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Cover: Parts of *Vachellia nilotica*, medium - watercolours. © P Kritika

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SHORT COMMUNICATION

New distribution record of *Hydrocotyle bonariensis* Lam. (Magnoliopsida: Apiales: Araliaceae) from India

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Abstract: A floristic survey conducted in July 2024 in Aizawl district of Mizoram, led to the collection of unidentified species of *Hydrocotyle*. Detailed morphological examination, comparison with taxonomic literature and consultation of herbarium specimens confirmed its identity as *Hydrocotyle bonariensis* Lam. This is first specimen based, taxonomically confirmed record of *H. bonariensis* from India. This species is a perennial prostate herb widely distributed throughout the tropical and sub-tropical regions. It is well adapted to sandy, moist habitats including coastal dunes, estuaries, and ponds. Herbarium specimens were prepared following standard taxonomic procedures and submitted at the Botanical Survey of India, Eastern Regional Centre, Shillong. Morphological characters, habitat and specimen details are provided to facilitate accurate identification. This discovery highlights the floristic richness of northeast India and reinforces the importance of systematic botanical surveys in underexplored habitats.

Keywords: Aizawl, botanical exploration, conservation, habitat, *Hydrocotyle bonariensis,* Mizoram, protologue, taxonomy.

The genus *Hydrocotyle*, commonly known as pennywort, belongs to the family Araliaceae and was first described by Carl Linnaeus in his Species Plantarum (1753). The name '*Hydrocotyle*' is derived from the Greek words 'hydro' meaning 'water' and 'kotyle', meaning 'dish or plate', referring to the species' aquatic habitat and dish-shaped leaf (Bandara et al. 2011). *Hydrocotyle* is a widespread genus characterized by a rhizomatous perennial creeping growth form with many species occurring in aquatic or moist terrestrial habitats. Currently, the genus comprised of 182 accepted species globally and is widely distributed in Africa, America, Australia, southeastern Asia and some parts of the European Continent (IPNI 2026; POWO 2026). The taxonomic treatment of *Hydrocotyle* in India has undergone several revisions over time. C.B. Clarke (1879) recognized six taxa from India, namely *Hydrocotyle javanica* Thunb., *H. javanica* var. *podantha* Molkenboer, *H. burmanica* Kurz, *H. conferta* Wight, *H. rotundifolia* Roxb., and *H. asiatica* L. Subsequently, Karthikeyan et al. (2009) reported eight species occurring in India: *Hydrocotyle conferta* Wight, *H. hookeri* (C.B. Clarke) Craib, *H. javanica* Thunb., *H. nepalensis* Hook., *H. podantha* Molk., *H. ramiflora* Maxim., *H. siamica* Craib, and *H. sibthorpioides* Lam. Mukherjee et al. (2020) recognized nine species, namely *Hydrocotyle conferta* Wight, *H. himalaica* P.K. Mukh., *H. hookeri* (C.B. Clarke) Craib, *H. javanica* Thunb., *H. kollimalayensis* S. Karup. & A. Ali, *H. ramiflora* Maxim., *H. siamica* Craib, *H. sibthorpioides* Lam., and *H. verticillata* Thunb. *H. sibthorpioides* has maximum 10 cm high, simple and peltate leaves, umbels inflorescence, flat fruit which breaks into two halves during maturity, faint yellow flower with a purple hinge

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(Hazarika et al. 2021). *H. kollimalayensis* has simple and pale green leaves, slender petiole with 2-4 cm long, simple umbel inflorescence, ellipsoid fruit and sub-sessile or very shortly pedicillate flower (Karuppusamy et al. 2014). *H. verticillata* has 3.6 -7 cm length per stolon, simple alternate leaves, smooth green petiole with 8 -14.5 cm, axillary inflorescence with 5.3 - 19 cm long, sub orbicular fruit and small, white, bracteate flowers (Roy & Roy 2024). *H. bonariensis* is a semiaquatic perennial herb with long stolons (runners), from which roots, leaves and inflorescences are produced at nodes The species name *bonariensis* was derived from Buenos Aires, Argentina, where the plant is native and was first identified (Mazumdar et al. 2023). This species typically grows in sandy, moist habitats such as coastal dunes, estuaries, disturbed foreshore sites, ponds and even environments with periodic flooding.

