Indian Journal of Traditional Knowledge
Vol 23(1), January 2024, pp 35-38
DOI: 10.56042/ijtk.v23i1.8141

Short Communication

Religiously associated Manipuri Kombirei (*Iris laevigata* Fisch.): A new addition to the Indian flora

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Received 06 April 2023; revised 14 August 2023; accepted 04 January 2024

Religiously associated Manipuri Kombirei or Manipuri Iris which is considered endemic to Manipur as per the Flora of Manipur (2000) has long been misidentified (misnomer) as *Iris bakeri* Wall. (Iridaceae) but after thorough investigation the botanical identity of this plant has been established as *Iris laevigata* Fisch. In India, *I. laevigata* Fisch. is the first report from Manipur, hence it is a new addition to the Indian Flora. During 1960's *Kombirei* plant was naturally growing in two wetlands of Manipur namely, Lamphelpat and Yaralpat but now it has completely vanished from its natural habitat due to various factors like habitat loss and invasion by weeds but a few hundred plants are maintained in captive farm at the periphery of Lamphelpat by a private cultural society *viz.*, Ipathoukok. Currently, some plants are also recorded in small pockets from two wetlands of Manipur namely, Maibam Phumlou and Ikkop pat which is believed to have been established later by being brought down by the upstream rivers falling into the lakes. Manipuri Iris is religiously offered during the Manipuri New Year *viz.,* Sajibu Cheiraoba as a symbol of eliminating caste system. Due to its habitat sensitivity, conservation of this plant should be prioritized, otherwise loss of this species from Manipur may lead to loss of a species from the Indian flora.

Keywords: *Iris laevigata* Fisch, *Kombirei*, Meitei community, Manipur, New to Indian flora, Religiously associated, PIC number

IPC Code: Int Cl.[24]: A01H 5/00, A01H 6/00

The *Iris* L. (Iridaceae), a small genus which comprises about 260-300 species[1] worldwide; is widely distributed over much of the temperate and sub-arctic regions of the Northern Hemisphere[2]. Twenty-one taxa of *Iris* are reported from the whole Himalayan region[3] and 23 species from India[4]. Three Iris species *viz*., *I. clarkei* Baker *ex* Hook f., *I. decora* Wall. and *I. wattii* Baker *ex* Hook. f. are naturally growing in Manipur[5]. Generally, *Iris* species may be terrestrial or aquatic in habitat while some are grown in high altitudes like *Iris decora, Iris wattii*, etc. One species of *Iris* locally called as '*Kombirei*' or '*Konbirei*' has been growing in the wetlands or swampy localities in Manipur since ages. A research publication of Botanical Survey of India, published in 1961, suspects the *Kombirei* or Manipuri Iris to be *Iris bakeri* Wall. but under investigation[6]. Since then, the scientific name of the *Kombirei* plant has been used as *Iris bakeri* Wall. but it is found that *Iris bakeri* Wall. is misnomer and non-existent species. This species was also reported endemic to Manipur[7]. The species identity was overlooked during the last few decades; therefore, the present study was taken up when this species bloomed, for detailed morphological study based on living specimens. The flowering plant specimens were collected from the farm of the Ipathoukok, Lamphelpat, Imphal (24º49'86" N & 93º55'66" E; altitude 782 m asl.) with collection No. 0023 dt. 06-04-2017). The collected flowering plant samples were used to prepare herbarium specimen(s) following standard methodology[8] (Fig. 1). The herbarium specimen is preserved at CSIR-NEIST, Branch Laboratory, Lamphelpat, Imphal, Manipur and one specimen has been deposited in the 'ASSAM' Herbarium of the Botanical Survey of India, Eastern Circle, Shillong. The identity of this plant has been established as *Iris laevigata* Fisch. after thorough study of the plants, its flowers and other morphological structures. The identity of the plant was authenticated from the Royal Botanical Garden, Kew (through Prof Toni Hall – an Iris specialist).

This Iris species '*Kombirei*' is religiously associated with the Meitei or Meetei community as it is offered during the Manipuri New year called Sajibu Cheiraoba. In Manipur, some legends are associated with this blue-coloured beautiful flower of *I. laevigata* Fisch. As narrated by elders it is believed that the word *Kombirei* is derived from the words *Kum-pi-lei* (kum = season; pi = dominant; lei = flower), the most beautiful flower, dominant and full bloom during the early season (Manipuri New Year

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Fig. 1 — Herbarium of *Kombirei* (*Iris laevigata* Fisch.)

which generally falls during the month of April). The flower of this plant is used as a symbol of the Manipuri New Year called '*Sajibu Cheiraoba'* (*Sajibu* is the first month of Manipuri calendar*; Cheiraoba* is celebration of new year on the first day of the *Sajibu* month by counting of sticks). The flower of *I. laevigata* Fisch. along with the flowers of Kushumlei (*Carthamus tinctorius* L.), Leiri (*Symplocos cochinchinensis* Moore) and other flowers are made into bunch (Fig. 2) and offered during the religious celebration. The bunches are generally sold for Rupees 20/- in local markets during the festival time earning livelihood for a section of women. Now-a-days, due to unavailability of the *I. laevigata* flowers, the blue flowers of other introduced *Iris* species (*Iris sanguinea* Don *ex* Hernem) and *Jacaranda mimosifolia* D. Don (Bignoniaceae) are used as a substitute of it.

