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Research article

Uraria lacei Craib (Fabaceae - Leguminosae): A new addition to the flora of West Bengal, India

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Abstract: *Uraria lacei* Craib is reported from Garpanchkot MPCA, Purulia district, West Bengal for the first time. The detailed taxonomic description, current nomenclature and photographs are provided for easy identification and better understanding of the taxon.
Keywords: New Distributional Record - *Uraria lacei* - Garpanchkot MPCA - West Bengal.

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INTRODUCTION

The genus *Uraria* Desv. (Fabaceae - Papilionoideae-Desmodieae) contains about 20 species that are distributed in Tropical & Subtropical Old World (POWO 2022). In India, the genus has eight to 12 species (Baker 1879, Sanjappa 1992, Gaur 1999, Gogoi & Rana 2020). *Uraria lacei* was first collected by C.B. Clarke on 19 Oct 1885 from Kohima, Nagaland, India. However, it was last recorded in 1952 in India and recently reported after 67 years from Manipur (Gogoi & Rana 2020).

MATERIALS AND METHODS

During November–December 2021, a focused botanical survey was conducted at Garpanchkot MPCA, Purulia district, West Bengal state to collect medicinal plants for the repository of FRLH, Bangalore (Fig. 1). The botanical survey had resulted in the collection of 301 plant taxa, of which one *Uraria* specimen was identified as *Uraria lacei* Craib after through critical study (Lecomte 1920, Haines 1921, Deb 1961, Thuan *et al.* 1987, Sanjappa 1992, Singh *et al.* 2000, Singh *et al*. 2002, Kumar & Sane 2003, Ohashi *et al*. 2006, Puhua *et al.* 2010).The identity of this species has also been confirmed matching with the type material housed at Kew herbarium (Type, K000858899, K000858912, K000858900, K000858898), photo!.Field notes were recorded including habit, habitat and number of individuals in the population, geo-coordinates and elevation data. The specimens were pressed, dried on blotting sheets and processed into herbarium by following standard herbarium procedures (Jain & Rao 1977). Herbarium sheets (digital image) were also consulted from GBIF as well as in various Indian (ASSAM, CAL, DD, E, K, P, US) herbaria. The voucher specimens are deposited at FRLH National Herbarium, Bangalore. The present gathering of this species from Garpanchkot MPCA, Purulia district, was assigned as a new distributional record to the West Bengal state. Detailed description along with Phenology, photographs, updated nomenclature, its distribution and comparative characters was provided for a better understanding of the species.

RESULTS

Taxonomy treatment

Uraria lacei Craib, Bull. Misc. Inform. Kew 1910(8): 276. 1910. *U. paniculata* C. B. Clarke, J. Linn. Soc. Bot.

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25: 15, tab. 4. 1889. nom. illeg. *U. clarkei* Gagnepain in Lecomte, Fl. Gen. Indoch. 2: 542. 1920. *U. pulchra* Haines, Bull. Misc. Inform. Kew 1921 (8): 308. 1921. Type: India. Bihar, Someshwar Hills, H. H. Haines 3962 (ABD!). *U. guangxiensis* W. L. Sha in Guihaia 14: 23. 1994. **[Fig. 2 & 3]**

Type: Myanmar. Maymyo Plateau, 3500 ft, 12 Oct 1908, J.H. Lace 4325 [lectotype, designated by Thuan *et al.* 1987, pg. 112: K! (K000858898); isolectotypes: CAL! E! (E00301323, E00813650)]

