Limnocharis flava (L.) Buchenau (Alismataceae) – a little known and troublesome weed in Andaman Islands

During the course of a field study in the Andaman Islands, we came across a common water plant in and around Port Blair, growing in wet, waterlogged, exposed lands and rice fields. Later on, it was identified as *Limnocharis flava* (L.) Buchenau, commonly known as ‘water cabbage’. It is a native of tropical America.

In India, the occurrence of this noxious aquatic weed was first reported from Kerala. The earliest record of its introduction in the east dates back to 1866, when it was recorded to have been cultivated in the Botanic Garden at Bogor. In 1870, it was reported from banks of river Tjiluwung near Jakarta, which flows through the Botanic Garden at Bogor. It was introduced in Thailand in 1909, from where it invaded Southern Burma. Much before, it got established in Eastern Asia. In 1898 it was introduced in Sri Lanka as an ornamental in the Botanic Gardens, ‘Pera Deniya’. By 1932–36, the species got almost naturalized in Sri Lanka and became a serious pest of rice fields that paddy cultivation in some areas of Sri Lanka had to be entirely abandoned.

The probable cause of its occurrence in Kerala is because of import of rice from South East Asian countries like Myanmar, Thailand and Sri Lanka. In the Andaman and Nicobar Islands, rice is cultivated in an area of 12,000 ha (ref. 4). The rice cultivated in the Bay islands does not fulfill the requirements of the ever-increasing population and hence much of the rice is imported from Indian mainland, mainly from peninsular India, where *L. flava* has already become a pest of the rice fields. It is quite possible that seeds of this obnoxious weed may have travelled along with rice. Today the species has become wild in the Andaman Islands and may even become a serious threat to paddy cultivation in the Islands, if no measures are taken to eradicate this alien weed.

The plant mainly propagates by its seeds; a single fruit produces 1000 seeds and single plant produces about 1,000,000 seeds per year. It flowers throughout the year. The seeds are generally dispersed by mud sticking onto the feet of birds, animals, man and agricultural implements. The weed clogs irrigation tanks, channels and drainage ditches resulting in poor drainage, making lower regions of the cultivated tracks unsuitable for farming. It also obstructs the flow of water from paddy fields during heavy rainfall, resulting in damage to crops by submergence.

The simple and effective method of eradication is mechanical removal of the plants. Pulling out the entire plant, drying the rhizomes, fruits and seeds and burning them is effective. Since adverse problems have not yet appeared, repeated weeding and monitoring the paddy fields at brief intervals could be helpful to eradicate this alien weed. A brief description of this plant is given below.


Perennial erect herbs, up to 60 cm tall. Leaves in rosettes, broadly ovate, c. 14 × 10 cm, apiculate at apex, cordate and sheathing at base. Petioles thick, tri-

Figure 1. Invasion of *Limnocharis flava* (L.) Buchenau in paddy field.
Piper sarmentosum Roxb. – An addition to the flora of Andaman Islands

Piper L. is one of the well-represented genera with about 2000 species\(^1\), distributed along the tropical and subtropical belt of the Old World and the New World. However, the genus is rather poorly represented among the tropical islands of Andaman and Nicobar in the Bay of Bengal. Vasudeva Rao\(^2\) has reported six species from these islands, viz. Piper betle L., Piper longum L., P. minutum Bl., Piper pedicellatum Wall. ex DC., Piper ribesoides Wall. and P. sumatranum C. DC. However, P. sumatranum C. DC. has been merged with P. ribesoides Wall. According to current information, there are only six species which include the present addition, occurring in the Andaman and Nicobar Islands.

The insular tropical rainforests occurring on the islands of Andaman and Nicobar have remarkable importance in the study of phytogeography and centre of origin of popular cultivars. The apparent wild occurrence of certain cultivated species like coconut trees and betel vines in the Andaman and Nicobar Islands, suggests that these islands may perhaps be one of the probable centres of origin of these species. The wild occurrence of betel vines was first reported by Kurz\(^3\) from the Great Nicobar Island. Recently, Sreekumar and Ellis\(^4\) reported three different wild forms of betel vines from these islands.

While exploring the South Andaman Islands under the ‘Flora India’ project of the Botanical Survey of India, one of the authors had collected some interesting specimens of a Piper species from the North Bay region of Mount Harriet hills. The specimens were apparently similar to P. longum, one of the well-known wild Piper species of the Indian subcontinent, popularly known as the ‘long pepper’. Critical studies revealed that the specimens are identical to P. sarmentosum Roxb., a species occurring in Northeast India, South China and Malaysia. The specimens were later sent to Leiden and identified as P. sarmentosum Roxb. A perusal of the literature and herbaria studies revealed that P. sarmentosum Roxb. has not been recorded earlier from the Andaman and Nicobar Islands until the recent collections from the North Bay.

Morphological features of P. sarmentosum Roxb. are similar to those of P. longum L. There are some similarities, especially in fruit characters with P. hapatium B. Ham., an endemic species occurring in Peninsular India. However, P. sarmentosum Roxb. can be easily distinguished from these species by its procumbent fruit-bearing branches with large, stout, sweet fruits on maturity (Figure 1). The sweet taste of the fruit is similar to the mature ripened fruits of Elaeocarpus serratus L.