjl, 9500 ft. Boulderly slopes. Flowers purplish. P. C. Gardner in 1953 (BM); Langtang—Kyanging, 3400–3800 m. July 13, 1970. H. Kanai & P. R. Shakya 676163 (TI); Chilime Kharka 13500 ft. Stream side. Flowers purple. July 1949. O. Polunin 1226 (BM-Holotype, TI-Isotype).

The present study have been based mainly on the specimens from TI: The Herbarium, Department of Botany, Faculty of Science, University of Tokyo; BM: British Museum (Natural History); and K: The Herbarium and Library, Royal Botanic Gardens, Kew. I wish to express my thanks to the authorities in BM and K for enabling me to study the specimens in their charge.

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ヒマラヤのイワオウギ属は Baker によって 1876 年 Flora of British India 2: 145–147 で初めて分類学的に整理された。ここで彼は Bentham の命名した 5 種を正式に発表し、更に Baker 自身の 3 新種を加え、計 8 種を認めた。後に 1897 年 Prain がそのうちの 1 種 *H. laxiflorum* はシベリアから記載された *H. sibiricum* と同一であるという見解を明らかにした。これらの結果は B. Fedtschenko のモノグラフ (1902 年) に受け入れられ、今日に至っている。しかしながらここ 30 年位の間にヒマラヤ各地から集められた British Museum (Natural History) の多数のイワオウギ属の未同定標本と東大や Kew のコレクションを調べた結果、ヒマラヤの同属の種類

について再検討する必要がでてきた。この結果は Flora of Eastern Himalaya の第 3 報に発表する予定でいるが、本論文ではそのうちの中部ネパールから発見された 2 新種 *H. campylocarpon* Ohashi および *H. nepalense* Ohashi と 1 新変種 *H. nepalense* var. *subhirtellum* Ohashi について記載し、かつ近縁種との区別について述べた。両新種は非常にはっきりした種であり、既知のヒマラヤ産の種類の中では *H. microcalyx* Baker に近く、属の中では雲南とビルマ北部の *H. fistulosum* Hand.-Mzt. に近縁であるが、前述の検索表の如く明らかに異なっている。分布域が狭く、前者が Kali Gandaki と Marsiandi Valley の上流、後者が Langtang Valley とに限られていることや *H. microcalyx* と混同されていたため今日まで未発見であったと思われる。

○ホウズキハギ属数種の学名訂正 (大橋広好) Hiroyoshi OHASHI: Corrections to my combinations in the genus *Christia*

1971年に発表した論文の中でインドシナとタイのホウズキハギ属 4 種 1 変種について新組合せを行なったが、属名にミスプリントがあった。国内有効出版物に関する植物分類学会の申し合せ (本誌 26 卷 31-32 頁) もあるので再発表して、訂正をもちかえっておきたいと思う。

The following combinations for four species and one variety of the genus *Christia* were made under *Christa* in my previous paper (Ohashi 1971).

Christia Moench (1802)—Ohashi in Journ. Fac. Sci. Univ. Tokyo III, 11: 55 (1971), ut *Christa*. Type species: *C. lunata* Moench (= *C. vesperilionis* (L. f) Bakh. f. ex van Meeuwen).

Christia Convallaria (Schindl.) Ohashi, l. c. 56 in nota, ut *Christa Convallaria*.

Christia lychnucha (Schindl.) Ohashi, l. c. 56 in nota, ut *Christa lychnucha*.

Christia paniculata var. *siamensia* (Craib) Ohashi, l. c. 56 in nota, ut *Christa paniculata* var. *siamensia*.

Christia Pierrei (Schindl.) Ohashi, l. c. 56 in nota, ut *Christa Pierrei*.

Christia translucida (Schindl.) Ohashi, l. c. 56 in nota, ut *Christa translucida*.

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