

***NYPHOIDES INDICA* (L.) KUNTZE, A NEW RECORD FOR PAKISTAN**

**SARFARAZ KHAN MARWAT, MIR AJAB KHAN, MUSHTAQ AHMAD
AND MUHAMMAD ZAFAR**

*Department of Plant Sciences,
Quaid-i-Azam University, Islamabad, Pakistan*

Abstract

The present study is based on the results of taxonomic research work conducted in Dera Ismail Khan District, NWFP, Pakistan, during 2005–2007. *Nymphoides indica* (L.) Kuntze an aquatic plant of family Menyanthaceae is reported for the first time from Pakistan. The specimen was collected from water near D.I. Khan–Darya Khan Bridge. Complete macro and microscopic details and morphological features of this species were discussed. A photograph of the species and its habitat is given.

Introduction

Nymphoides Hill., is a genus of the family Menyanthaceae and is represented by about 20 species which are cosmopolitan (Cook, *et al.*, 1974). This genus is so far represented by two species in Pakistan viz., (i) *N. cristata* (Roxb.) O. Ktze. syn. *Menyanthes cristata* Roxb., *Limnanthemum cristatum* (Roxb.) Griseb., and (ii) *N. peltatum* (S.G. Gmel.) O. Ktze. syn. *M. nymphoides* L. and *L. peltatum* S.G. Gmel. (Stewart, 1972; Qaiser, 1977). It is distributed in the districts of Attock, Thatta, D.I.Khan and Kashmir.

Recently, a specimen of *Nymphoides* was collected from still and slow running water near D.I.Khan-Darya Khan Bridge of Dera Ismail Khan district in the month of November, 2007. After critical study the plant has been identified as *Nymphoides indica* (L.) Kuntze following the description and illustration given by Ho & Ornduff (1995).

A comparison of all the three species is presented:

	Name	Habit	Leaves	Corolla	Seeds
1.	<i>N. peltatum</i>	Perennial	Somewhat rounded 2.5-5 x 2-6cm	Brightly yellow, lobes sparingly fringed, 18-25 x 2.5-3 mm	Compressed, smooth
2.	<i>N. cristata</i>	Annual	Orbicular 2.5-7.5 x 2-8cm	White, lobes glabrous inside, 4 x 1.5-2mm	Globose, tuberculate
3.	<i>N. indica</i>	Perennial	Nymphaea-like, orbiculate 9.5-32 x 11-33cm	White, lobes, densely fringed inside 15-20 x 2.5-3 mm	Globose, smooth

Nymphoides indica was not reported before from Pakistan in the relevant literature of this region viz., Jafri (1966), Stewart (1972), Beg & Samad (1974), Qaiser (1977), Ahmed & Younis (1979), Nazir & Younis (1979), Leghari (1999), Leghari (2004) and Masih (2006). Therefore, it is recorded here for the first time from Pakistan.

