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10.11609/jott.2026.18.2.28262-28454  
[www.threatenedtaxa.org](http://www.threatenedtaxa.org)

26 February 2026 (Online & Print)  
18(2): 28262-28454  
ISSN 0974-7907 (Online)  
ISSN 0974-7893 (Print)



ISSN 0974-7907 (Online); ISSN 0974-7893 (Print)

Publisher  
**Wildlife Information Liaison Development Society**  
www.wild.zooreach.org

Host  
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www.zooreach.org

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Cover: Digital illustration of *Impatiens chamchumroonii* in Krita by Dupati Poojitha.



## Extended distribution of *Nymphoides peltata* (S.G.Gmel.) Kuntze (Menyanthaceae) in Manipur, India

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**Abstract:** The present paper highlights the extended distribution of aquatic herb *Nymphoides peltata* (S.G.Gmel.) Kuntze and presents as a new addition to the flora of Manipur. This study also provides phenology, conservation status, and distribution of the recorded species.

**Keywords:** Aquatic herb, dimorphic leaves, invasive, new addition, perennial, Phayeng, phenology, rhizomatous herb.

**Editor:** Afroz Alam, Banasthali Vidyapith, Rajasthan, India.

**Date of publication:** 26 February 2026 (online & print)

**Citation:** Waikhom, A.C. & B.S. Sadokpam (2026). Extended distribution of *Nymphoides peltata* (S.G.Gmel.) Kuntze (Menyanthaceae) in Manipur, India. *Journal of Threatened Taxa* 18(2): 28413–28418. <https://doi.org/10.11609/jott.10056.18.2.28413-28418>

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**Funding:** None.

**Competing interests:** The authors declare no competing interests.

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**Author contributions:** BSS—carried out field survey, manuscript drafting; ACW—carried out field survey, editing, conceptualization, revision and finalization of the manuscript.

**Acknowledgements:** The authors are grateful and express heartfelt gratitude to the head, Department of Life Sciences (Botany), School of Life Sciences, Manipur University, Canchipur for providing the necessary facilities for carrying out the present study. Lastly, we also would like to thank the villagers of Phayeng for their coordination rendering their help and support during the field survey.



## INTRODUCTION

*Nymphoides* Ség., is a genus of truly freshwater aquatic dicot growing as a monospecific stand in the still water of ponds, lakes, and rivers, eutrophic, alkaline water (Ornduff 1966; van der Velde et al. 1979; Burks 2002; Mehrvarz & Nodehi 2016). It produces aerial flowers on stems and also has distinctive floating leaves. It is an aquatic genus comprising of 30–35 species (Cook et al. 1974), 40 species (Ho et al. 1995), and 50 species have been recorded so far across the globe (Tippery et al. 2008). Under the genus *Nymphoides*, 13 species and eight species been recorded from eastern Asia (Tippery et al. 2021), and India (Sivarajan & Joseph 1993), respectively. Till date, a total of 10 species have been reported so far from India: *Nymphoides peltata* (S.G.Gmel.) Kuntze, *N. aurantica* (Dalzell) (Kuntze), *N. parviflora* (Wall. ex G.Don) Tippery, *N. sivarajanii* K.T.Joseph, *N. indica* (L.) Kuntze, *N. macrosperma* K.V.Nair, *N. krishnakesara* K.T.Joseph & Sivar., *N. hydrophyllum* (Lour.) Kuntze, *N. balakrishnani* P.Biju, Josekutty, Haneef & Augustine, *N. palyi* P.Biju, Josekutty, Haneef & Augustine (Sivarajan & Joseph 1993; Biju et al. 2016a,b; Tippery et al. 2021).