A number of species of this genus are traditionally valued for wound-healing, improving blood circulation, and have effects on lowering blood pressure, tumour reduction and management of depression (Goh 2007). *Hydrocotyle* species contain oleanane-type triterpenes (Barrigenol derivatives) which are recognized for antioxidant, anticancer and anti-inflammatory

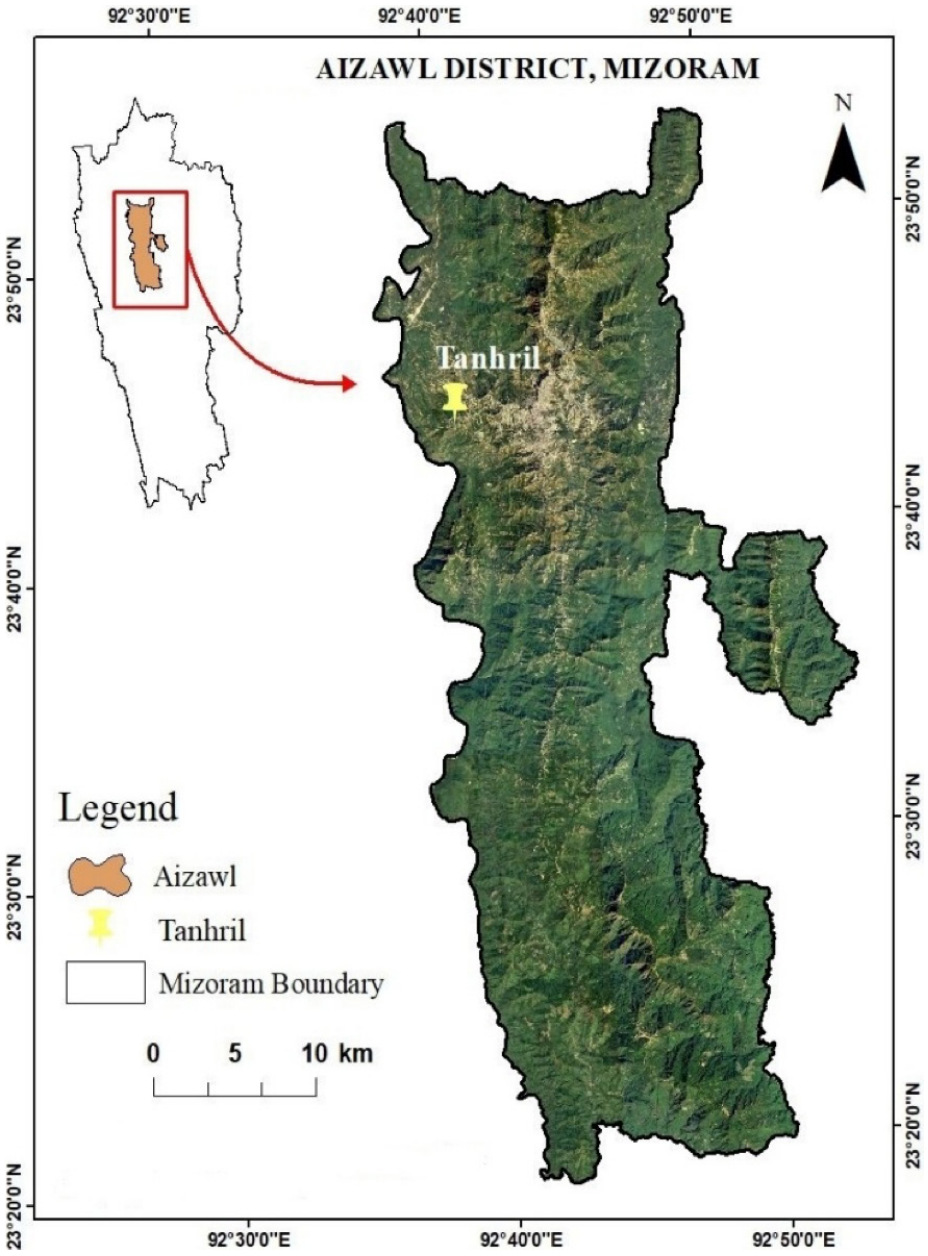

Image 1. The site of collection.

properties (Maulidiani et al. 2014). They are utilized as anti-inflammatory herbs in Taiwanese traditional medicine (Hamdy et al. 2018).