*E-mail: skhan.marwat@gmail.com

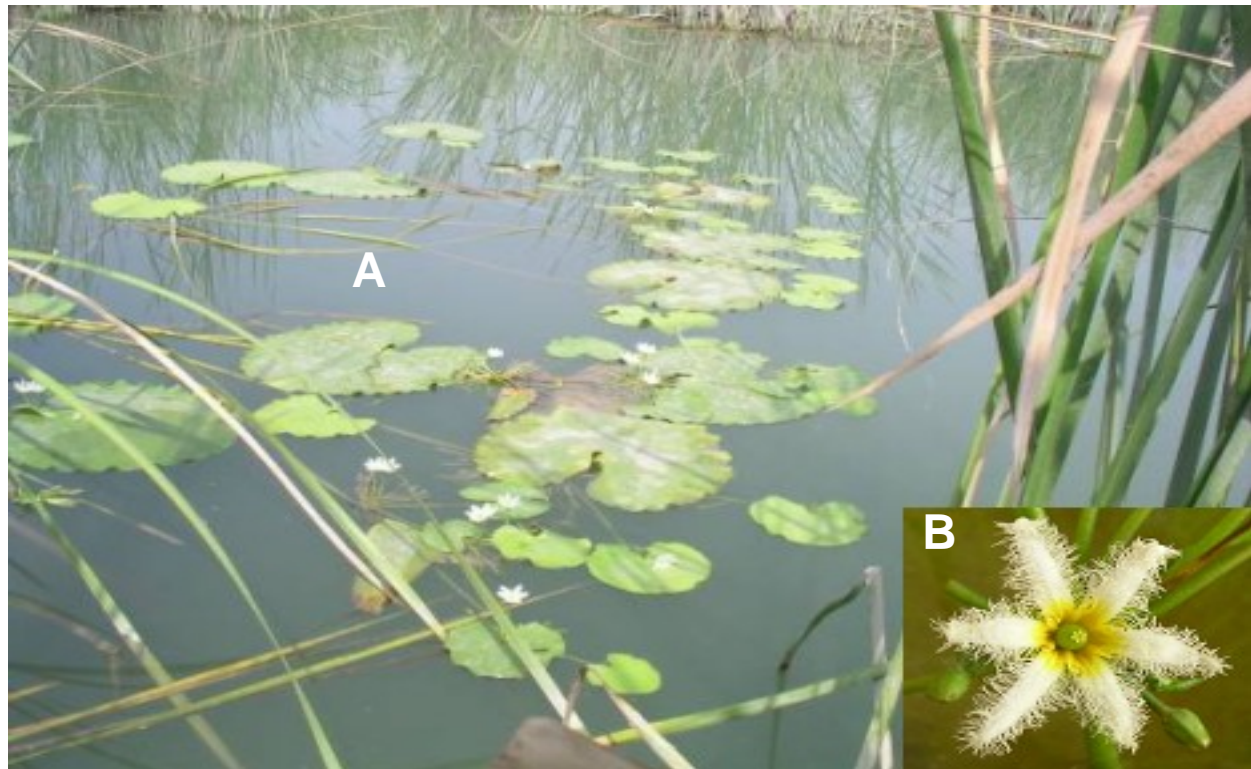


Fig. 1. *Nymphoides indica*. A. habit; B. a flower.

A detailed taxonomic description of the plant has been prepared with the help of fresh specimen, now maintained and preserved at the Herbarium of Quaid-i-Azam University Islamabad (ISL.).

Nymphoides indica (L.) Kuntze , Revis. Gen. Pl. 2: 429. 1891. Syn: *Menyanthes indica* L. Sp. Pl. 145. 1753. (Figs. 1, 2 and 3).

Annual, with long floating stem, rooting at the nodes. Rhizomes horizontal. Stems cylindrical, unbranched, upto more than 3 m long. Leaves petiole cylindrical, 4-15 cm; leaf blade nymphaea-like, orbiculate, deeply cordate, 9.5-32 x 11-33 cm, subcoriaceous, abaxially densely glandular, base cordate, margin entire or wavy; veins indistinct, palmate. Flowers many, clustered at nodes, pedicel cylindrical, 6.5-9.5 cm. Calyx 7-13 x 2-3 mm, lobed to near base; lobes lanceolate to narrowly elliptic, apex obtuse (acute).

Corolla white with a yellow center, 15-20 x 2.5-3 mm; lobes usually narrowly elliptic, upper surface (inside) densely fringed and covered with frilly hairs, apex obtuse or acute. Filaments flattened, linear, 1.5-1.7 mm; anthers sagittate, 2-2.2 mm. Style cylindrical; stigma lobes triangular. Capsules elliptic, 3-5 mm, few seeded. Seeds brown, globose, smooth, 1.2-1.5 mm.

Flowering and fruiting period: August - October.

Specimen examined: Dera Ismail Khan: Standing water near D.I.Khan-Darya Khan Bridge, *Sarfraz Khan*, 8.xi.2007, 415 (ISL).

Ecology: Floating on the surface of water.

Distribution: Standing water; below 100-1600 m. Cambodia, India, Indonesia, Japan, Korea, Malaysia, Myanmar, Nepal, Sri Lanka, Vietnam; Australia, Pacific Islands.



Fig. 2. Cluster of flowers of *Nymphoides indica* having corolla lobes glabrous outside.



Fig. 3. Fully opened flower of *Nymphoides indica* having corolla lobes hairy inside.

Note: *Nymphoides indica* (L.) Kuntze is closely related to *N. cristata* (Roxb.) O. Ktze, but differs from the latter in having Petals of unusual feathery edges. In *N. cristata* (Roxb.) O. Ktze the petals have no feathery edges.

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