Most *Nymphoides* species occur in the tropical parts of the world (Wood 1983), but unlike other species, *N. peltata* is the only species occurring in moderately cold temperate areas (Meusal et al. 1978) and its distribution is restricted to temperate parts of Europe, Asia, and America. *Nymphoides peltata* is distributed in Europe (except the North), temperate regions of Asia, and also become naturalized in North America (Tutin 1972; Stuckey 1973; Smits et al. 1992). *Nymphoides peltata* is native to Eurasia but an invasive plant in the USA (Tippery et al. 2023). In India, *N. peltata* has been recorded from western Himalaya and Kashmir so far and it is well known for its distribution from India (Sivarajan & Joseph 1993). From Manipur, a total of two species under the genus *Nymphoides* have been reported, viz., *N. hydrophyllum* (Lour.) Kuntze and *N. indica* (L.) Kuntze (Agrawala et al. 2023) and the presently examined *Nymphoides peltata* is in addition to the flora of Manipur as the third species.

## MATERIALS AND METHODS

### Description of study site

Manipur is a part of the eastern Himalaya, lies in between 23.830–25.680 °N and 93.030–94.780 °E. Manipur separates India from Myanmar, which is a part of the northeastern corner of India. The state has a total geographical area of 22,327 km<sup>2</sup>. Manipur is a hilly

state having two major regions as central valley and hilly region covering an area of about 10% and 90% of the total area, respectively.

Phayeng, the study site is located at 24.841 °N & 93.808 °E, Imphal West District, Manipur (Figure 1). This place is 14 km from Imphal, the capital of Manipur, at an altitude ranging 790–870 m. People of Phayeng were the aboriginal inhabitants of Manipur before the arrival of Meiteis and representing one of the indigenous people of Manipur (Parratt 1980). Forest of Phayeng is the largest sacred grove of Manipur, rich in biodiversity and a carbon neutral village, recognized as India's first carbon-positive settlement.

A brief field trip was carried out in Heiyu Park of Phayeng Village (Figure 1) of Manipur during 2024–2025. Herbarium specimens were prepared and mounted on a standard herbarium sheet following the standard procedure of Jain & Rao (1976). The prepared voucher specimens were deposited in Manipur University Museum of Plants (MUMP) and Botanical Survey of India (BSI), Eastern Regional Centre (Assam). Identification of the specimen was done by consulting relevant existing literature and databases (Nasir & Ali 1970–1995; Ho et al. 1995; POWO 2025; WFO 2025). Phenology, distribution along with conservation status were also provided briefly. Photographs of habits and dissected parts were captured from live specimens using SMZ160 Stereo Zoom Microscope and Sony Cyber-Shot DSC–HX10V.

## RESULTS

### Taxonomic Treatment

*Nymphoides peltata* (S.G.Gmel.) Kuntze, Revis. Gen. Pl. 2: 429. 1891; Ohwi, Fl. Jap. 742. 1965; Tutin in Tutin et al., Fl. Europ. 3: 68. 1972; Sivarajan & Joseph, Aquatic Bot. 45: 149. 1993; Ho & Ornduff, Fl. China 16: 141. 1995. (Menyanthaceae).

**Description:** Perennial aquatic rhizomatous herb; stem long, cylindrical, submerged, sometimes rooting from nodes; leaves dimorphic, floating, vegetative leaves alternate, ovate–orbicular, apex rounded, base deeply cordate, margin sinuate to entire, adaxially green, abaxially brownish red and glandular, 3–14 × 2–12 cm; petiole 30–280 cm; fertile leaves similar to vegetative leaves but smaller and subopposite or opposite, sheathing at base; petiole 5–10 cm; flowers clustered at node, 2–7 flowers in umbellate cluster, arising from axil, bisexual, distylous, pedicel 6.8–7 cm; sepals deeply 4–5 partite, elliptical–lanceolate, apex obtuse, abaxially purple