A floristic survey conducted in Tanhril, Aizawl District, Mizoram, in July 2024, one of the authors (Balasiewdor Kharsyntiew) collected an unidentified *Hydrocotyle* specimen. Detailed examination of the specimen, comparison with relevant taxonomic literature (Clarke 1879; Kanjilal et al. 1938; Mukherjee & Constanne, 1993; Singh 2002; Karthikeyan et al. 2009; Mukherjee et al. 2020) and herbarium consultation physically and digitally at ASSAM, CAL and KEW confirmed its identity as *Hydrocotyle bonariensis* Lam., representing the first specimen-based record of the species from India. Although data from the Global Biodiversity Information Facility (GBIF) indicate 16 records of *H. bonariensis* from six localities in southern part of India. However, all of these records are based solely on human observations with no specimen-based records are available in GBIF. Mazumdar et al. (2023) mentioned occurrence of *H. bonariensis* in Asian countries China, Sri Lanka, Indonesia and Malaysia including India, but this review does not provide any reference of published records to verify the presence of this species in India.

Materials and Methods

The plants were collected from Tanhril, Aizawl District of Mizoram, 23.745° N and 92.668° E. A herbarium was prepared and submitted to Botanical Survey of India, Eastern Regional Centre, Shillong (ASSAM). The fresh flowers were also submitted as per proper identification. The flowers were dissected, and detailed morphological study as taxonomic measurements and descriptions of each plant part of the living plant materials was carried out using a stereomicroscope, Magnus MSZ-TR 16G1101. To confirm its distribution, relevant publications and floras were critically studied and compared with related taxonomic literature (Clarke 1879; Kanjilal et al. 1938; Mukherjee & Constanne 1993; Singh, 2002; Karthikeyan et al. 2009; Mukherjee et al. 2020). Further examination of the protologue and a search for type material were conducted in various herbaria, including herbarium specimens housed at the Botanical Survey of India, Eastern Regional Centre, Shillong (ASSAM), and the Central National Herbarium, Howrah (CAL). Collection, pressing and preparation of herbarium voucher specimens were done in accordance with conventional herbarium techniques (Jain & Rao 1976). A voucher specimen of the plant was deposited in the Herbarium of the Botanical Survey of India, Eastern Regional Centre, Shillong (ASSAM).

Taxonomic Treatments

Hydrocotyle bonariensis Lam., Encycl. 3(1): 153. 1789.

Synonyms: *Hydrocotyle petiolaris* DC. in Prodr. 4: 60. 1830.

Herb, 15–40 cm high, creeping, with slender stems, glabrous, rooting at the nodes; stolons pinkish white, cylindrical. Leaves simple, peltate (very rarely with a deep narrow sinus extending to the petiole); petiole 13–21 cm long, terete, glabrous; lamina 2.5–2.8 × 2.5–4.2 cm orbicular, margin often shallowly lobed, the lobes with small secondary crenulations, or sometimes semi-serrate, glabrous beneath, with 12–20 veins radiating from the petiole. Inflorescence arises from stolons, compound umbel; umbel rays 5–7; peduncle up to 32 cm long; flowers bisexual, up to 38 per umbel, white in colour; pedicels 1–20 mm long, slender. Tepals 5, ovate, white; bract ovate, white, papery. Anthers 5 in number; style 2, c. 1 mm long. Fruit laterally flattened.

Flowering & fruiting: May–August

Specimen examined: MZU/HAMP/24/05, 23.745° N 92.668° E, 782 m altitude, Aizawl District, Tanhril, Mizoram, India, coll. Balasiewdor Kharsyntiew.

Distribution: China, India, Sri Lanka, Indonesia, Malaysia, southeastern part of the United States, central America, South America, the Caribbean and sub-Saharan Africa.

Conclusion

This study reports the first record of Hydrocotyle bonariensis Lam. from India, enriching the country's floristic diversity database and listing the distribution of this species in a new geographical region. The finding highlights the importance of continued botanical exploration and taxonomic research, particularly in the under-explored ecosystems of northeast India, where substantial plant diversity remains inadequately documented. It also demonstrates that systematic field surveys in biodiversity-rich regions continue to reveal unrecorded taxa. Continued floristic documentation is therefore essential for monitoring biodiversity, guiding sustainable ecosystem management, and informing conservation initiatives in the face of increasing anthropogenic and climate-driven environmental changes.

