

***Caldesia oligococca* (F. von Mueller) Buchenau [Alismataceae]: a new record for Assam in India**

S. Hazarika¹ and S. K. Borthakur

Department of Botany Gauhati University, Guwahati 781014, Assam, India

¹ Corresponding author: Department of Botany, A. D. P. College, Nagaon 782002, Assam, India

E-mail: sonjirahazarika@gmail.com

[Received 08.12.2014; Revised & accepted 20.05.2015; Published 30.06.2015]

Abstract

Caldesia oligococca (F. von Mueller) Buchenau [Alismataceae] collected from Hatichung of Nagaon District, Assam is reported as new distributional record for the state.

Key words: Hydrophytic flora, *Caldesia oligococca*, New Record, Assam.

INTRODUCTION

Caldesia Parlature (Alismataceae) is one interesting wetland genus. It is a scapigerous herb with glabrous submerged or floating leaves having peniculate pyramidal inflorescence with whorls of 3 branches and flowers, sepals persisting in fruit, nutlets laterally somewhat flattened, ridged, warty or spiny. The genus comprises of only four species and distributed mainly throughout the Old World tropics and of which three species have been reported so far from the Indian territory viz., *C. grandis* G. Samuelsson, *C. oligococca* (F. von Mueller) Buchenau and *C. parnassiifolia* (Bassi ex Linnaeus) Parlature (Cook 1996). *C. janaki-ammalii* Guha & Mandal has been reported as new species from Lower Bengal (Guha & Mandal 2003) and was not included in "Aquatic and Wetland Plants of India" by Cook (1996). In North-Eastern region the genus is represented by two species viz., *C. grandis* and *C. oligococca*, both from Khasi and Jaintia Hills of Meghalaya (Rao & Verma 1976). During the botanical collections from different water bodies in Nagaon district of Assam, an interesting specimen was collected by the authors during the month of October, 2012 and 2013 respectively from temporary water ditches in the Hatichung area along the margins of paddy fields. On critical study and scrutiny of literature (Subramanyam 1962; Cook 1996; Ghosh 2005) and herbarium materials in ASSAM the specimen was identified as *Caldesia oligococca* (F. von Mueller) Buchanan. Further scrutiny of literature (Rao & Verma 1976; Hajra & Jain 1996; Jain & Hajra 1978; Satyanarayana 1962; Baruah & Baruah 2000; Baruah 2003; Bora & Kumar 2003; Barooah & Mahanta 2006; Gogoi 2003, 2006; Sharma & Borthakur 2009; Sharma & Saikia 2010) revealed that *Caldesia oligococca* has not been reported so far from Assam and hence a new record for the state.

The taxonomic descriptions, Photographs, growth form and distribution are provided below.

Caldesia oligococca (F. von Mueller) Buchanan in Bot. Jahrb. Syst. 2: 479. 1882; Hartog in Fl. Males. 1, 5: 320. 1957; *Alisma oligococcum* F. von Mueller, Fragm. 1: 23. 1858; Hooker f., Fl. Brit. India 6: 560. 1893; Subramanyam, Aquatic Angiosperm 84. 1962; Rao & Verma, Bull. Bot. Surv. Ind. 18: 37. 1976; Cook, Aquat. Wet. Pl. Ind. 37. 1996.

