

# Diversity of the family Convolvulaceae in Tripura district

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Received: June 6, 2016

Accepted: July 10, 2016

Published: September 28, 2016

## ABSTRACT

One of the grand tasks of current taxonomy is to prepare a checklist of plants of the globe. This paper is based on the collection of angiosperm flora in family Convolvulaceae in particular between 2014 and 2015. The present paper reports 35 species under 9 genera of Convolvulaceae from Tripura district. Ipomoea is the largest genus with 18 species followed by Merremia with 4 species, Convolvulus and Argyreia with 3 species of the family Convolvulaceae. The family comprises annual and perennial, prostrate, twinning and trailing herbs. Moreover, 6 taxa were found to be shrubs.

**Key words:** Argyreia, Convolvulaceae, globe, Tripura district, twinning.

Documentation of the species is a very important aspect in the field of taxonomy as well as for further scientific research. Tripura is one of the smallest districts of West Bengal which is floristically very rich. The Convolvulaceae have a cosmopolitan distribution but 90% of the species can be found in the tropics. The genus Convolvulus is present around the Mediterranean basin. Members of the family are well known as showy garden plants (e.g. morning glory) and as troublesome weeds (e.g. bindweed). It is known commonly as the bindweed or morning glory family, is a family of 12 tribes, 60 genera and more than 1,650 species of mostly herbaceous vines, but also trees, shrubs and herbs. All species propagate by seeds and some of them multiply vegetative parts. Convolvulaceae can be recognized by their funnel-shaped, radially symmetrical corolla; the floral formula for the family has five sepals, five fused petals, five epipetalous stamens (stamens fused to the petals), and a two-part syncarpous and superior gynoecium. The stems of these plants are usually winding, hence their Latin name (from convolvere, "to wind"). The leaves are simple and alternate, without stipules. The fruit can be a capsule, berry, or nut, all containing only two seeds per one locule (one ovule/ovary). They are generally herbaceous or shrubby climbers and rarely erect. Plants are usually laticiferous and have leaves simple, flowers hypogynous, pentamerous, regular and bisexual. The

fruits are mostly loculicidal capsules, rarely fleshy or indehiscent (Lawrence, 1951). It is distributed all over the world having about 500 species (Gamble and Fischer, 1921-1935). Several Western and Indian botanists, naturalists, forayed of different parts of the state. Notable among them are Royle (Royal, 1833-1839; Mabberley 2008; Coventry, 1923- 1930; Blatter, 1923- 1930; Stewart, 1972; Sharma and Kachroo, 1981; Bhellum and Magotra, 2007). Members of Family Convolvulaceae are distributed in tropical, subtropical and temperate regions of the state.

## MATERIALS AND METHODS

The plant materials were procured from various places like Ambasa and Gandacherra and other places of Tripura district. The soil is alluvial type formed by the deposition of sediments of river Ganges. The soil is fertile and sandy loam in texture. The climate is Tropical monsoonal type with three distinct season, the cold (November to February), the hot (March to mid-June) and the rainy (mid-June to September), while October is regarded as a strictly transitional month. The diurnal range of temperature ranges between 13°C and 14.5°C in the cold and hot months, respectively. The field work carried out in different seasons encompassing every nook and corner of the district. The data pertaining to botanical name, habit, flowering and fruiting period and

occurrence were particularly noted during the study. While collecting the plant specimens field numbers were allotted and relevant data about the plant was recorded in the field book. The specimens were carried to the Laboratory in the polythene bags, rack-sacks or in plant press depending upon the length of trip and distance of the place of collection. The plants collected were pressed in the in wooden press wrapped in blotters. These specimens are changed frequently to reduce the discoloration of foliage and flowers and to avoid rotting. The dried specimens

were mounted on the Herbarium sheets. Printed labels were pasted and relevant data was entered. These specimens were identified with the help of taxonomic literature of family Convolvulaceae. The specimens were identified with the help of existing literature (Hooker, 1872- 1897; Gamble and Fischer, 1921-1935).

## RESULTS AND DISCUSSION

The present paper reports 36 species under 9 genera of Convolvulaceae from Tripura district.

