

NEW DESCRIPTIONS

A NEW SPECIES OF *PUERARIA* DC. (FABACEAE) FROM GARHWAL HIMALAYA, U.P., INDIA¹

(With fifteen text-figures)

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During the course of botanical explorations in the remote localities of the Garhwal Himalaya we came across some interesting specimens of the genus *Pueraria* DC. The specimens were matched with *Pueraria ferruginea* Kurz. However, thorough perusal of literature and examination of the specimens at the Botanical Survey of India, Northern Circle (BSD) and Forest Research Institute (DD), Dehradun, indicated that it is a distinct species, and is described as a new species.

***Pueraria garhwalensis* sp. nov.**

Haec species *Pueraria ferrugineae* Kurz affinis, sed differt plantae habitu annuo, foliis glandulari-pubescentibus, in superficiebus ambabus, stipulis majoribus, calycis lobis inaequalibus, quam tubo brevioribus, corollae ala carinaque membranacea, staminibus diadelphis, stamine uno vexillari connato ad basin columnae, antheris inaequalibus; leguminibus adpresse glandulari-pubescentibus, cum bracteis persistentibus.

Herbae volubiles, ca 1 m altae, cum pilis adpressis glandularibus, rami orientes ex axillis foliorum. Folia pinnatim trifoliata, ca 13 cm longa (petiolo incluso), foliola 3 - 6 x 1.6 - 5.2 cm, foliola terminalia late ovata, aequilaterialia, acuminata, chartacea, utrimque glandulari-pubescentia; nervi alterni, in 2-3 paribus; stipulae magnae, lanceolatae, 7 mm longae. Inflorescentiae racemosae, axillares vel terminales, fasciculatae, binatae vel ternatae. Flores emergentes cum foliis. Flores ca 7 mm longi cum bracteis persistentibus; bracteae lanceolatae, ca 6 mm longae, utrimque glandulari-pilosae. Pedicellus

ca 4 mm longus. Calyx campanulatus, ca 5 mm longus, tubus dentibus longior, dentes 5-lobati, inaequales, 2 breviores, 3 longiores. Corolla cyaneo-purpurea; vexillum obovatum, 7 mm longum, alae breviter angustae, membranaceae, ca 7 mm longae; carina breviter membranacea, ca 7 mm longa. Stamina diadelphe (9+1), stamen uno vexillare connatum ad basin columnae; antherae inaequales. Carpellum ca 7 mm longum; ovarium minute pilosum, stipitatum, stylus brevis, curvatus, stigma capitatum. Legumina linearia, adpresse glandulari-pilosa, ca 3.0 x 0.3 cm, cum bracteis persistentibus et staminibus. Semina 1 - 4 in legumine, ca 2 mm longa lataque.

Typus: Agunda, Tehri District, Garhwal Himalayas, Uttar Pradesh, 1300 m, 25.9.1993, L.R. Dangwal, 12,363 A, (Holotypus - GUH); Ibid. L.R. Dangwal, 12,363 B (Isotypus-GUH).

***Pueraria garhwalensis* sp. nov.** (Fig. A - J2)

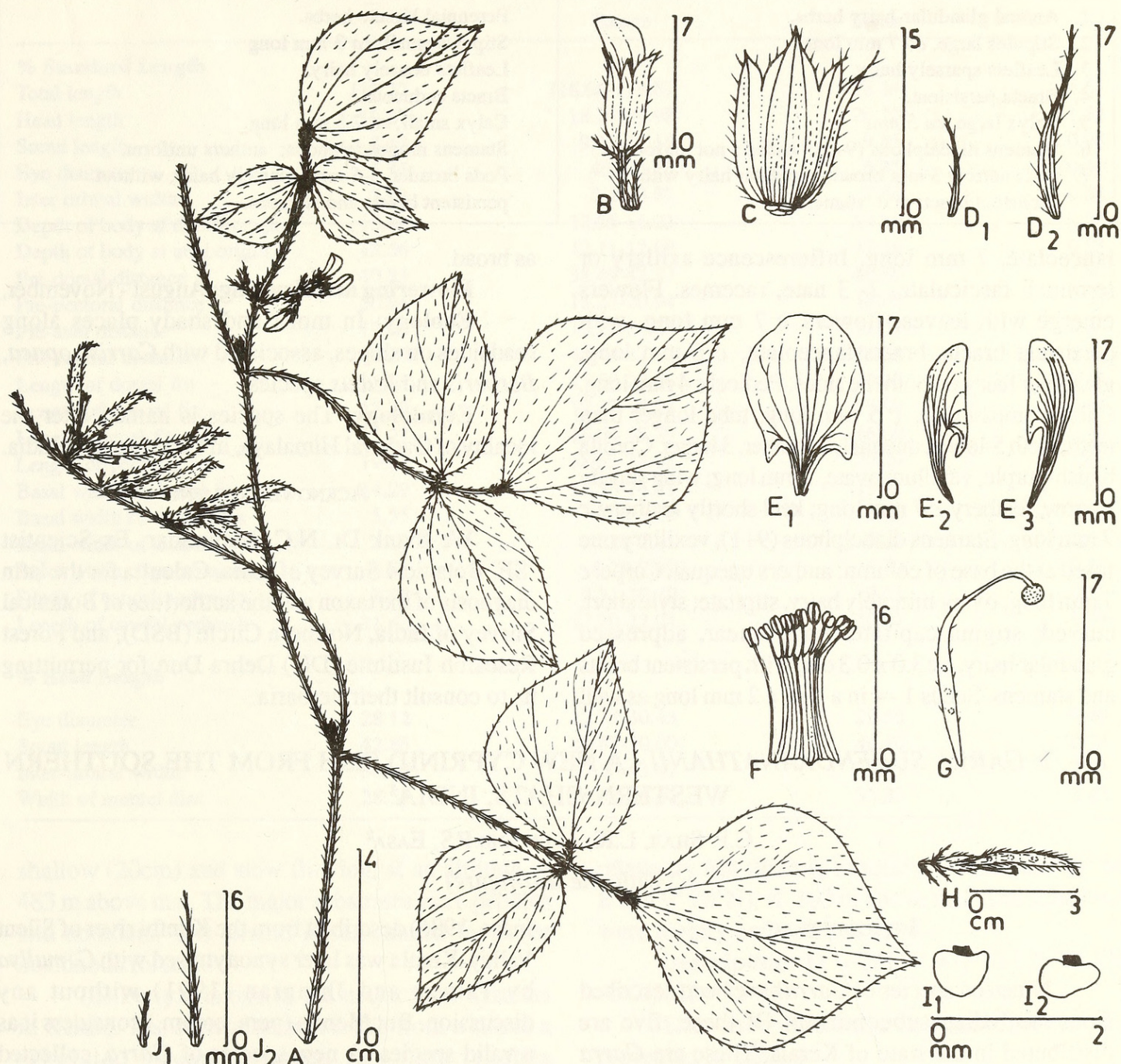
The new species is closely allied to *Pueraria ferruginea* Kurz from which it differs in the following characters.

