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Short Communication

Ophioglossum jaykrishnae (Ophioglossaceae) Marks a Novel Addition to the Flora of Eastern Maharashtra, India

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ABSTRACT

In the present study, the population of inimitable individuals of *Ophioglossum L.* was observed during field studies in the Sakoli Tehsil of the Bhandara forest range of the state of Maharashtra. Specimens among the population were collected, brought to the laboratory, and processed for systematic studies under critical investigation. The collected species is illustrated with a reddish brown-pink color; trophophylls 2 to 4 per rhizomorph, lanceolate, erect. The species identified as *O. jaykrishnaea* new record for the Vidarbha region of the State of Maharashtra. The species was earlier reported and published in 2020 as a *de novo* species from Gujrat, India and in December 2023 from the state of Maharashtra.

Keywords: *Ophioglossum*, Sakoli Tehsil, Sporangia, Tropophylls, rhizomorph, lanceolate.

INTRODUCTION

Ophioglossum L. is a very imperative Genus among the pteridophytes concert in the evolutionary view of assessment. It is predominantly distributed in tropical and subtropical regions of the world. The genera recorded with the highest chromosome number midst the plant communities. *Ophioglossum* L. is one of the species-rich genera of the family Ophioglossaceae characterised by thick-walled sporangia borne on a spike subtended by tropophylls. In the last few decades, the study of the diversity of *Ophioglossum* L. was quickened in different perspectives, and several new species were reported.[1-8] The Genus *Ophioglossum* L. comprises about 55 species reported from different regions of the world and about 25 species were recorded from different geographical locations in India.[1-15]

In the present work, *in-situ* studies of the different populations of *Ophioglossum* L. were carried out. While working in the field, a sporadically distributed unique population of *Ophioglossum* L. was observed. The individual specimens among the population were collected and brought to the laboratory for further study. The individual has been studied, observation became recorded and floristic accounts were prepared by systematic treatment.

MATERIAL AND METHODS

Field studies were carried out by frequently visiting various locations at Sakoli Tehsil of the Bhandara forest area (located between 21.0861° N 79.9984° E. & 21°00'44"N 80°04'03"E 200-300 m) from June to September every year from 2018 to 2023. The field visits were carried out to study spatiotemporal niches, distribution, and variation among diverse genera of *Ophioglossum* L. The individual specimen among the population was collected and brought to the laboratory for further study. Critical examination regarding morpho-taxonomic features of the specimen has been done using the relevant literature such as National and Regional floras, books, journals, research articles, and periodicals. The inimitable individual has been studied, floristic accounts were prepared by systematic treatment and identified. Specimen observations were recorded at its *in-situ* niche and other characteristic features at the laboratory, and the outcomes were compared with the available literature.[3-8,14-16,24]

Taxonomic Treatment

Terricolous, small-medium size, about 4-9 cm in height, reddish brown-pink colour (chestnut-russet); trophophylls 2-4 per rhizomorph, 0.5-2.5 X 0.25-0.5, lanceolate (Lindley), simple, coriaceous, entire, apex acute, cuneate-truncate, margin entire, pseudo-costa present, venation parallel, without sheathing base, forming 30^0-60^0 angle with fertile segment; common stalk 0.8-1.3, subterranean-terranean white; rhizomorph subterranean, sub-globose, rhizoids few (5-8), slender, fistular; fertile segment 4-7.5 cm long, strobilli 0.8-1.2 cm long, 0.2-0.3 cm broad, 4-9 pair of sporangia arranged in slight alternate manner into two rows; spores globose, 25-35 µm diameter (Fig. 1).

RESULT AND DISCUSSION

In the present work the observations were recorded for reddish, brown-pink colour *Ophioglossum* L. was studied and collected between June to September from a Southern tropical dry deciduous forest. During field studies of two different sites of Sakoli Tehsil of