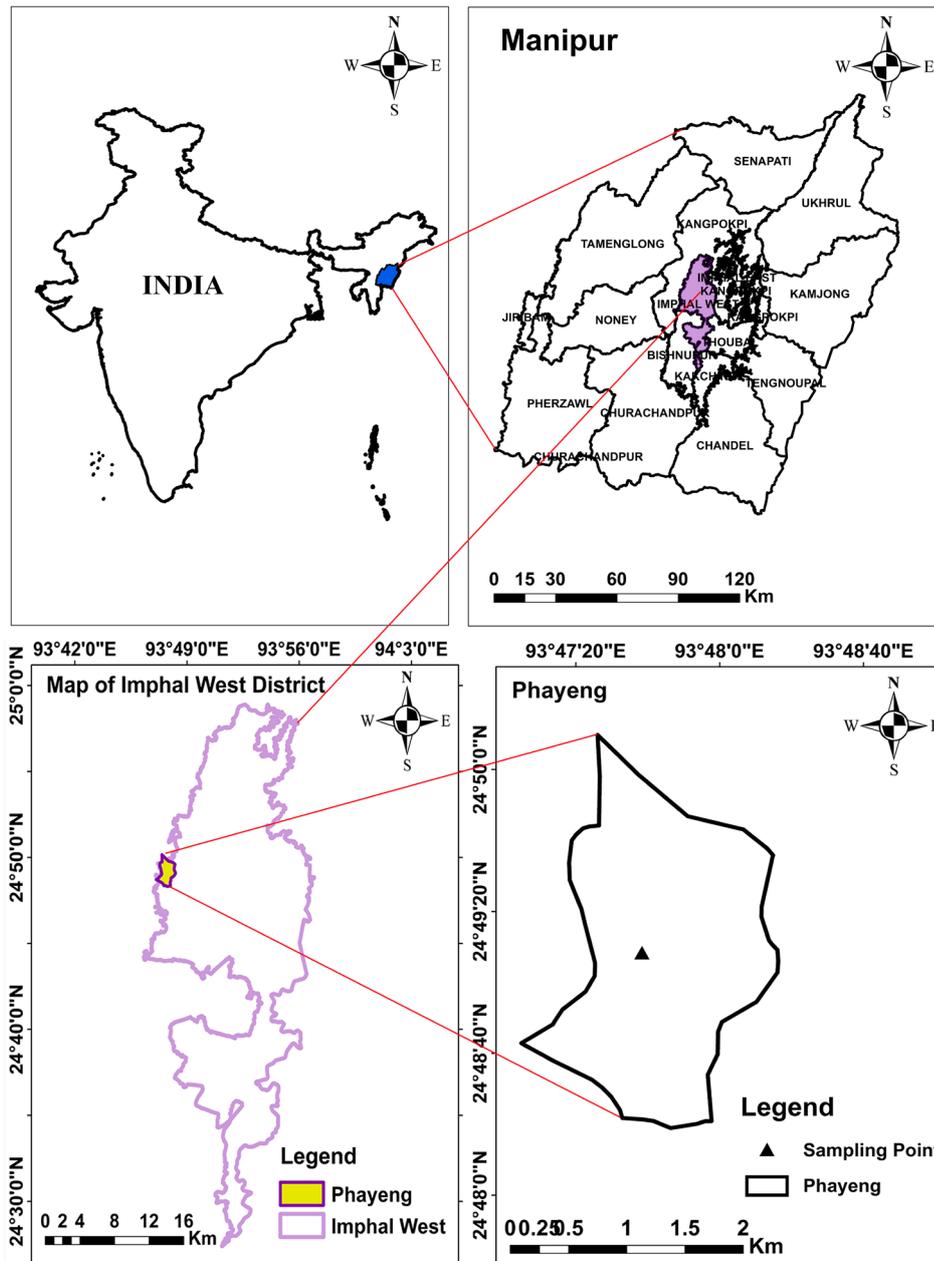


Figure 1. Geographical location of *Nymphoides peltata* (S.G.Gmel.) Kuntze (Menyanthaceae) in Manipur, India.

punctate, adaxially greenish, glabrous, 1.1–1.2 × 0.25–0.3 cm; petals as many as sepals, yellow, 2.7–2.8 × 1.4–1.5 cm, tube 0.6–0.7 cm long, whitish with tuft of hair at the middle, lobes 2.1 cm long, ovate, margins with broadly membranous and fimbriately toothed wings; stamens as many as corolla lobes, filaments 0.6–0.7 cm, inserted at the intersection of the lobes, anther bilobed, sagittate, basifixed, 0.4 cm long; pistil bottle-shaped, 1.6 cm long, style 0.9–1.0 cm, stigma bifid, folded irregularly at margins, ovary 0.4 × 0.3 cm, glandular, glands yellow, as many as petals, parietal placentation; capsule and

seed not known.