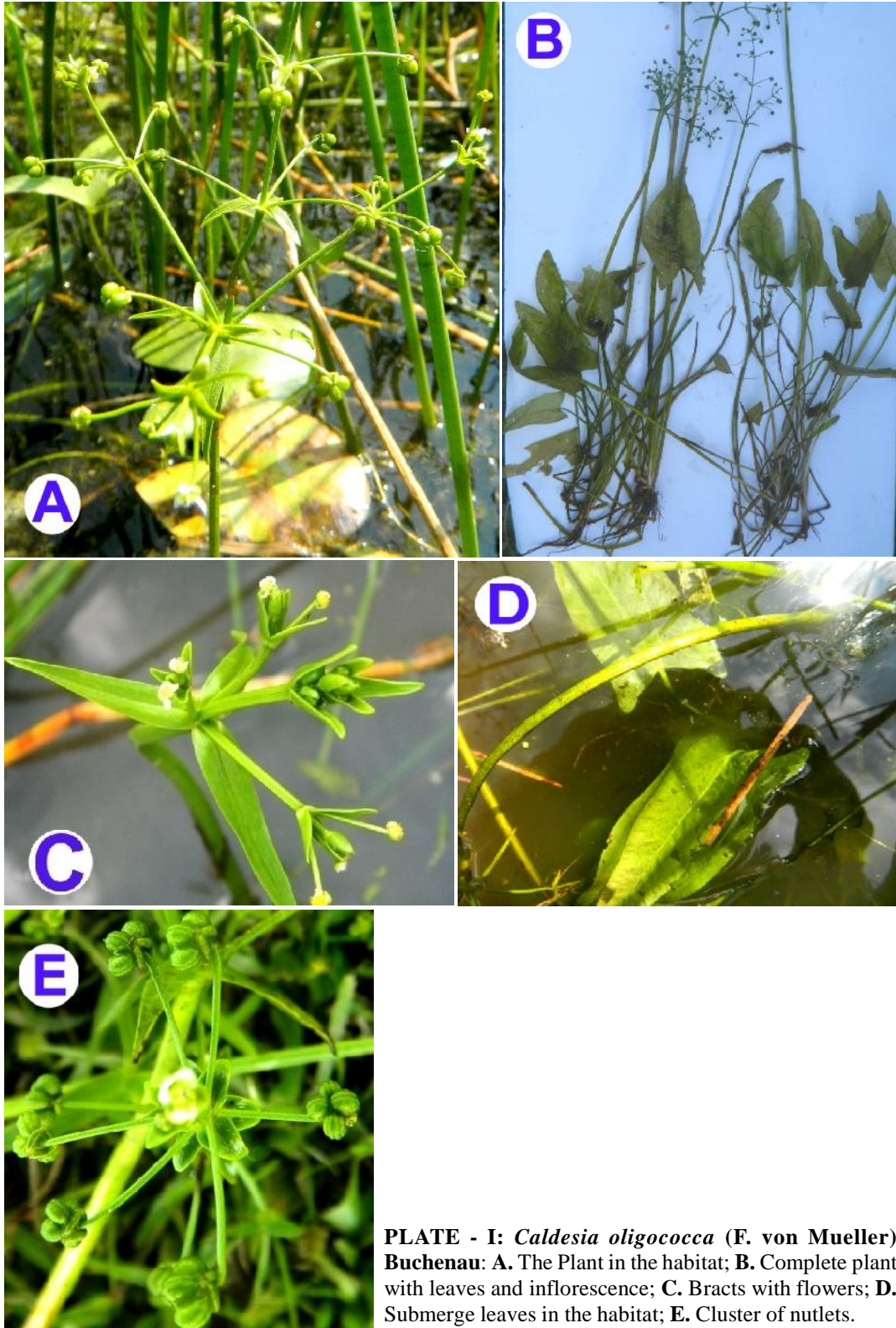


PLATE - I: *Caldesia oligococca* (F. von Mueller)
Buchenau: **A.** The Plant in the habitat; **B.** Complete plant with leaves and inflorescence; **C.** Bracts with flowers; **D.** Submerge leaves in the habitat; **E.** Cluster of nutlets.

Scapigerous aquatic herb; leaves submerged or floating, submerged leaves narrowly ovate, base cordate to sagittate, membranous, floating leaves leathery, ovate to suborbicular, deeply cordate, apex obtuse or acute, 4-15 cm long, 3-8 cm broad; bracts elongate-lanceolate with acute tips, very large at the base of inflorescence, up to 5cm long with 5-6 parallel veins, gradually becoming smaller above; scapes up to 45 cm long; panicle compound, pyramidal, soft, 15-26 cm long; branches and pedicels are arranged in whorls of three; pedicels 1-3 cm long; sepals ovate, 2-4 mm long, persistent and reflexed in fruit; petals ovate-lanceolate, 2-5 mm long white; stamens 6; carpels 3-7, style ventral, very short, deciduous; nutlets 2-6, kidney-shaped, 3-5 mm long, dorsally 4-ribbed, the ribs usually spinulose-warty; seeds reddish-brown.

Flowering & fruiting: October – November.

Growth form: Hyperhydrite (Cook 1996).

Distribution in India: Kerala, Punjab, Uttar Pradesh, West Assam (present record), West Bengal.

Distribution - Global: West Africa, Nigeria, Pakistan, India, Sri Lanka, Bangladesh, Thailand, Indonesia and Australia.

