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“STUDIES ON THE GENUS OPHIOGLOSSUM L. FROM DEVCHAND COLLEGE, ARJUNNAGAR CAMPUS, KOLHAPUR, INDIA”

A. P. Patil^{1*}, S. S. Amate¹, P. D. Shirgave and S. B. Patil¹

^{1*}Assistant Professor, Yashawantrao Chavan Warana Mahavidyalaya, Warananagar. Maharashtra, India.

¹Assistant Professor, Devchand College Arjunnagar, Nippani. Maharashtra, India.

¹Associate Proffesor, Devchand College Arjunnagar, Nippani. Maharashtra, India. Assistant Professor, Anandibai Raorane Arts, Commerce & Science College, Vaibhavwadi, Maharashtra, India.



ABSTRACT:-

The Genus *Ophioglossum* L. is revised for Devchand college, Arjunnagar and there were reported six species viz. *Ophioglossum polyphyllum* A. Braun ex Seubert., *Ophioglossum costatum* R. Br., *O. gramineum* Willd., *O. parvifolium* Grev. & Hook., *O. nudicaule* L. and *O. species* (unknown), from different parts of the campus. Amongst these, *O. species* (unidentified), *Ophioglossum polyphyllum* A. Braun ex Seubert. and *O. nudicaule* L. were observed as very rare while other three species shows moderate population in campus and this result is documented

KEY WORDS: *Ophioglossum* L., Taxonomy, eusporangiate, Devchand college, Arjun-nagar, Nippani, Maharashtra.

1. INTRODUCTION:

The genus *Ophioglossum* L. has 40 species and a few varieties known so far worldwide (Pichi-Sermolli 1958; Yadav and Goswami 2010, Clausen 1938). 13 species are reported from India (Fraser – Jenkins 1917). Manickam and Irudayaraj (1992) listed five *Ophioglossum* species from southern Western Ghats, and Bhuskute (1999) reported six species from Maharashtra. Patil (2014) raised the species number up to 8 by adding two species named *O. polyphyllum* and *O. parvifolium*. Recently a new species named *Ophioglossum gujaratense* is described from the Gujarat state by Patil et al. (2018).

2. Material and Methods:

During botanical survey in June - July 2018, Author collected 6 interesting *Ophioglossum* L. species from the locality Devchand College, Arjunnagar campus at Karnataka and Maharashtra boundaries. Photographs of plant specimens are taken in their natural habitat. Plant specimens were collected and transferred to the laboratory for morphological as well as microscopic analysis and for herbarium preparation. The collected taxa were identified by using appropriate floras, journals, virtual herbarium (European Herbariums, Kew catalogue) and monographs.

Key to the species of the genus *Ophioglossum* L. from Devchand College, Arjunnagar

- 1a. Sheathing leaf base present *O. polyphyllum*
- 1b. Sheathing leaf base absent 2
- 2a. Rhizomorph globose-knob like..... *O. costatum*
- 2b. Rhizomorph globose-subglobose 3
- 3a. Common stalk strictly subterranean *O. parvifolium*
- 3b. Common stalk present subterranean-above the ground ... 4
- 4a. Trophophylls linear-lanceolate, grass like *O. gramineum*
- 4b. Trophophylls not linear-lanceolate 5
- 5a. Trophophylls elliptic-ovate or oblong *O. nudicaule*
- 5b. Trophophylls ovate to lance- ovate *O. species* (unidentified)

3. Comparative study on the species of the genus *Ophioglossum* L. in Devchand college campus.

Characters	<i>O. polyphyllum</i>	<i>O. costatum</i>	<i>O. parvifolium</i>	<i>O. gramineum</i>	<i>O. nudicaule</i>	<i>O. species (unknown)</i>
Plants length	Up to 12cm	Up to 12 cm	Up to 5cm	Up to 8 cm	Up to 10cm	Up to 12 cm
Color	Yellowish green	Yellowish green	Silvery Dark green	Yellowish green	Yellowish light green	Dark green
Rhizome shape	Erect long cylindrical	Globose, knob like flat round at bottom	Sub Globose to cylindrical	Sub Globose to cylindrical	Sub Globose to cylindrical	Short cylindrical
Leaves per plant	Usually 2 rarely 4	Usually 3 rarely 1 or 2	Usually 1 very rarely 2	Usually 1 rarely 2	Usually 1 rarely 2	Usually 1 rarely 2
Common stalk	1.5 cm total subterranean	Absent	0.5 to 1 cm subterranean	1 to 2 cm 3/4 th part areal	3 to 5 cm 3/4 th part areal	1 to 2 cm 3/4 th part areal
Trophophyll	Elliptic, spatulate, lanceolate	Highly variable ovate, elliptic, lance-ovate.	Ovate, orbicular, rhomboid	Glasslike linear	Elliptic, orbicular	Ovate, lance- ovate
Trophophyll apex	Obtuse	Right angled, obtuse	Right angled, Acute	Acute	Obtuse	Mucronate
Venation	Veins without anastomosing with simple included vein -lets	Veins anastomosing with long areoles, costa present distinct	Veins inconspicuous Branched with free ending, costa present	Veins anastomosing, forming parallel areoles, costa absent	Veins anastomosing, forming polygonal areoles, costa indistinct,	Veins anastomosing with rectangular areoles, costa indistinct
Trophophyll sporophyll stalk angle	~20°	~60°	~90°	~20°	~30	~45°
No. of pairs of sporangia	16 to 20 pairs	16 to 25 pairs	5 to 12 pairs	5 to 12 pairs	10 to 15 pairs	15 to 22 pairs
Population per 100 m²	5	15	>100	>50	2	10

4. RESULT AND CONCLUSION: The campus of Devchand college, Arjunnagar is rich in *Ophioglossum* L. species while area out of campus shows only few species like *O. gramineum*, *O. parvifolium* and other species vanished must be due to anthropogenic activity like cultivation, construction, excessive grazing. Other species survived inside the campus because of inhibition of above mentioned activities. *Ophioglossum* L. are perennial through tuber or rhizomorph, rate of multiplication by spores is very low as observed by many scientist; hence need conservation steps. *Ophioglossum polyphyllum* A. Braun ex Seubert., *O. nudicaule* L. and *Ophioglossum* species (unknown) were observed as very rare while other three species shows moderate population. Identification process of unknown species is continue.

Insufficiency in original protologue of few *Ophioglossum* L. species causes problems in identification. Leaf shape, leaf texture, venation pattern, rhizome shape, leaf blade- fertile stalk angle and common stalk length these characters shows immense importance in the taxonomy of *Ophioglossum* L., The width of spike is more important than its length.

5. *Ophioglossum* L. species from Devchand college, Arjunnagar. Nippani



a. *Ophioglossum* L. species unknown b. *O. gramineum* c. *O. nudicaule*



d. *O. parvifolium*

e. *O. costatum* f. *O. polyphyllum*

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