**Flowering & Fruiting:** May–October

**Distribution:** Algeria, China, Ghana, India (Western Himalaya, Kashmir, now in Manipur), Iran, Japan, Mongolia.

**Specimen examined:** India: Manipur, Imphal West District, Phayeng Village, Aahen Chanu Waikhom, 1.v.2025, 24.843 °N & 93.811 °E, altitude ca. 827 m, coll. No. 001.

**Conservation Status:** Least Concern (Lansdown 2014), Critically Endangered (de Bélaïr 2010).

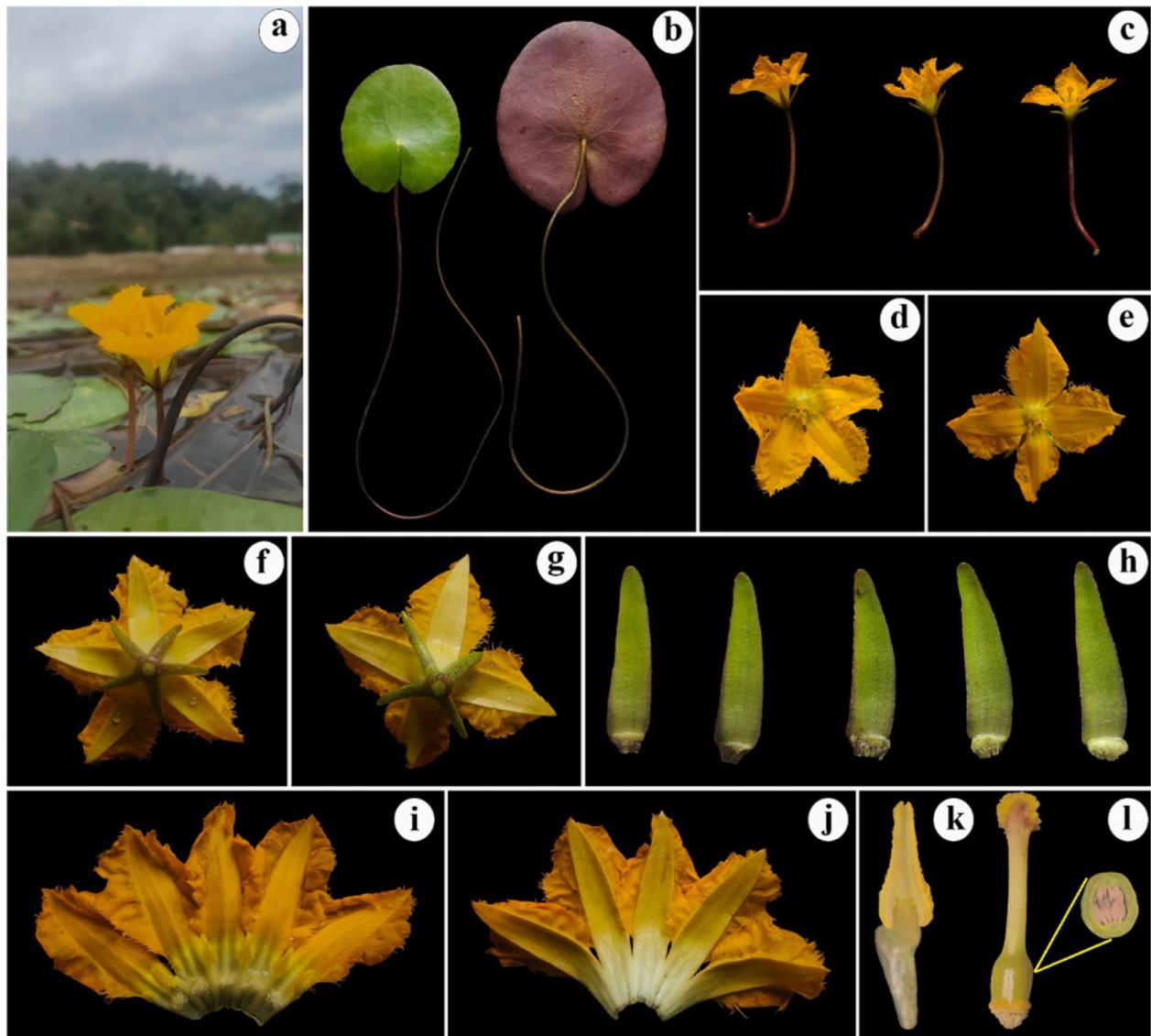


Image 1. *Nymphoides peltata* (S.G.Gmel.) Kuntze: a—Aquatic habit | b—adaxial and abaxial leaves | c—single flower | d & e—five and four petaled ventral view of flower respectively | f & g—five and four petaled dorsal view of flower, respectively | h—sepals | i—ventral view of corolla | j—dorsal view of corolla | k—anther | l—pistil along with T.S. of ovary. © Aahen Chanu Waikhom.

## DISCUSSION

*Nymphoides peltata* possesses invasive nature; very difficult to control for having the potential to grow a new plant from rhizomes, stolons, detached leaves or seeds (Cook 1990). In 12 weeks, a single plant of *N. peltata* can produce over 100 new plants (Zhonghua et al. 2007). It has been declared as an invasive species in Sweden (NOBANIS 2005) and noxious weed in New Zealand and parts of North America (NWCB 2007). It is also known as yellow floating heart and fringed water lily which is a perennial hydrophyte of the Menyanthaceae family (Cheek 2018). It is also cultivated as an ornamental

plant in garden pools and aquaria (Allgayer & Teton 1987; Chester et al. 1996). *Nymphoides peltata* has the characteristic of a pioneer plant community which can colonise large areas through vegetative growth in a season (Brock et al. 1983). Bioactive compounds like 3,4,5-tri-O-caffeoylquinic acid (TCQA) isolated from