

**Investigation and description of *Exacum paucisquamum* ( ) (Gentianaceae): a new record for Odisha state from Bonai Forest Division, Odisha, India**

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### Abstract

*Exacum paucisquamum* (C. B. Clarke) Klack., so far is known in India only from Western & Eastern Himalayas, is reported for the first time from Odisha state. A detailed description, phenology, distribution and photographs along with associated plants are provided for easy identification in the field.

**Keywords:** Mycoheterotrophic, Leaf litter, Ground orchids, Bonai

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### Introduction

*Exacum paucisquamum* (C. B. Clarke) Klack. was known to occur in India in the state of Sikkim (Singalila range), West Bengal (Darjeeling), in the moist Eastern Himalayas and Uttarakhand (Chamoli) in the Western Himalayas (Clarke 1883; Hara 1975; Tiwari *et al.* 2015) but the species are not reported from the Odisha state, India. During recent exploration works for biodiversity assessment and restoration of threatened plants, on 3<sup>rd</sup> September 2022 in Sole range of Bonai Forest Division, Odisha, authors collected a species from under the leaf litter. After critical morphological observation and literature (Yuan et al. 2003, 2005; Klackenberg 2006; Tiwari *et al.* 2015), it was found that collected species was *Exacum paucisquamum* on decomposed leaf litter. This is the first record of the species from Odisha state, India. A detailed description, phenology, distribution and photographs along with associated plants are provided for easy identification.

### Taxonomic Treatment

*Exacum paucisquamum* (C. B. Clarke) Klack., Bot. Jahrb. Syst. 126:478. 2006.  
*Cotylanthera paucisquamum* C.B. Clarke in Hook. f., Fl. Brit. India 4: 94. 1883; H. Hara, J. Jap. Bot. 50:327. 1975; Ho & Pringle, Fl. China 16:3. 1995. *Cotylanthera yunnanensis* W.W. Smith, Notes Roy. Bot. Gard. Edinburgh 13: 158. 1921.

### Description

It is mycoheterotrophic herb, 3.5-6.5 cm in height. Stem is white, erect, simple, fleshy. Leaves are 3-6 pairs, scale like, opposite, sessile; blade 1.5-3 mm long, entire at margin, acute at apex. Flowers are solitary, terminal. Calyx is 4 lobed, dull white, 3-5 mm long, triangular, obtuse at apex; mid-vein distinct. Corolla is 4 lobed, dark blue-whitish, 1 cm long, narrowly oblong, entire at margin, obtuse at apex. Stamens are 4; filament white, up to 3.1 mm long, linear; anther yellow, 2.5-4.2 mm long, sagittate, slightly curved. Style is linear, 5.8-8.5 mm long. Ovary ovoid-ellipsoid, 2-celled. Capsules are sub globose. Seeds are numerous (**Plate 1**).

**Flowering & fruiting:** August – September

**Habitat:** Moist area with rich decomposed leaf litter in evergreen and moist deciduous forest.

**Distribution:** China, Hong Kong, NW. Vietnam, India (Sikkim, Uttarakhand, West Bengal, Odisha).

**Associate plant species:** *Combretum roxburghii*, *Aeginetia indica*, *Epipogium roseum*, *Goodyera hispida*, *Shorea robusta* and *Nervilia concolor* (Plate 2)

**Notes:** The collected plant is growing under leaf litter only. Therefore, the conservation and protection of forest floor from forest fire is important for the conservation of the species. After the analysis of its population in Odisha state, it might be threatened or specific plant for a particular landscapes of Odisha state. It also showing associations with ground orchids and terrestrial parasitic plants.

**Specimen examined:** India, Odisha, Sundargarh, Bonai Forest Division, Sole, 22° 0' 30" N, 84° 36' 57" E, 680.17 m elevation, 3<sup>rd</sup> September 2022, Sweta Mishra & Sanjeet Kumar, 0073 (APRFH 073).



**Plate 1:** A) Ecology of collected specimen, B) Flower, C) Root, D) Whole plant and E) Flower parts



**Plate 2:** Associated species, A) *Aeginetia indica*, B) *Epipogium roseum*, C) *Nervilia concolor*

## References

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