This taxon is allied to *Pueraria ferruginea* Kurz, however, it differs by its annual habit, leaves having glandular pubescence on both the surfaces; stipules large; calyx lobes unequal, shorter than tube; corolla wing and keel feathery; stamens diadelphous, vexillary one fused at the base of column; anthers unequal; pods glandular-adpressed hairy, with persistent bracts.

Annual, twining herbs, c 1 m tall, with glandular adpressed hairs, branches arising from the axils of the leaves. Leaves pinnately trifoliate, c 13 cm long (including petiole); leaflets 3 - 6 x 1.6 - 5.2 cm, the terminal leaflets broadly ovate, equal sided, acuminate, chartaceous, furnished with glandular hairs on both the sides; nerves alternate, 2 - 3 pairs; stipules large,

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Figs A - J₂ *Pueraria garhwalensis* sp. nov.: A. Flowering and fruiting branch; B. Flower; C. Calyx; D₁ - D₂. Bracts; E₁ - E₂ - E₃. Corolla; F. Stamens; G. Carpel; H. Pod with persistent bracts and stamens; I₁ - I₂. Seeds; J₁ - J₂. Stipules.

KEY FOR THE TWO SPECIES

<i>Pueraria garhwalensis</i> sp. nov.	<i>Pueraria ferruginea</i> Kurz
1. Annual glandular-hairy herbs.	Perennial hirsute herbs.
2. Stipules large, ca 7 mm long.	Stipules small, ca 3 mm long
3. Leaflets sparsely hairy.	Leaflets densely hairy.
4. Bracts persistent.	Bracts caducous.
5. Calyx large, ca 5 mm	Calyx small, ca 2.5 mm long.
6. Stamens diadelphous (9+1); anthers not uniform.	Stamens monadelphous; anthers uniform.
7. Pods narrow 3 mm broad, glandular hairy with persistent bracts and stamens.	Pods broader, 5-6 mm, sparsely hairy, without persistent bracts and stamens.

lanceolate, 7 mm long. Inflorescence axillary or terminal, fasciculate, 2- 3 nate, racemes. Flowers emerge with leaves; flowers c 7 mm long, with persistent bracts; bracts lanceolate, c 6 mm long, glandular hairy on both the sides. Pedicel c 4 mm long. Calyx campanulate, c 5 mm long, tube longer than teeth; teeth 5-lobed, unequal, 2 smaller, 3 larger. Corolla bluish-purple; vexillum ovate, 7 mm long; wing shortly narrow, feathery, c 7 mm long; keel shortly feathery, c 7 mm long. Stamens diadelphous (9+1), vexillary one fused at the base of column; anthers unequal. Carpel c 7 mm long; ovary minutely hairy, stipitate; style short, curved; stigma capitate. Pods linear, adpressed glandular hairy, ca 3.0 x 0.3 cm, with persistent bracts and stamens. Seeds 1 - 4 in a pod, c 2 mm long as well

as broad.

Flowering and Fruiting: August - November.

Ecology: In moist and shady places along roadsides on slopes, associated with *Carrisa opaca*, *Berberis* and *Rubus* species.

Etymology: The species is named after the locality of Garhwal Himalaya, in Uttar Pradesh, India.

ACKNOWLEDGEMENT

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2. *GARRA SURENDRANATHANII* - A NEW CYPRINID FISH FROM THE SOUTHERN WESTERN GHATS, INDIA¹

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(With one text-figure)

INTRODUCTION

Nineteen species of *Garra* have been described from the Indian subcontinent. Of these, five are distributed in the state of Kerala. These are *Garra mullya* (Sykes), *G. gotyla stenorhynchus* (Jerdon), *G. McClellandi* (Jerdon), *G. hughi* Silas and *G. menoni* Remadevi and Indra (Jayaram, 1981; Talwar and Jhingran, 1991). *G. menoni* (Remadevi and

Indra, 1986) described from the Kunthi river of Silent Valley, Kerala was later synonymised with *G. mullya* by Talwar and Jhingran (1991) without any discussion. But Menon (pers. comm.) considers it as a valid species. A new species of *Garra*, collected recently from three river systems of Kerala originating from Western Ghats is described

STUDY AREAS

(i) Chalakkudy river flows through the central portion of Kerala. The collection location of the stream (76° 41' E and 10° 22' N) is narrow (15m),

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