the roots of *N. peltata* exhibit antioxidant and anti-wrinkling effects (Kim et al. 2023a). In India, the plant is used as a diuretic, anthelmintic, and antipyretic agent (Zhigzhitzhapova et al. 2021). Coumarin glycoside and iridoid glycosides derivatives isolated from the methanolic root extract of *N. peltata* shows the effect of wound healing (Kim et al. 2024).

## CONCLUSION

*Nymphoides peltata* is native to some regions and has been introduced to other regions either accidentally or intentionally. It has been introduced to some part of the world like Sweden as an ornamental plant because of its beautiful yellow flower, even though it is native to regions like China and Japan to western Asia and central Europe (Weldon 2024). It is an invasive plant in the USA which is recognised as a noxious weed (Tippery et al. 2023). It can also form the dense stand like a mat, thus decreasing the water quality and reducing dissolved oxygen, thereby affecting the other associated species as well as in navigation and fishing (NatureServe 2008). *Nymphoides peltata* grows primarily in ponds, lakes producing both vegetative and reproductive propagules extensively in the easiest way. Introduction of this species in the present study site is not well known to the local people. *Nymphoides peltata* is invasive, posing serious threats to surrounding environments. This species produces profuse leaves covering almost the entire water surface, blocking sunlight, which creates a risk to other submerged aquatic plants and animals. Once introduced and naturalised in a particular habitat, the eradication of this plant is not an easy task. Community-based measures should be taken up so as not to disperse propagules to other habitats which might impose threats to other species.