**Table 1. Enumeration of Convolvulaceae taxa**

Sl.No	Plant Name	HABIT
1.	<i>Argyreia sericea</i> Dalz.	Silky hairy twinning herb
2.	<i>Argyreia strigosa</i> (Roth) Roberts.	Climbing herb
3.	<i>Convolvulus prostrates</i> Forsk.	Prostrate herb
4.	<i>Convolvulus rottlerianus</i> Choisy.	Erect herb
5.	<i>Evolvus alsinoides</i> (L.) L.	Trailing or ascending herb
6.	<i>Ipomoea aquatic</i> Forsk.	Twinning or Prostrate herb
7.	<i>Ipomoea batata</i> (L.) Lamk.	Creeping or twining herb
8.	<i>Ipomoea cairica</i> (L.) Sweet.	Twinning herb
9.	<i>Ipomoea cornea</i> Jacq.	Stragglng or scandant shrub
10.	<i>Ipomoea dichroa</i> (Roem. and Schult)	Twinning herb
11.	<i>Ipomoea eriocarpa</i> R.Br.	Hispid twinning herb
12.	<i>Ipomoea hederifolia</i> L.	Glabrous twinning herb
13.	<i>Ipomoea illusris</i> (Clarke) Prain.	Erect woody twinning herb
14.	<i>Ipomoea nil</i> (L.) Roth.	Twinning herb
15.	<i>Ipomoea obscura</i> (L.) Ker.	Twinning herb
16.	<i>Ipomoea pres-tigridis</i> L.	Twinning or trailing herb
17.	<i>Ipomoea quamoclit</i> L.	Twinning herb
18.	<i>Ipomoea sepiaria</i> Koen. ex Roxb.	Twinning herb
19.	<i>Ipomoea sindica</i> Stapf.	Trailing, Hirsute herb
20.	<i>Ipomoea sinensis</i> (Desr.)	Twinning herb
21.	<i>Ipomoea triloba</i> L.	Twinning herb
22.	<i>Ipomoea turbinata</i> Lagasca, Gen..	Twinning herb
23.	<i>Merremia aegyptica</i> (L.) Urb.	Twinning herb
24.	<i>Merremia dissecta</i> (Jacq.) Hall.	Twinning herb
25.	<i>Merremia emarginata</i> (Burm. F.) Hall	Prostrate herb
26.	<i>Operculina turpethum</i> (L.) S. Manso.	Twinning herb
27.	<i>Porana paniculata</i> Roxb.	Twinning shrub
28.	<i>Rivea hypocrateriformis</i> (Desr.)	twinning shrub
29.	<i>Rivea ornata</i> Choisy.	Twinning shrub
30.	<i>Cuscuta chinensis</i> Lamk.	Parasitic herb
31.	<i>Hewittia sublobata</i> (L.F.) O. Ktze.	Twinning or Prostrate herb
32.	<i>Argereia nervosa</i>	Perennial climbing vine
33.	<i>Convolvulus microphyllus</i> Sieb. ex Spreng.	procumbent/prostrate herb
35.	<i>Ipomoea sepiaria</i> Koenig Ex. Roxb.	climber
36.	<i>Merremia vitifolia</i> (Burm. fil.) Hall. fil.	Twining shrubs

**Table 2. Floristic Biodiversity of Genus and Species**

SNo.	No. of Genus	No. of spp.
1.	Argyreia	3
2	Convolvulus	3
3	Evolvus	1
4	Ipomoea	18
5	Merremia	4
6	Rivea	2
7	Hewittia	1
8	Cuscuta	1
9	Porana	1

Ipomoea is the largest genus with 18 species followed by Merremia with 4 species, Convolvulus and Argyreia with 3 species of the family Convolvulaceae (Table 1 and 2). The family comprises annual and perennial, prostrate, twinning and trailing herbs. While 6 taxa are shrubs. Most of the species are climbers except a few suffruticose shrubs. Ipomoea in the world varies from 600 to 700 species (Austin and Huaman, 1996). All these species have been distinguished on the basis of habit, habitat, and morphology of stems, leaves, inflorescence, pedicel, corolla, capsule and seeds. Ipomoea quamoclit normally reported from all the tropical areas but it has hitherto been reported from the temperate region of Kashmir Himalayas which can easily be recognised by its finely dissected leaves. Sharma and Kachroo (1981) reported six species and a subspecies of *Ipomoea* from district Jammu of this state, namely *Ipomoea alba*, *I. Carnea ssp fistulosa*, *I. iriocarpa (I. hispidus)*, *I. turbinata (I. muricata)*, *I. nil* and *I. pestigridis*. Swami and Gupta (1998) have reported five species and a subspecies of *Ipomoea cairica*, *I. carnea ssp. I. fistulosa*, *I. I. purpurea*, *I. nil* and *I. turbinata*. In India the 60 species reported account for 10 % of the world *Ipomoea*.

## CONCLUSION

Further exploration should be needed to evaluate the intrinsic ecological values of the local flora and to incorporate characteristics of species composition with ecological functions will provide a baseline for planning and proper conservation measures to safeguard phyto-diversity which is facing ever growing biotic stress. The significance of such field research is the detection of novel

additions to a floristic region, which subsequently improves our understanding of plant biogeography and species diversity.

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