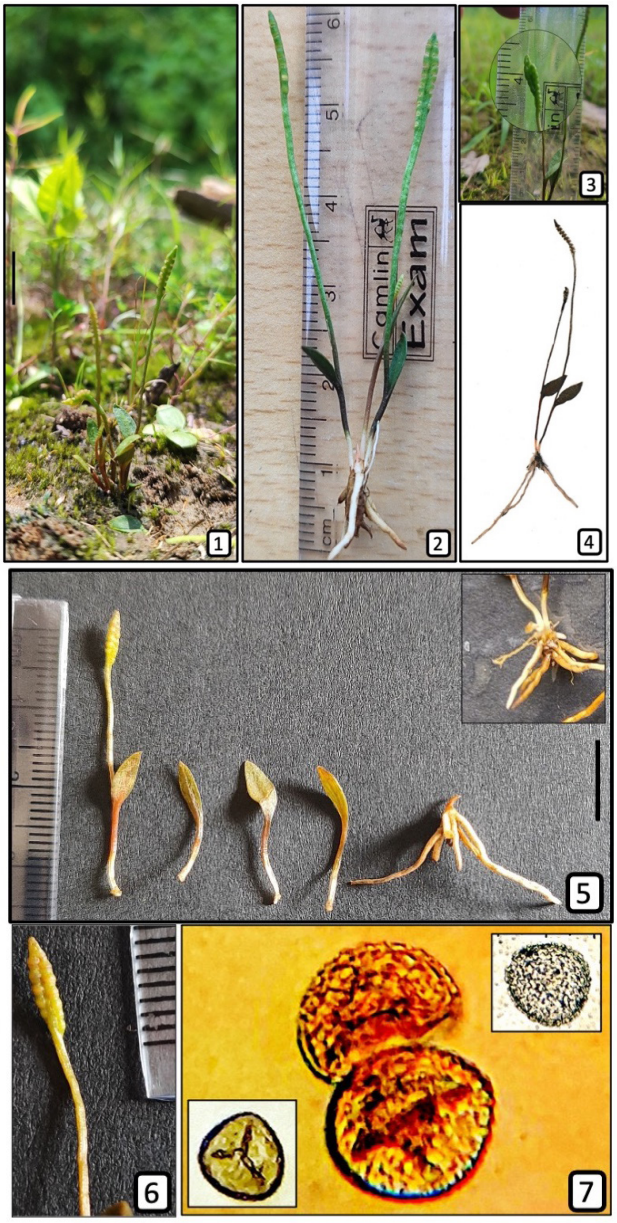

Fig. 1: *Ophioglossum jaykrishnae*: 1. Habit, 2. Complete individual with rhizomorph, 3. Bifurcated strobili showing unusual condition, 4. Collected voucher specimen 5. Individual with dissected tropophylls and rhizomorph, 6. Fertile segment and strobilus 7. Spores

district Bhandara, Maharashtra State, 40-60 individuals of a seasonal population of *Ophioglossum* L. exhibited random sporadic distribution in about 50-100 sq.m area in open grassland near waterbodies and found associated with other species of *Ophioglossum* L. Although different species were recorded, viz. *O. costatum* R. Br., *O. gramineum* Willd., *O. lustianicum* Linn., *O. nudicaule* Linn. f. var. *macrorrhizum* (Kunze) Clausen, *O. petiolatum* Hooker and *O. reticulatum* Linn. from the district Bhandara-old (12) and *O. vulgatum* L. (19). The spotted specimen's observations were recorded at the *in-situ* state and other characteristic features at the laboratory, and the findings were compared with *O. indicum* (17), *O. thermale* (17,20), *O. lusitanicum, O. gujartense* (6,12,21), *O. lusoafricanum and O. gomezianum* (7), *O. jaykrishnae* (4,23). Based on the above enumeration, the species under study identified and presents as *Ophioglossum jaykrishnae* S. M. Patil, S. K. Patel, Raole & K. S. Rajput, a new record for the State of Maharashtra. The species was earlier reported as a new species from Gujrat, India, (4). and from the state of Maharashtra (23). The voucher specimens are deposited at the PG Department of Botany D. D. Bhoyar College of Arts and Science, Mouda District Nagpur, MS India.[25-27]

CONCLUSION

The research conducted in the Sakoli Tehsil Block of Bhandara district, Maharashtra, spanning an area of 634 km², revealed Eastern Maharashtra's rich floral diversity across diverse ecosystems. Through frequent visits to different localities, the study made a notable discovery of *Ophioglossum jaykrishnae*, a plant species, that was documented in the Eastern region of the State of Maharashtra for the first time. This finding is significant, especially considering that the species had been previously identified as new in 2020, originating from Gujrat, India, and in December 2023 from the state of Maharashtra. The study sheds light on the unique and diverse plant life in this region, expanding our understanding of the botanical landscape in Eastern Maharashtra.

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CONFLICT OF INTEREST

There is no conflict of interest.

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