Phytochemicals of *N. peltata* have been reported to be used as an ayurvedic medicine and in traditional Chinese medicine as a diuretic, antipyretic, or chloretic and to treat ulcers, snakebites, and edema. Moreover, it also has anti-inflammatory, anti-tumor, and anti-wrinkle properties (Kim et al. 2023b). Even though it has the ability to be invasive, it still has good phytochemical properties which can cure many diseases, so it can provide significant economic benefit not only for selling as an ornamental plant. People should be more practical in managing this plant in aquatic water bodies. Thus, we should be more aware of this species as a noxious weed or as a plant which have medicinal properties. We should explore more ethnobotanical aspects of *N. peltata*

## REFERENCES

- Agrawala, D.K., R. Gogoi, S.S. Dash, J.S., Jalal, G. Krishna, A. Kumar, N. Odyuo, H.N. Sharma, P.K. Bhardwaj, L. Hepuni, A. Kar, B.B.T. Tham & L.R. Meitei (2023). Flora of Manipur—a pictorial guide. In: Mao, A.A. & P.K. Mukharjee (eds) Botanical Survey of India, Kolkata and Institute of Bio-resources & Sustainable Development, Ministry of Science and Technology. Govt. of India, New Delhi, 298 pp.
- Allgayer, R. & J. Teton (1987). *The Complete Book of Aquarium Plants*. Weidenfeld & Nicolson, Ward Lock, London, 157 pp.
- Biju, P., E.J. Josekutty, K.A.R.M. Haneef & J. Augustone (2016a). *Nymphoides balakrishnanii* sp. nov. (Menyanthaceae). A New Species from the Lateritic Plateau of Southern Western Ghats, India. *International Journal of Advanced Research* 4(7): 799–803. <https://doi.org/10.21474/IJAR01/945>
- Biju, P., E.J. Josekutty, K.A.R.M. Haneef & J. Augustone (2016b). A new species of *Nymphoides* Séguier (Menyanthaceae) from the lateritic plateau of South India. *Taiwania* 61(3): 218–220. <https://doi.org/10.6165/tai.2016.61.218>
- Brock, C.M., G.H.P. Arts, I.L.M. Goossen & A.H.M. Rutenfrans (1983). Structure and annual biomass production of *Nymphoides peltata* (Gmel.) O. Kuntze (Menyanthaceae). *Aquatic Botany* 17: 167–188. [https://doi.org/10.1016/0304-3770\(83\)90056-6](https://doi.org/10.1016/0304-3770(83)90056-6)
- Burks, K.C. (2002). *Nymphoides cristata* (Roxb.) Kuntze, a recent adventive expanding pest in Florida. *Castanea* 67: 206–211.
- Cheek, M.D. (2018). First confirmed record of *Nymphoides peltata* (SG Gmel.) Kuntze (Menyanthaceae) naturalised in southern Africa. *Bothalia–African Biodiversity & Conservation* 48(1): 1–4.
- Chester, E.W., B.E. Wofford, L.E. McKinney & D. Campbell (1996). Rare and noteworthy vascular plants from the Fort Campbell Military Reservation, Kentucky and Tennessee. *SIDA, Contributions to Botany* 17(1): 269–274.
