

ARROWROOT

Thalia spp.

by John R. Cassani

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The family Marantaceae, also known commonly as the arrowroot family has approximately 26 genera and over 400 species. All of the species in this family are tropical with the exception of *Thalia*. Two species of *Thalia* occur in North America, they are *Thalia geniculata* L. sometimes referred to as arrowroot, arrowroot lily or swamp lily and *Thalia dealbata* Roscoe, commonly known as powdery-*Thalia*. The name arrowroot is a poor designation for *Thalia*. The tropical plant *Maranta arundinacea* furnishes the true arrowroot starch for which it is cultivated and is more properly recognized as arrowroot. *Zamia floridana* a plant unrelated to *Thalia* is referred to as Florida arrowroot. Hence, the best way to commonly refer to *Thalia* is just "Thalia".

T. geniculata has a rather limited distribution in North America occurring most commonly in South (subtropical) Florida and only rarely in North Florida and South Carolina. The southern range of *T. geniculata* extends through the Greater Antilles to Argentina.

T. dealbata is distributed along the coastal plain from South Carolina to Texas, Oklahoma and northward to southeastern Missouri where it is designated as an endangered species.

Both *Thalia* species are perennial herbs arising from thick rhizomes. The starchy rootstock is supposedly edible and when boiled turns a coral pink on the inside, but it is

reported to have a swampy flavor. Remember this next time you forget your lunch out on the airboat.

The most striking characteristic of *Thalia* is the large lanceolate shaped leaves up to 0.8 meters long, which are the largest of any native plant other than the palms. A good picture of *Thalia* is on the cover of the March 1983 "Aquatics" in a typical swamp habitat of South Florida. *T. geniculata* is the tallest of the two species growing up to 3.5 meters. The flowers of both species are born on a long loosely branched panicle. Flowers occur in pairs, are bisexual and have three distinct purple petals subtended by two downy mostly purplish bracts. The flowers are arranged in intervals along the rachis in a zig-zag or bent-knee pattern, hence the name *geniculata* derived from the word for knee.

T. dealbata can be separated from *T. geniculata* by the presence of a white powdery substance on the leaves. The specific name *dealbata* means white-washed. Also, the flowers of *T. dealbata* are more crowded together and are shorter and broader than those of *T. geniculata*. *Thalia* occurs in a variety of wetland habitats including swamps, marshes, edges of ponds, lakes, and rivers as well as roadside ditches. *Thalia* can often be found growing in a transitional zone circling the outer margin of the pond formed in the center of many cypress domes. This zonation is especially evident when

viewed from the air or aerial photographs. In other marsh type environments a stand of *Thalia* may cover several acres. Emergent plants found growing in association with *Thalia* are pickerelweed (*Pontederia lanceolata*) and *Sagittaria* spp., among others. In Florida *Thalia* has been reported growing in the littoral zone of Lake Okeechobee, along the floodplain of the Kissimmee River and the St. Johns River System. *T. geniculata* is also common in ditches through South Florida where it is occasionally controlled. The extreme height that this herb attains in mid to late summer can occasionally present problems along roads where the view of oncoming traffic can be obscured, although I have seen this situation only once.

I have observed *T. geniculata* at several sites in Lee County for several years. Of interest, although not understood very well, is the competitive relationship *Thalia* exhibits with associated plants. Water level fluctuations play a large part in these inter-species relationships. During particularly dry winter and spring seasons in South Florida, the vegetative portion of the plant will become extremely dry, breaking down and almost completely disappear from the site. At this time other plant species more tolerant to dry conditions establish themselves. As the wet season starts *Thalia* regrowth from underground rhizomes begins and dominance is re-established by June or July. During a wet spring season, much of the vegetative portions remain green and regrowth begins earlier. Figure 1 exemplifies some of these transitional periods.