Also, another Manipuri legends narrates that '*Kombirei'* is the name of a lower caste girl who fell in love with a higher caste boy but the parents and

Fig. 2 — A bunch of flowers made with Kombirei flower (*Iris laevigata* Fisch.) and other plants.

society went against them. Society did not allow them to marry and the girl committed suicide to save the disgrace. It is believed that the beautiful *Kombirei* plant grew up from the wetlands where her dead body was disposed. The tragic end of the story made the human society to realize the stigma of caste system. A famous Manipuri feature film entitled *Kombirei* is also made on the same story line. A popular Manipuri romantic song "*Kombirei Yaralpatki Kombirei Paima Pukning Ngungonle*" describes about the plant. Hence, the flower of this plant is offered to the local deity during Manipuri New Year to resolve against the stigma of caste system. It is also informed by elders that the blue colour obtained from the flowers was used in expensive paintings especially in royal paintings.

Botanical description of *Kombirei*

It is a perennial herb up to 120 cm high, rhizome is stout, or swollen, creeping 1 to 1.5 cm. Leaves mostly basal linear, sword-shaped, almost erect upto 100 cm long and 1-1.5 cm broad, mid-vein absent with many fine parallel veins, dark green in colour, almost erect, apex pointed. Flowering stem up to 60 cm, solid, spathes 3-5, irregular. Flowers dark blue, 8-9 cm in diameter, pedicel 1-3 cm; perianth tube c. 2 cm, elliptical, outer segments obovate or elliptic with a central white zone 3×5 cm; inner

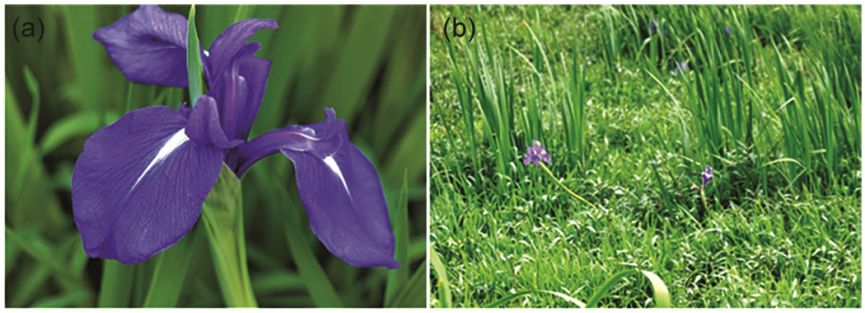

Fig. 3 — *Kombirei* (*Iris laevigata* Fisch.) (a) Close-up flower, (b) Habitat in Manipur

segment erect or slightly recurved inside, oblanceolate 6×1.5 cm. (Fig. 3a). Stamens c. 3 cm; anthers white, ovary c. 1 cm × 2 cm., style branches, stigma 2-lobbed. Capsules ellipsoid, cylindrical, 1.5×6 cm. Seed brown, semi-orbicular c. 5 mm.

Fl.: April, *Fr.*: May-June.

Habitat: swampy localities (Fig. 3b).

Distrib: Amur, Buryatiya, China North-Central, China South-Central, Chita, Irkutsk, Japan, Khabarovsk, Korea, Kuril Is., Manchuria, Primorye, Sakhalin, Yakutskiya. Introduced into: Western Australia

Threats and conservation status

Due to anthropogenic pressure, a good number of plants once abundant in the wild habitats have now almost vanished from its natural habitat such as eryngo or *Eryngium foetidum*[9]. As narrated by elders, about 50 years ago plenty of *Iris* flowers were available for sale in the markets during the Manipuri New Year. However, it is not so today. The rapid decline and loss of the population from the natural habitats were due to rampant collection of the flower for dye extraction, religious purposes, invasion by invasive weeds *viz.,* Para grass (*Brachiaria mutica* (Forssk.) Stapf) and alligator weed (*Alternanthera philoxeroides* (Mart.) Griseb.), conversion of wetlands (natural habitat) into paddy fields, extension of human settlements and other developmental activities, which are responsible for the extinction of its population from the original natural habitats. *I. laevigata* can be assessed regionally as endangered species in India (EN B2a, b(iii). Presently apart from an NGO, no conservation action has been taken up by Government and other organization in the state. *In-situ* conservation can be taken up in available wetland in the vicinity of the original natural habitats. *Ex-situ* plantation of *I. laevigata* has been tried at the CSIR-NEIST Branch Laboratory at Lamphelpat, Imphal but was not successful. A few plants are being conserved *ex-situ* in the Botanical Garden of Botanical Survey of India, Barapani, Meghalaya.

Conclusion

I. laevigata Fisch. has not been reported earlier, from India[1-7] and this being the first record from Manipur, it is a new addition to the flora of India. Also due to wrong identification as *I. bakeri*, it was earlier reported as endemic to Manipur. The species is endangered regionally as stated above and need to be conserved. If no proper conservation measures taken up urgently, the species may completely be vanished from the state and from India as well.

Acknowledgements

The authors are thankful to the Director, CSIR - North-East Institute of Science & Technology, Jorhat, Assam for the facilities. The help of Prof Tony Hall, Honorary Research Associate of Royal Botanic Gardens, Kew, UK is greatly acknowledged for authentication of the species identity.

Conflicts of Interest

The authors have no conflict of interest to disclose.

Authors' Contributions

HBS did the field study, collected plant samples, morphological study of the plant, plant identification and manuscript preparation; AAM helped in species authentication, herbarium preparation & deposition in BSI, EC, Shillong and manuscript correction.

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