- Cook, C.D.K. (1990). Seed dispersal of *Nymphoides peltata* (S.G.Gmelin) O. Kuntze (Menyanthaceae). *Aquatic Botany* 37: 325–340.
- Cook, C.D., B.J. Gut, E.M. Rix & J. Schneller (1974). *Water plants of the world: a manual for the identification of the genera of freshwater macrophytes*. Springer Science & Business Media.
- De Bélair, G. (2010). *Nymphoides peltata* (Pan–Africa assessment). The IUCN Red List of Threatened Species 2010: e.T164309A5821218. Accessed on 27.v.2025.
- Ho, T.N., R. Ornduff, Z.Y. Wu, P.H. Raven & D.Y. Hong (1995). Menyanthaceae Eds Flora of China 16 Science Press, Beijing, and Missouri Botanical Garden Press St.
- Jain, S.K. & R.R. Rao (1976). *A Handbook of Field and Herbarium Methods*. Today & Tomorrow's Printers and Publishers, New Delhi, 158 pp.
- Kim, T.Y., N.J. Park, H. Jegal, J.H. Paik, S. Choi, S.N. Kim & M.H. Yang (2023a). *Nymphoides peltata* root extracts improve atopic dermatitis by regulating skin inflammatory and anti-oxidative enzymes in 2, 4–dinitrochlorobenzene (DNCB)–induced SKH–1 hairless mice. *Antioxidants* 12(4): 873.
- Kim, T.Y., N.J. Park, B.G. Jo, B.S. Lee, M.J. Keem, T.H. Kwon, K.H. Kim, S.N. Kim & M.H. Yang (2023b). Anti-Wrinkling Effect of 3,4,5-tri-O-caffeoylquinic Acid from the Roots of *Nymphoides peltata* through MAPK/AP-1, NF- $\kappa$ B, and Nrf2 Signaling in UVB-Irradiated Cells. *Antioxidants* 12: 1899. <https://doi.org/10.3390/antiox12101899>
- Kim, T.Y., B.S. Lee, B.G. Jo, S.P. Heo, Y.S. Jung, S.N. Kim, K.H. Kim & M.H. Yang (2024). Iridoid glycosides and coumarin glycoside derivatives from the Roots of *Nymphoides peltata* and their in vitro wound healing properties. *International Journal of Molecular Sciences* 25: 1268. <https://doi.org/10.3390/ijms25021268>
- Lansdown, R.V. (2014). *Nymphoides peltata*. The IUCN Red List of Threatened Species 2014: e.T164309A42398483. <https://doi.org/10.2305/IUCN.UK.2014-1.RLTS.T164309A42398483.en>. Accessed on 27.v.2025.
- Mehrvarz, S.S. & M.A. Nodehi (2016). A review of the genus *Nymphoides* (Menyanthaceae) in Iran. *Phytotaxa* 257(3): 261–270. <https://doi.org/10.11646/phytotaxa.257.3.4>
- Meusel, H., E.J. Jäger, S. Rauschert & E. Weinert (eds.). (1978). *Vergleichende Chorologie der zentraleuropäischen Flora: Karten*. VEB Gustav Fischer Verlag.
- Nasir, E. & S.I. Ali (eds.) (1970–1995). *Flora of West Pakistan*. Islamabad, Karachi, 131 pp.
- NatureServe (2008). NatureServe Explorer: An online encyclopedia of life, Version 7.0. Arlington, VA: Nature Serve. <http://www.natureserve.org/explorer>
- NOBANIS (2005). Regional portal on invasive alien species. North European and Baltic Network on Invasive Alien Species. <http://www.nobanis.org>