Flowering usually starts in June or July depending on the condition of the vegetative portion of the plant as determined by a variety of environmental factors, the most important seems to be the amount

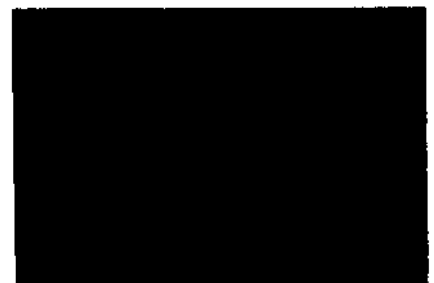
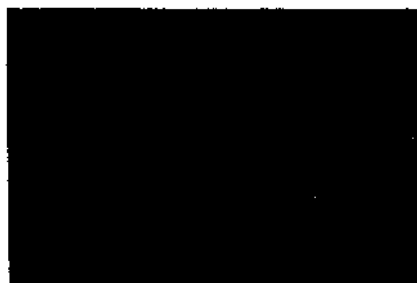


Fig. 1. From left to right is *Thalia* regrowth from winter die-back, summer growth and winter-spring transition at the same site.

of rainfall. Above normal rainfall in the spring usually initiates early flowering. Flowering activity and plant height peak during August and September, declining noticeably in December and January.

The fauna associated with *T. geniculata* is diverse and an entire community of insects, spiders and lower vertebrates are typically associated with this plant in some way. The flower portions of *T. geniculata* are the host of a small plume moth caterpillar and a variety of sucking bugs which lay their eggs in long rows on the flower petioles. A pyralid moth that rolls the leaf to provide a suitable micro-habitat is also evident dur-

ing the fall months. Nymphs of the sucking bugs also utilize this folded leaf micro-habitat in a sort of symbiotic relationship that benefits both species. Large argiope spiders among others attach their webs between panicles and keep many of the plant feeding insects from becoming over abundant. Green tree frogs (*Hyla cinerea*) are especially common in the *Thalia* community and can be seen drowsing during the day attached to the shady portion of a large *Thalia* leaf.

Conservation of the *Thalia* community as well as other wetland areas needs to be stressed especially in South Florida where ur-

ban sprawl and its negative effect on water resources is occurring at an unprecedented rate. It's not hard to realize that eliminating a stand of wetland plants through whatever means can also eliminate an entire assemblage of other organisms that cannot readapt as fast as wetlands are being altered or eliminated. The eventual impact of these consequences may be irreversible.

If you don't mind the occasional noisy retreat of a water snake or spider web in your face, a few hours with a camera and a pair of waders in a *Thalia* stand can be a fascinating experience. □

FAPMS CERTIFICATION PROGRAM

by Jim McGehee

The FAPMS has accepted Jim Brewer's suggestion for a Society sponsored training and certification program for aquatic plant management personnel. The program will not replace the State's EPA certification program but will offer more specific training on aquatic

plant management. Completion of the training, however, should be more than adequate preparation for passing the state test for certification. Participation will be on a strictly voluntary basis.

The program as it is presently planned will consist of two parts.

These are a correspondence type course with a training manual and tests, and a practical demonstration of elemental skills. The tests will be administered by the participants' supervisors.

The course will cover: (1) the basic principles of aquatic plants' interrelationship with the aquatic environment, (2) identification of common weed plants, (3) descriptions of the various methods of control, (4) selection of control methods, (5) practical use of control methods, (6) calibration of equipment, (7) laws and regulations, (8) safety. The practical demonstration will include: (1) boat handling skills, (2) emergency procedures, (3) proper biological, chemical, or mechanical control application, (4) maintenance, repair, and calibration of equipment. Upon satisfactory completion of the program the Society will issue a certificate and a cloth FAPMS certification patch.

President Carlton Layne has appointed Jim McGehee to act as coordinator for the development of the program. Jim is to have a preliminary outline of the program ready for the Board's review and approval at the next Board meeting scheduled for 3 August 1983. If you have any comments or suggestions or you would like to contribute to the development of the Society's training and certification program please contact:

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