

Family -Alismataceae

**Identifying characteristics**

1. Aquatic or marshy herbs.
2. Inflorescence on scape.
3. Flower unisexual or bisexual.
4. Perianths 6 in 2 whorls, outer sepaloid.
5. Stamens 6 to many.
6. Carpels few to many, apocarpous.
7. Fruits are etaerio of achene.

**Floral formula**

$$\oplus \underset{\ominus}{\text{P}}_{3+3} \text{A}_{6-\alpha} \underline{\text{G}}_{3-\alpha}$$

Common characteristics	Exceptions
<b>Vegetative characteristics</b>	
<b>Plant.</b> Annual or perennial, aquatic or marshy, erect herbs, with usually a stought rhizome.	
<b>Leaves.</b> Generally radical or clustered at the nodes, simple with parallel venation, entire with long petioles, sagittate or hastate.	Venation reticulate – <i>Sagittaria guayanaensis</i> .
<b>Reproductive characteristics</b>	
<b>Inflorescence.</b> Panicle or raceme or cymose umbel on scape.	
<b>Flower.</b> Actinomorphic, bisexual, bracteate, trimerous and hypogynous.	Unisexual – <i>Sagittaria</i> . Polygamous – <i>Limnophyton</i> .
<b>Perianth.</b> Tepals 6 (3+3), free, outer sepaloid and inner petaloid, imbricate.	
<b>Androecium.</b> Stamens 6-many, free.	Stamens numerous – <i>Sagittaria</i> .
<b>Gynoecium.</b> Carpel 3 to 6 or more, apocarpous, ovary superior, 1-celled with 1 to many basal anatropous ovules on marginal or superficial ( <i>Butomus</i> ) placentation.	Carpel 3 – <i>Wisneria</i> ; Carpel about 18 in 1 whorl – <i>Sagittaria</i> . Carpel numerous – <i>Sagittaria</i> , <i>Ranalisma</i> .
<b>Fruits.</b> Etaerio of achene.	
<b>Seeds.</b> Minute, exalbuminous (non-endospermic) with straight, curved or horse-shoe shaped embryo.	

**Distribution of Alismaceae:**

Alismaceae or the sagittaria family having about 17 genera with over 80 species having a very wide range of distribution, the sub-family Butamoideae is distributed in the temperate and tropical regions of the world.

The sub-family Alismioideae extends from Artie to tropical regions of the earth inducing Australia, Indo-Malaya, Africa, Madagascar, and California. The members are mostly distributed in fresh-water swamps and streams.

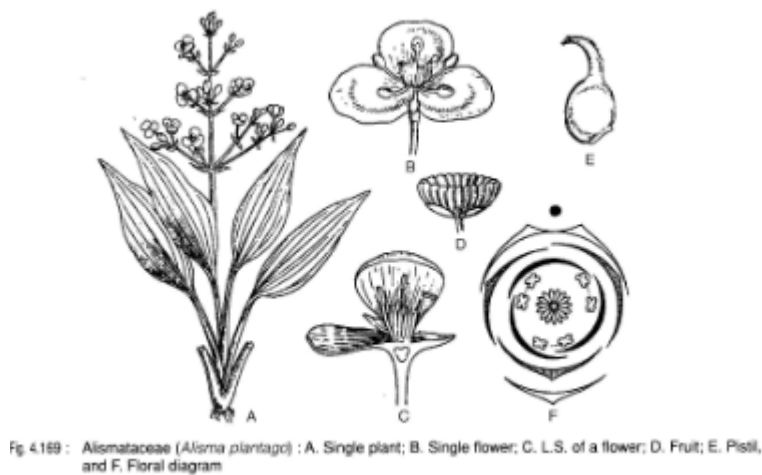
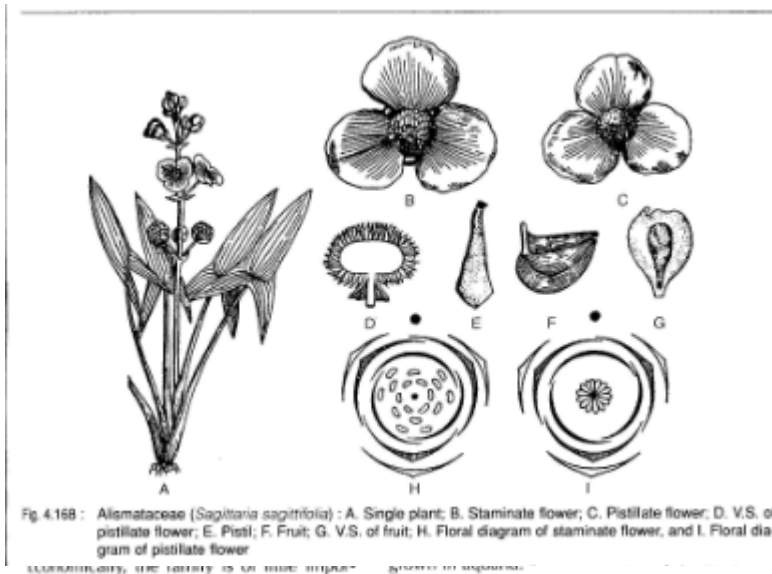
**Economic Importance of Alismaceae:**




## 1. Food:

Most of the genera provide food for wild life. The tubers of *Alisma plantago*, roots of *Sagittaria latifolia* (N. America) and corms of *Sagittaria sagittifolia* (China, Japan) are edible.

## 2. Ornamental:

*Sagittaria latifolia* and *S. subulata* are grown in aquaria. Many species of *Alisma*, *Echinodorus* and *Sagittaria* are cultivated as decorative plants.



<p>Alisma ptantago</p> 		
	<p>Butomopsis lanceolata</p>	<p>Limnophyton sp</p>

### Affinities of Alismaceae:

The family Alismaceae has been reckoned as one of the most primitive families of Monocotyledons in the scale of evolution and has been consequently placed first. Engler and Rendle placed it after Pandanales in the second series of Helobieae. The primitiveness of the family is marked in free carpels, numerous stamens and hypogynous flowers. Alismaceae resembles Ranunculaceae (hypogynous flowers, free sepals and petals, numerous free stamens and carpels and also fruit-bearing of achenes or follicles) and Commelinaceae but can be distinguished from them by its aquatic habit, form of inflorescence and two whorls of perianth. It also resembles Nymphaeaceae in having superficial placentation; but further affinity is difficult to establish.

Alismaceae, though a monocotyledonous family it bears remarkable affinity with Ranunculaceae and Nymphaeaceae in general construction of flower; this has been proved in the genus *Ranalisma* (an Indo-Malayan Alismaceae) which bears combination of character of Alismaceae and Ranunculaceae. This possibly supports the origin of Alismaceae from Ranunculaceae or Nymphaeaceae.

Cheadle (1942) found that vessels with simple or porous perforation were the rule in Alismaceae, an anatomical condition more advanced than that found in most other families of the order.

Dahlgren (1983) and Thorne (1983) in their classification made a super-order Alismatiflorae and order Alismales in which they included family Alismaceae.

### Common plants of the family:

1. *Alisma plantago*— water plantain – an aquatic plant with hermaphrodite flowers.
2. *Limnophyton obtusifolium*-aquatic plant with white unisexual flowers.
3. *Sagittaria sagittifolia* – Arrow head-a tank herb with sagittate leaves and unisexual flowers.