- www.nobanis.org/speciesInfo.asp?taxalD=3461
- NWCB (2007).** Written Findings of the State Noxious Weed Control Board – Class B – B– Designate Weed: Yellow Floating Heart (*Nymphoides peltata*) (Gmel.) Kuntze. Olympia, WA: Washington State Noxious Weed Control Board. Olympia, USA. [http://www.nwcb.wa.gov/weed\\_info/yfloatingheart.html](http://www.nwcb.wa.gov/weed_info/yfloatingheart.html)
- Ornduff, R. (1966).** The origin of dioecism from heterostyly in *Nymphoides* (Menyanthaceae). *Evolution* 20: 309–314.
- Parratt, S.N. (1980).** *The Religion of Manipur: Beliefs, Rituals and Historical Development*. Firma KLM (Pvt.) Ltd., Calcutta, India, 218 pp.
- POWO (2025).** Plants of the World Online. Facilitated by the Royal Botanic Gardens, Kew. Published on the Internet; <https://powo.science.kew.org/>. Retrieved 10.vii.2025.
- Sivarajan, V.V. & K.T. Joseph (1993).** The genus *Nymphoides* Séguier (Menyanthaceae) in India. *Aquatic Botany* 45(2–3): 145–170.
- Smits, A., G. Schmitz & G. van der Velde (1992).** Calcium-dependent lamina production of *Nymphoides peltata* (S.G. Gmel.) O. Kuntze (Menyanthaceae): implications for distribution. *Journal of Experimental Botany* 43: 1273–1281. <https://doi.org/10.1093/jxb/43.9.1273>
- Stuckey, R.L. (1973).** The introduction and distribution of *Nymphoides peltatum* (Menyanthaceae) in North America. *Bartonia* 42: 14–23. <https://doi.org/10.2307/41610364>
- Tippery, N.P., D.H. Les, D.J. Padgett & S.W.L. Jacobs (2008).** Generic circumscription in Menyanthaceae: a phylogenetic evaluation. *Systematic Botany* 33: 598–612. <https://doi.org/10.1600/036364408785679851>
- Tippery, N.P., K.C. Pawinski & A.J. Jeninga (2021).** Taxonomic evaluation of *Nymphoides* (Menyanthaceae) in eastern Asia. *Blumea–Biodiversity, Evolution and Biogeography of Plants* 66(3): 249–262. <https://doi.org/10.3767/blumea.2021.66.03.08>
- Tippery, N.P., N.E. Harms, M.F. Purcell, S.H. Hong, P. Häfliger, K. Killoy & R.A. Thum (2023).** Assessing the genetic diversity of *Nymphoides peltata* in the native and adventive range using microsatellite markers. *Biological Invasions* 25(12): 3949–3963. <https://doi.org/10.1007/s10530-023-03151-y>
- Tutin, T.G. (1972).** *Nymphoides* Séguier pp. 67–68. In: Tutin, T.G., Heywood, V.H., Burges, N.A., Moore, D.M., Valentine, D.H., Walters, S.M. & Webb, D.A. (eds.) *Flora Europaea* 3. Cambridge University Press, Cambridge, UK.
- van der Velde, G., T.G. Giesen & L. van der Heijden (1979).** Structure, biomass and seasonal changes in biomass of *Nymphoides peltata* (Gmel.) O. Kuntze (Menyanthaceae), a preliminary study. *Aquatic Botany* 7: 279–300.
- Weldon, J. (2024).** Modelling the risks of *Nymphoides peltata* spread in Swedish lakes. Rapport/Sveriges lantbruksuniversitet, Institutionen för vatten och miljö, (2024): 15).
- WFO (2025).** World Flora Online. Published on the Internet; <http://www.worldfloraonline.org>. Accessed on 10.vii.2025.
- Wood, C. E. (1983).** The genera of Menyanthaceae in the southeastern United States. *Journal of the Arnold Arboretum* 64(3): 431–445. <https://doi.org/10.5962/bhl.part.27411>
- Zhigzhitzhapova, S.V., E.P. Dylenova, E.P. Nikitina, Z.A. Tykheev, E.T. Pintaeva, L.D. Radnaeva & G.T. Tsybekmitova (2021).** Composition of Fatty Acids from *Nymphoides peltata*. *Chemistry of Natural Compounds* 57(4): 743–745. <https://doi.org/10.1007/s10600-021-03463-2>
- Zhonghua, W., Y. Dan, T. Manghui, W. Qiang & X. Wen (2007).** Interference between two floating-leaved aquatic plants: *Nymphoides peltata* and *Trapa bispinosa*. *Aquatic Botany* 86(4): 316–320. <https://doi.org/10.1016/j.aquabot.2006.11.008>

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NAAS rating (India) 5.64

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ISSN 0974-7907 (Online) | ISSN 0974-7893 (Print)

February 2026 | Vol. 18 | No. 2 | Pages: 28262–28454

Date of Publication: 26 February 2026 (Online &amp; Print)

DOI: 10.11609/jott.2026.18.2.28262-28454

[www.threatenedtaxa.org](http://www.threatenedtaxa.org)

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