Subshrubs, 1.5–2.0 m high. Stems erect, strong, striate, ferruginous hooked hairy and straight hairy, internodes 0.7–3.0 cm long. Leaves trifoliolate and rarely one, 8.5–21.5 × 7.0–17.0 cm long; terminal elliptic to oblong, leaflets 4.0–13.5 × 2.1–7.5 cm, slightly cuneate and obtuse at base, entire-crenulate at margin, acute, mucronate at apex, glaucous, densely brown appressed pubescent and midrib along densely hooked-hairy with sparsely scattered glandular straight-hairy; lateral veins 10–14 pairs; lateral leaflets smaller than terminal elongated ovate-obovate to oblong 5.0–11.0 × 1.5–4.0 cm long, obtuse at base, entire-crenulate at margins, acute, mucronate at apex, glaucous, densely brown appressed pubescent and midrib along densely hooked-hairy with sparsely scattered glandular straight-hairy; lateral veins 9–14 pairs. Petiole terete, 1.5 mm long, scabrous, *ca.* 1 mm long hairs; rachis, *ca.* 2.5 cm long; petioles densely scabrous, *ca.* 4 mm long. Stipules 2, elongated; lower stipules triangular, *ca.* 2 mm long, acuminate at apex, hooked hairy; upper stipules linear-lanceolate, caudate at apex, 8–15 mm long, straight, scabrous hooked-hairy. Inflorescence large and lax panicle terminal and rarely axillary up to 40 cm long, appressed ferruginous-hairy, secondary rachis green, with yellowish-white glandular-hairy and short hooked brown-hairy; pedicels 8–10 mm long, violet-purple, minutely bent towards calyx, with short hooked white hairy. Fruiting calyx valvate, *ca.* 5 mm long, violet-purple; sepals 5, persistent, upper two lobes completely joined together except slightly at the tooth; lower three free at teeth, joined at tube, both lobes almost of equal length, lobes abaxially glandular-hairy. Dry flowers: corolla dark blue or purple; petals 5, standard suborbicular, 1.0–1.5 cm long, with two white spots adaxially towards base; wings dark blue, purple, towards base white, 1.0–1.5 mm long, auricle slightly drooped; keel-petals *ca.* 1.2 cm long, auricle minute. Stamens 10; filament *ca.* 4 mm long; anther basified, ovoid-oblong, *ca.* 0.1 mm long. Ovary slightly twisted or coiled, *ca.* 5.5 mm long; style flat, *ca.* 5 mm long, bend. Pods coiled, 4–8 or 6–8, article, 8–12 mm long, green to brownish, exsertedwith long glandular-hairy with minute e-glandular hooked-hairy; seeds ovoid, sub-angular, pale yellowish, *ca.* 0.3 mm long, shiny.

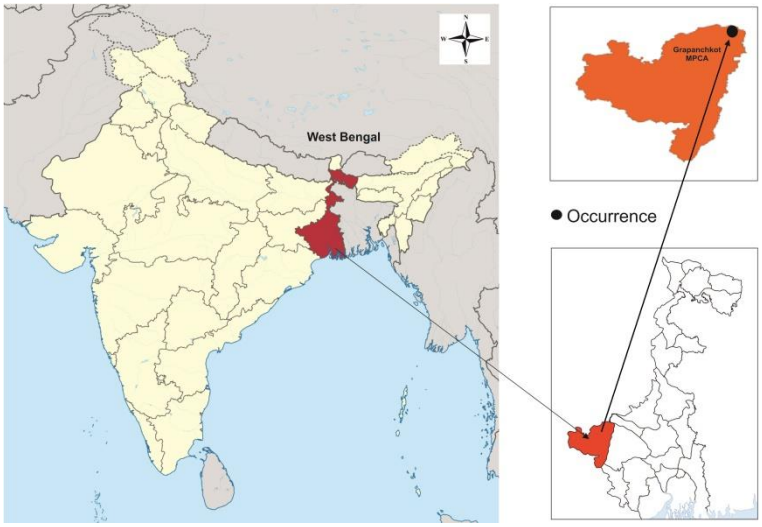

Figure 1. Map of West Bengal, Purulia, Garpanchkot MPCA showing the locality where *Uraria lacei* Craib was reported.

Flowering & Fruiting: September to November.

Ecology: Found in deciduous forest and hills slope growing with *Andrographis paniculata* (Burm.f.) Nees, *Ayenia herbacea* (Roxb.) ined. *Blumea* spp., *Cleistanthus collinus* (Roxb.) Benth. ex Hook. f., *Crotalaria albida* B. Heyne ex Roth, *Desmodium velutinum* (Willd.) DC., *Helicteres isora* L., *Holarrhena pubescens* Wall. ex G. Don, and *Terminalia anogeissiana* Gere & Boatwr.

Distribution: India (Bihar, Nagaland, West Bengal) China, Laos, Myanmar, Thailand and Vietnam.

