

# Identification of Common Aquatic Weeds<sup>1</sup>

Lyle W. Weldon and R. D. Blackburn<sup>2</sup>

A problem to workers in weed control is the proper identification of the problem species. Bulletins and other printed literature often deal with only control measures and not give an adequate description of the plants. Persons interested in the control of weeds must identify the plant involved before embarking on a control program.

The purpose of this article is to present the most troublesome species in picture form which a non-botanist can compare to identify his problem plant. It is anticipated that this will at least make possible a tentative identification until more professional assistance can be obtained.

The following texts were used freely throughout the article to obtain good, simple descriptions as aids in identifications:  
A MANUAL OF AQUATIC PLANTS. Norman C. Fassett. The University of Wisconsin Press. 405 pp. 1960.

AQUATIC PLANTS OF THE UNITED STATES. Walter Conrad Muenscher. Comstock Publishing Company. 374 pp. 1944.

GRAY'S MANUAL OF BOTANY. Merritt Lyndon Fernald. American Book Company. 1632 pp. 8th Ed. 1950.

A GUIDE AND KEY TO THE AQUATIC PLANTS OF THE SOUTHEASTERN UNITED STATES. Public Health Bulletin No. 286. 151 pp. 1944.

ALGAE IN WATER SUPPLIES. C. Melvin Palmer. Public Health Service Publication No. 657. 88 pp. 1959.

HOW TO KNOW THE FRESH-WATER ALGAE. G. W. Prescott. Wm. C. Brown Company. 211 pp. 1954.

<sup>1</sup> Cooperative investigations of the Crops Research Division, Agricultural Research Service, U. S. Department of Agriculture, the Corps of Engineers, Department of the Army, the Central and Southern Florida Flood Control District, and the Florida Agricultural Experiment Station.

<sup>2</sup> Research Agronomists, Crops Research Division, Agricultural Research Service, U. S. Department of Agriculture, Plantation Field Laboratory, Fort Lauderdale, Florida.

The authors would like to express their appreciation and acknowledge the assistance of J. W. Conner in photographing many of the plants.



FIGURE B

## WATER HYACINTH,

### *Eichhornia crassipes* (Mart.) Solms.

The water hyacinth is usually found floating in ponds, lakes, canals, and ditches of the southeastern United States but some plants occur in California. The plant often becomes rooted in mud where it can persist for rather prolonged periods under rather dry conditions. The plant spreads by production of vegetative offshoots and seed. The apparent leaves are long extended petioles. The flowers are showy and may be white, blue, or violet with all shades between. Figure A shows an irrigation ditch entirely covered with water hyacinth. Figure B is a close-up of the flower. Soon after flowering the stems curve over into the water as shown in the foreground of Figure C.

