

**SALVINIA MOLESTA MITCH. (SALVINIACEAE)- A FREE FLOATING
FERN-ALLIES NEW TO BANGLADESH**

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Abstract

Specimen of a free-floating fern-allies was collected from a pond. It was identified as *Salvinia molesta* Mitch. following a detail scientific study, commonly known as Water Spangle or Kariba Weed. This is the first record of the species in Bangladesh. An illustrated account together with the taxonomy and distribution of the species has been provided in the paper.

Salvinia cucullata Roxb. ex Bory and *S. natans* (L.) All. are wide spread in the water bodies of Bangladesh. An exotic species *S. auriculata* Aubl. was added to this list as a new report from Bangladesh (Hadiuzzaman and Khondker 1993). Recently the authors while visiting water bodies in the National Botanical Garden, Mirpur have come across the occurrence of another different taxa of this genus which has been collected, studied and identified as *Salvinia molesta* Mitch. commonly known as Water Spangle or Kariba Weed (Jones 1987). The species is further confirmed with the reports of Mitchell (1972) and Dixit (1984). The species has not been recorded from Bangladesh territory by Prain (1903), Mirza and Rahman (1997), and not found in Kew collections made from Bangladesh by Wallich (Mirza 1999), Hooker and Thomson (Mirza *et al.* 2000) and Clarke (Mirza 2000).

The following description of *Salvinia molesta* is based on the specimen examined.

Salvinia molesta Mitch. Br. Fern Gaz. 10: 251, 1972

(Fig. 1)

A free floating fern-allies. Stem succulent with distinct nodes and internodes, hairy, robust. The whole plant is about 5 cm long. At each node two opposite pairs of upper photosynthetic sessile leaves and a stalked submerged leaf present. Upper surface of the photosynthetic leaves densely papillate; papillae multicellular, with a distinct multiseriate stalk having four uniseriate colourless appendages whose tips are united with small cells. Lower surface of the leaves covered sparsely with uniseriate hairs. The submerged leaves distinctly stalked, dissected into several colorless filiform long root-like appendages. The appendages are covered with uniseriate multicellular hairs, each hair having a pointed tip cell. Sporocarps develop at the base of these submerged appendages. Microsporocarps covered with numerous hairs similar to those on the appendages. Each microsporocarp is filled with large number of stalked microsporangium. Macrosporocarp two, rarely three, globose containing 20-25 macrosporangia.

The species is widely distributed in areas of Botsowana, Kenya, South Africa, Zambia, Ceylon, Indonesia, Queensland, Western Australia and Brazil. It has also been found to be naturalized in Indian Botanic Garden, Howrah and adjoining districts of West Bengal and Kerala (Ghosh *et al.* 2004).

Notes: The possible cause of the entry of this species to Bangladesh may be that every year in winter large number of migratory birds come from different continents in these water bodies. These birds may have carried these exotic aquatic species with them either in the form of vegetative parts or spores which have thrived well in these water bodies.

Ecology: A free floating aquatic fern-allies.

Specimen examined: Dhaka: National Botanical Garden, Mirpur; Syed Hadiuzzaman and Moniruzzaman Khondker, 10 January, 2005