Specimens examined: INDIA, West Bengal, Garpanchkot MPCA, Purulia district, 192.4 m, N23° 38' 25.2" E86° 45' 21.6", 24.11.2021, *N. Dhatchanamoorthy & D. Saha124856* (FRLH); Nagaland, Kohima, 3000 ft, 19.10.1885, *C. B. Clarke 40924* and *S.N. Bal 513* (CAL); Assam, Naga Hills, 1935, *N. L. Bor 32* (DD); Manipur, Laimatak, 3–4000 ft, Nov 1907, *A. Meebold 6245* (CAL); Myring Naga Hills, 5000 ft, Dec. 1907,

A. Meebold 9263 (CAL); Litan, 3000 ft, 12.11.1944, *N.L. Bor 18132* (CAL). CHINA, Yunnan, No locality, No altitude, 1897, *A. Henry 9144*, (CAL); *A. Henry 9144* (US-02055943, 02055944); Puerh No locality, 1372m, 1901 *A Henry 9144* (K000858912); Yunnan, No locality, *J. Rock 6615*, (US 1213932). Myanmar, Maymo Plateau, 1067m, 12.10.1908 *J.H.Lace 4325* (K000858898, E00301323); Maymyo Plateau, 3500 ft, 31.10.1911, *J.H. Lace 5512* (DD, E00899264); Maymyo plateau, 3500 ft, 5.10.1912, *J.H. Lace* 4325/ 5512? (E00899265). Vietnam. Plateau de kiendi, dans les paturges, 7.10.1891, *B. Balansa 4430* (P02142551); N. du Tonkin, 900 m, 31.12.1937, *M. Poilane 26958* (P02996196, P03089173).

