

Relocation of *Ophioglossum gramineum* Willd (Ophioglossaceae)

The order Ophioglossales is most primitive of the pteridophytes but is found completely absent in the fossil record¹. It comprises a single family with three representative genera: *Botrychium*, *Helminthostachys* and *Ophioglossum*. About 40 species of *Ophioglossum* are recorded worldwide, of which 12 species are documented in India^{2,3}. Gujarat accounts for six species and one variety⁴⁻⁷.

Phatak *et al.*⁴ and Chavan and Mehta⁵ reported these species in the vicinity of Vadodara and are common in most of the forests. In contrast, *O. gramineum* was reported only from Harni and Savali^{4,5}. Both locations are either industrialized or converted into housing colonies and consequently resulted in a permanent habitat loss leading to the extinction of the species in the state. The present study aims to relocate *O. gramineum* to its new home at Zand Hanuman.

An extensive survey of Pteridophytes was carried out in different forests, wetlands, plains and hilly regions of the state during 2013–14 for surveying its diversity in Gujarat. The diagnostic and morphological features along with relevant field notes were recorded in the field for all the specimens. Field photographs were taken in their natural habitat with digital camera (Cannon SLR 1200D). Herbariums prepared from the collected specimens have been deposited

in the BARO Herbarium of the Department of Botany, the Maharaja Sayajirao University of Baroda. Specimens were identified by referring to standard references^{3,8-10}.

During the survey in 2013–14, five species of *Ophioglossum* were collected, one of which appeared like grass (Figure 1). On the basis of morphological features, it is identified as *O. gramineum*. It is a terrestrial herbaceous plant, slender, small 4–12 cm in height with elongated and short rhizome bearing one to three fronds. Leaves are linear to linear lanceolate with attenuate base; margin entire, apex acute, sub-coriaceous with 2–3 parallel veins (Figure 1). Its grass-like appearance makes it indistinguishable from adjacent grass. Leaves on the plant are not fertile. Attachment of fertile fronds varies from being too low or too high while it is rare in the middle. Sporangia are small, spherical and acuminate at apex, bearing 4–14 pairs, which dehisce by transverse slit. Spores are numerous and thick walled.

All the five species are reported in the wild from Gujarat state¹¹⁻¹⁵. Other species are commonly available in Gujarat except *O. gramineum*. Except for Harni Village, no additional localities were recorded by Chavan and Mehta⁵. Even though considered extinct, we relocated it to a new habitat at Zand Hanuman in Panchmahal forest.

Development of infrastructure facilities, deforestation and anthropogenic pressure on forest ecosystem have resulted in destruction of many plant species. On the basis of field studies and available literature, Chandra *et al.*¹⁶ and Fraser-Jenkins¹⁷ assessed the status of rare and threatened pteridophytes of India and concluded that it falls under a near threatened and endangered category in Asian continents respectively. Moreover, the site of collection is located at the foothills and local residents use this area as pasture for cattle. This calls for an urgent need for conservation to protect this species from extinction from its new habitat.



Figure 1. *Ophioglossum gramineum*.

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ACKNOWLEDGEMENT. We thank Gujarat Biodiversity Board for the financial assistance.

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