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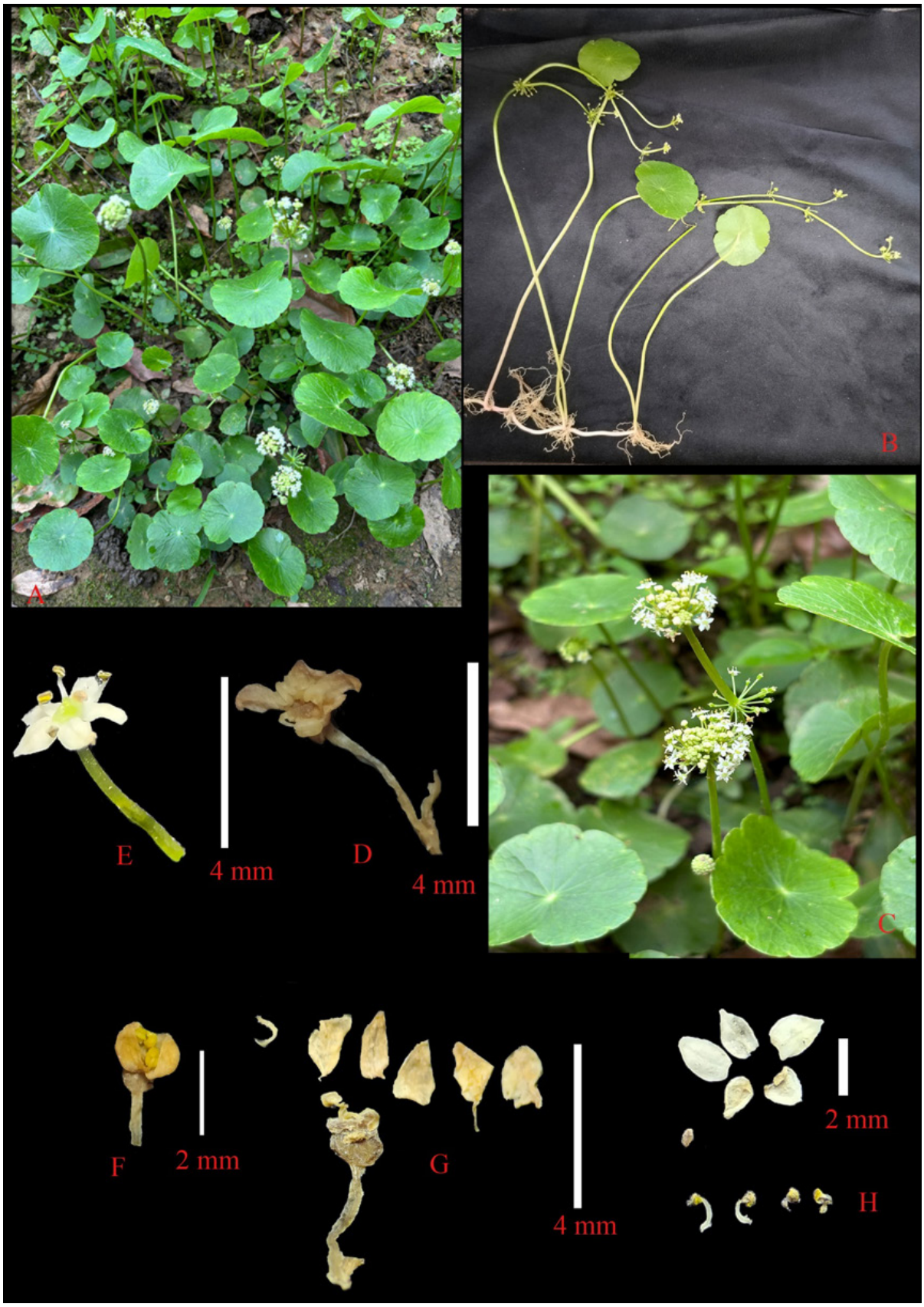

Image 2. ***Hydrocotyle bonariensis*****: A—habitat | B—habit | C—inflorescence | D—single flower from herbarium | E—single fresh flower | F—flower bud | G—lower parts from herbarium | H—petals & stamens. © Vijay.**

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