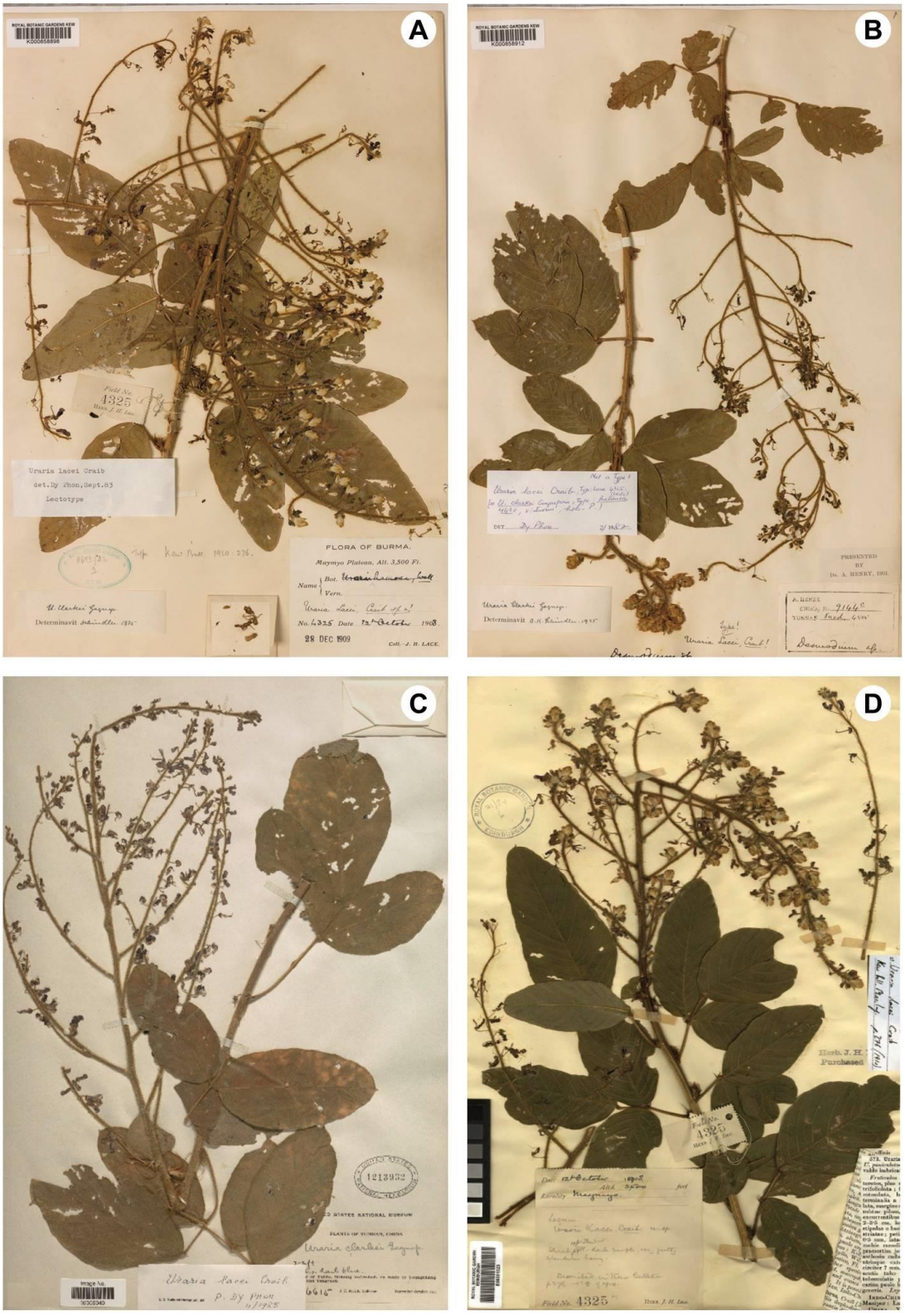

Figure 2. The specimen of *Uraria lacei* Craib: **A**, K000858898; **B**, K000858912; **C**, US 1213932; **D**, E00301323. [@ Royal Botanic Gardens, Kew, National Herbarium, Department of Botany, NMNH, Smithsonian Institution, Royal Botanic Garden Edinburgh]

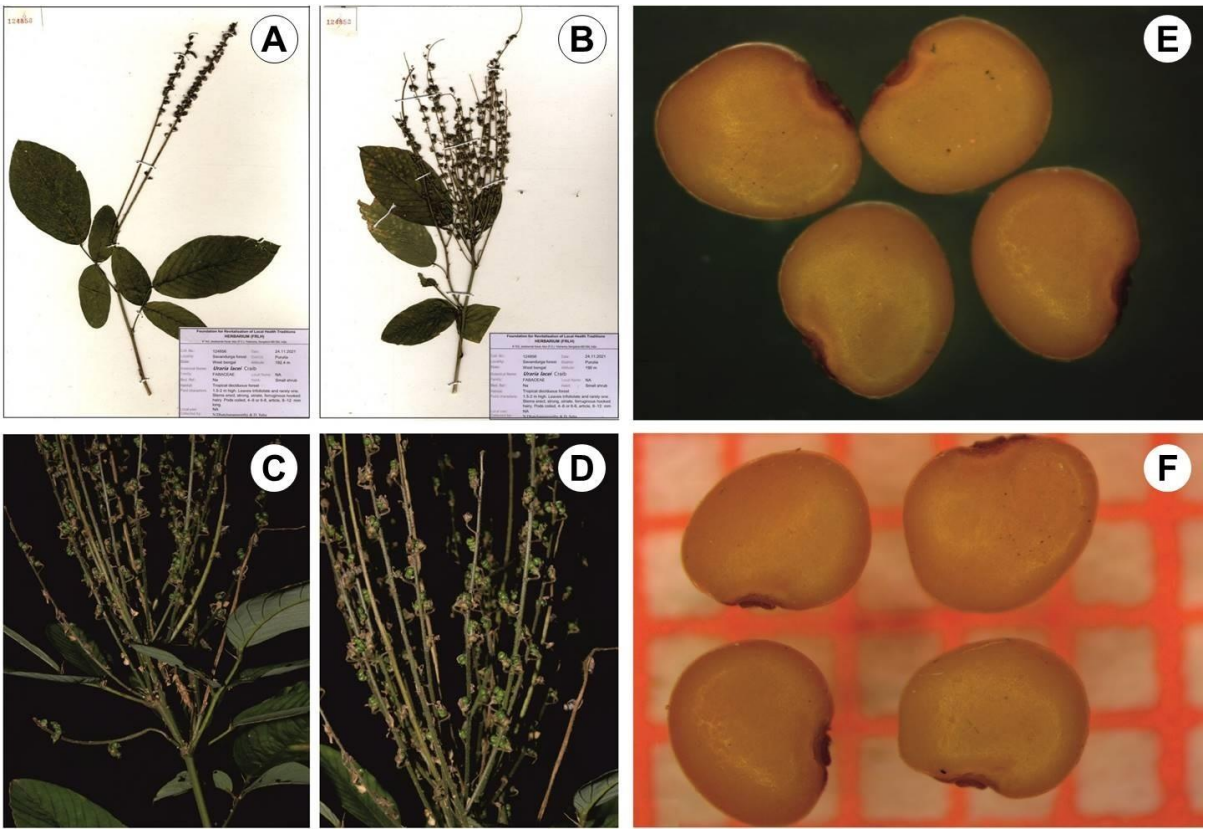

Figure 3. Voucher specimens of *Uraria lacei* Craib: **A & B, C** Twig with inflorescence; **D** close up of Inflorescence; **E** & **F**, close up of seeds.