Colour

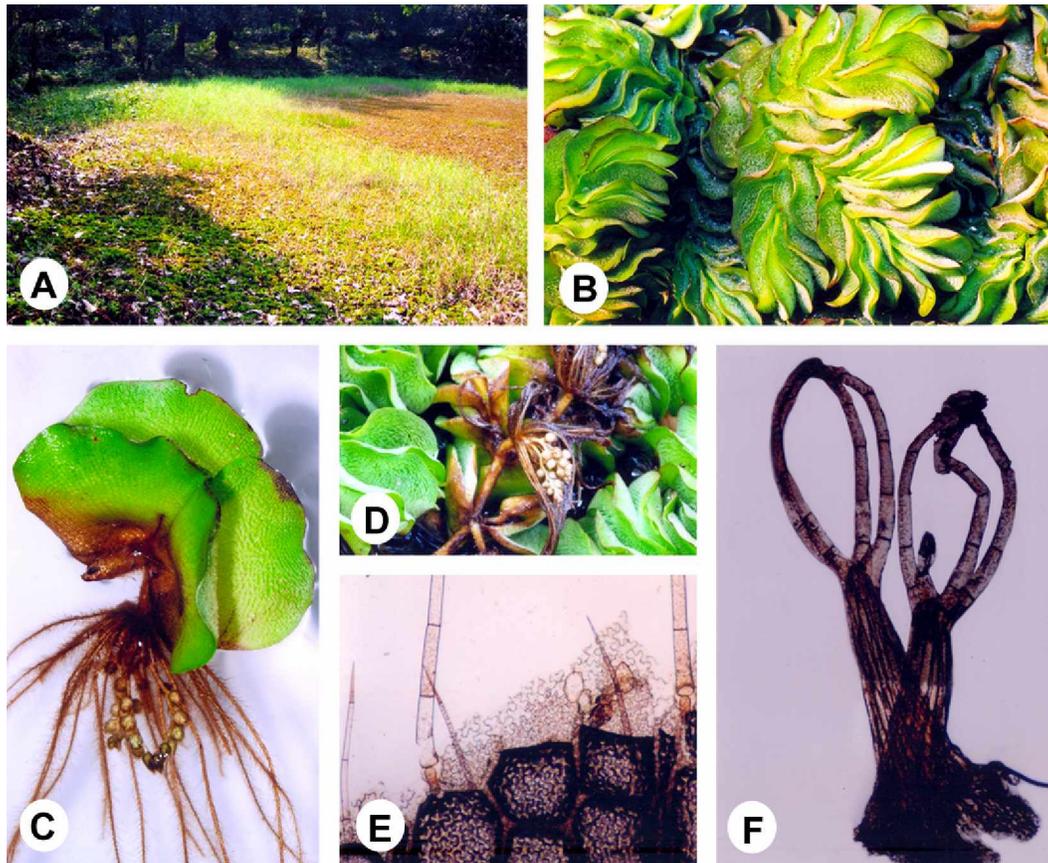


Fig. 1. *Salvinia molesta* Mitch. A. Habitat showing association with *S. cucullata*; B. habit of the plant; C. single node showing two pairs of upper sessile photosynthetic leaf and stalked submerged serrated leaf with microsporocarps; D. ventral view of the plant with distinct nodes and internodes showing microsporocarps; E. uniseriate hairs on the under surface of the photosynthetic leaf; F. hair of the upper surface of the photosynthetic leaf showing distinct 4 uniseriate apical appendages.

References

- Dixit, R.D. 1984. A census of Indian Pteridophytes. Botanical Survey of India, Delhi, 177 pp.
- Ghosh, S.R., B. Ghosh, A. Biswas and R.K. Ghosh. 2004. The Pteridophytic Flora of Eastern India. Bot. Surv. Kolkata, 591 pp.
- Hadiuzzaman, S. and M. Khondker. 1993. *Salvinia auriculata* Aublet- A new record of aquatic Pteridophyte from Bangladesh. Bangladesh J. Bot. 22(2): 229-231.
- Jones, D.L. 1987. Encyclopedia of Ferns. An Introduction to Ferns, their Structure, Biology, Economic Importance, Cultivation and Propagation. Timber Press, Portland, Oregon. 433 pp.

- Mirza, M.M. 1999. An index to Wallich collection of ferns and fern-allies from Bangladesh. Bangladesh J. Plant Taxon. **6**(2): 85-89.
- Mirza, M.M. 2000. An enumeration of C.B. Clarke's Pteridophytic collections from Bangladesh at Kew. Bangladesh J. Plant Taxon. **7**(2): 9-20.
- Mirza, M.M. and M.M Rahman. 1997. An annotated check list of fern and fern-allies of Bangladesh. Bangladesh J. Plant Taxon. **4**(2): 47-69.
- Mirza, M.M., S.H. Rashid, and A.B.M.E. Hossain. 2000. An enumeration of Hooker and Thomson's Pteridophytic collections from Bangladesh territory, preserved at Kew. Bangladesh J. Life Sci. **2**(1&2): 23-34.
- Mitchell, D.S. 1972. The Kariba weed; *Salvinia molesta*. Brit. Fern Gaz. **10**(5): 251-252.
- Prain, D. 1903. Bengal plants. 2:1237-1270. (Indian reprint 1981). Bishen Singh Mahendrapal Singh, Dehra Dun.

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