Exsiccatae: India, Assam, Nagaon District, Hatichung, 25. 10. 2012, *S. Hazarika* 266; 17.10. 2013, *S. Hazarika* 320 and 27.10.2013, *S. Hazarika* 329 (GUH).

Note: In Northeastern India, Rao & Verma (1976) reported the species only from Khasi and Jaintia Hills of Meghalaya. During field work the present authors collected the species from a single locality having sizable population. Ghosh (2005) reported the species from West Bengal and mentioned that the species is extremely rare. According to Cook (1996), the species is much variable, particularly in the sculpturing of the nutlets and in form and sized of the leaf blade.

The species grows in wetlands in association with *Ottelia alismoides* (Linnaeus) Persoon, *Aponogeton undulatus* Roxburgh, *Limnophila sessiliflora* (Vahl) Blume, *Limnophila aromatica* (Lamarck) Merrill, *Eleocharis dulcis* (N.L. Burman) Trinius ex Henschel, *Hedyotis brachypoda* A.P. de Candolle, *Sagittaria guayanensis* subsp. *lappula* (D. Don) Bogin, *Utricularia aurea* Loureiro, *Ipomoea aquatica* Forssk, and *Hydrilla verticillata* (Linnaeus f.) Royle, etc.

LITERATURE CITED

- Baruah, P.P. & Baruah, C.K. 2000. Study of the Hydrophytic flora of Kaziranga National Park, Assam, India. *Ann. For.* 8(2): 170 – 178.
- Baruah, P.P. 2003. Phytosociological Account of Macrophytes of a Disturbed Lentic Habitat in Middle Assam. *Ann. For.* 11(1): 27 – 36.
- Barooah, C. & Mahanta, P.K. 2006. Aquatic Angiosperms of Biswanath Chariali, Assam. *Indian J. For.* 29(3). 307-318.
- Bora, P. J. & Kumar, Y. 2003. *Floristic Diversity of Assam- Study of Pabitora Wildlife Sanctuary*. Daya Publishing House. Delhi.
- Cook, C.D.K., 1996. *Aquatic and Wetlands Plants of India*. Oxford University Press, Oxford, New York & Delhi.
- Ghosh, S.K. 2005. *Illustrated Aquatic and Wetland Plants in Harmony with Mankind*. Standard Literature, Kolkata.

- Gogoi, R. 2003. Macrophytic diversity of Deepar Beel, Assam. In Baruah P.P. (ed.) *Biodiversity of Eastern Himalayas Protected Areas*. Handique Girl's College, Guwahati. Pp. 81 – 87.
- Gogoi, R. 2006. *Macrophytic diversity of Deepar Beel with special reference to variation*. Ph.D. Thesis, Gauhati University.
- Guha, R. & Mandal, M.S. 2003. A New Species Of *Caldesia* Parl. (Alismataceae) from Lower Bengal. *J. Econ. Taxon. Bot.* 27: 1102 – 1106.
- Hajra, P.K. & Jain, S.K. 1996. *Botany of Kaziranga and Manas*. Surya International publications, Dehradun.
- Jain, S.K. & Hajra, P.K. 1978. On the botany of Manas Wildlife Sanctuary. *Bull. Bot. Surv. India* 17: 75 – 86.
- Rao, A.S. & Verma, D.M. 1976. Materials towards a monocot flora Assam V. (Flagellariaceae, Juncaceae, Typhaceae, Sparganiaceae, Alismataceae, Butomaceae, Aponogetonaceae, Potamogetonaceae and Eriocaulaceae) *Bull. Bot. Surv. Ind.* 18(1-4): 1 – 48.
- Satyannarayana, G. 1962. Hydrophytic vegetation of Jalukbari. *Bull. Bot. Surv. Ind.* 4: 217 – 218.
- Sharma, K.K. & Borthakur, S.K. 2009. A checklist of angiospermic plants of Manas National Park in Assam, India. *Pleione* 3(2): 190 – 200.
- Sharma, S.K. & Saikia, M. 2010. Utilization of wetland resources by the rural people of Nagaon district, Assam. *Indian J. Trad. Knowl.* 9 (1): 145 – 151.
- Subramanayam, K. 1962. Aquatic angiosperm in India. *Bull. Bot. Surv. India.* 4 (1-4): 261 – 272.