CONCLUSION

Through perusal of literature and consultation with India and world online herbarium (ASSAM, CAL, DD, E, K, P, US) it was observed that *Uraria lacei* Craib, this species has been recorded for the first time from Garpanchkot MPCA, Purulia district in West Bengal. This clearly reveals, this species is rare to the flora of West Bengal and even to the flora of India. The field observation revealed that the less population had about 3 individual plants within 3 km distance area on the slope of a small hill at Garpanchkot MPCA (Medicinal Plants Conservation Area). Most of the plants were in the fruiting condition of *Uraria* sp. and *Desmodium* spp. The soil was sliding due to clearance for way and mostly consisted of small pieces of rocks and stone. *Uraria lacei* is assessed as 'Data deficient' (DD) category according to the IUCN Red List criteria (IUCN 2019). There was only a small population found in deciduous forest with hills slop of about three individuals. The habitat is disturbed heavily by anthropogenic and agricultural activities. The species might be reassessed as per the IUCN guidelines based on extensive explorations of the species in similar locations which may throw more light on the threat status could help for conservation this very rare species.

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REFERENCES

Baker JG (1879) *Leguminosae.* In: Hooker JD (ed) *The flora of British India*. London: L. Reeve & Co. 2: 155–157.

Clarke CB (1889) On the plants of Kohima & Muneypore. *Journal of the Linnean Society, Botany* 25: 15–16.

Craib WG (1910) *Decades Kewenses*. Bulletin of Miscellaneous Information 276 p.

Deb DB (1961) *Dicotyledonous plants of Manipur territory*. Bulletin of the Botanical Survey of India 3: 271.

Gaur RD (1999) *Flora of the District Garhwal North West Himalaya* (*with ethnobotanical notes*). Transmedia Srinagar (Garhwal), U.P., India, pp. 298–299.

Haines HH (1921) *Decades Kewenses*. Bulletin of miscellaneous information, Kew 1921(8): 308–309.

Gogoi J & Rana TS (2020) The rediscovery of *Uraria lacei* Craib (Leguminosae) after 67 years from India. *PhytoKeys*: 160: 99–107.

IUCN [Standards and Petitions Committee] (2019) Guidelines for Using the IUCN Red List Categories and Criteria.Version 14. Prepared by the Standards and Petitions Committee. Available from: http://www.iucnredlist.org/documents/RedListGuidelines.pdf (accessed: 03 Apr. 2022)

Jain SK & Rao RR (1977) *A Handbook of Field and Herbarium Methods*. Today & Tommorrow's Printer & Publishers, New Delhi.

Kumar S & Sane PV (2003) *Legumes of South Asia* (A Check-list). Royal Botanic Gardens Kew, 218 p.

Lecomte MH (1920) *Flora Generale de l'Indo-Chine*, Paris 2: 542.

Ohashi H, Iokawa Y& DyPhon P (2006) *The Genus Uraria* (Leguminosae) *in China*. Shokubutsu Kenkyu Zasshi 81(6): 332–361.

POWO (2022) *Plants of the World Online*. Facilitated by the Royal Botanic Gardens, Kew, Available from: http://www.plantsoftheworldonline.org/ (accessed: 03 Apr.2022).

Puhua H, Ohashi H & Iokawa Y (2010) *Flora of China* 10: 287. Available from: http://www.efloras.org/florataxon.aspx?flora_id=2&taxon_id=242353446 (accessed 4 April 2022).

Sanjappa M (1992) *Legumes of India*. Bishen Singh Mahendra Pal Singh, Dehradun, pp. 269.

Singh NP, Chauhan AS & Mondal MS (2000) *Flora of Manipur*. Botanical Survey of India, Calcutta 1: 319.

Singh NP, Singh KP & Singh DK (2002) *Flora of Mizoram*. Botanical Survey of India, Kolkata 1:501.

Thuan NV, Dy Phon P, Niyomdham C (1987) *Legumineuses- Papilionoidees*. *Flore du Cambodge, du Laos et du Vietnam*. Museum National d'Histoire Naturelle, Paris 23: 110–112.