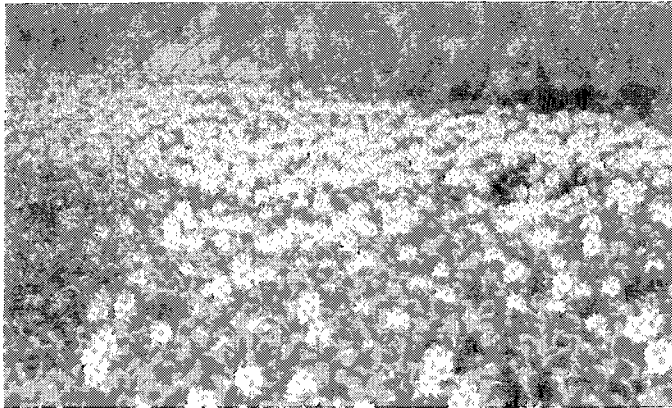


FIGURE A

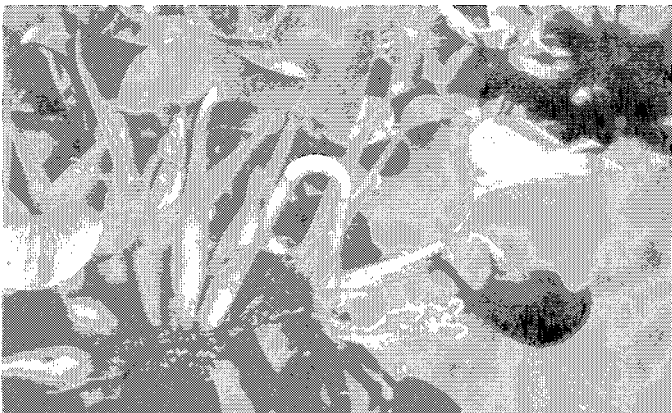
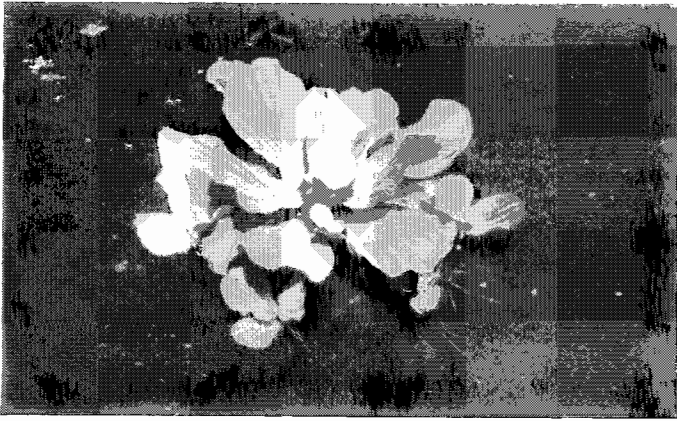


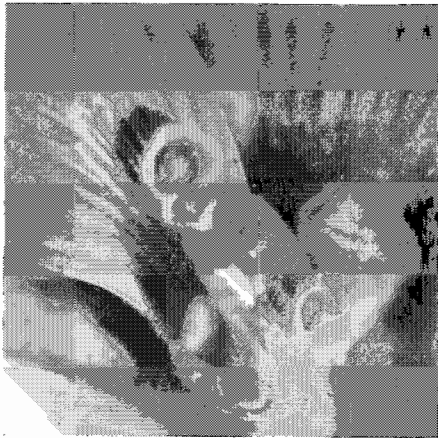
FIGURE C



A large canal covered with water lettuce.



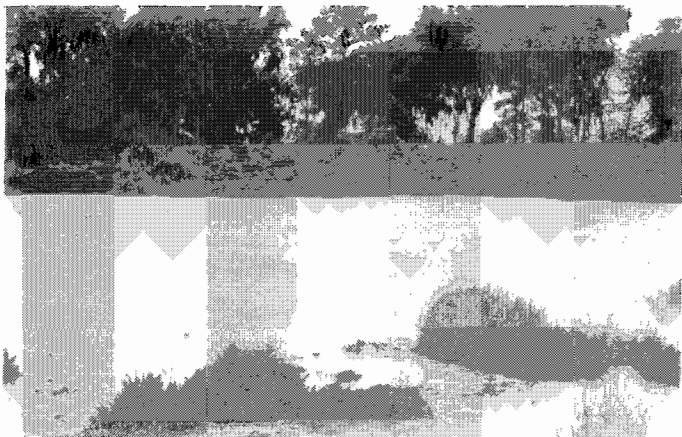
A mature water lettuce plant showing vegetative offshoots, which are connected to the mother plant by underwater rhizomes.



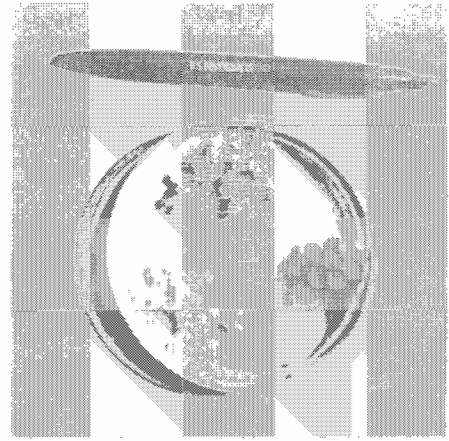
A close-up of the flowers, which are found in the middle or crown of the mature plants. The distinct venation of the leaves can also be seen.

## WATER LETTUCE, *Pistia stratiotes* L.

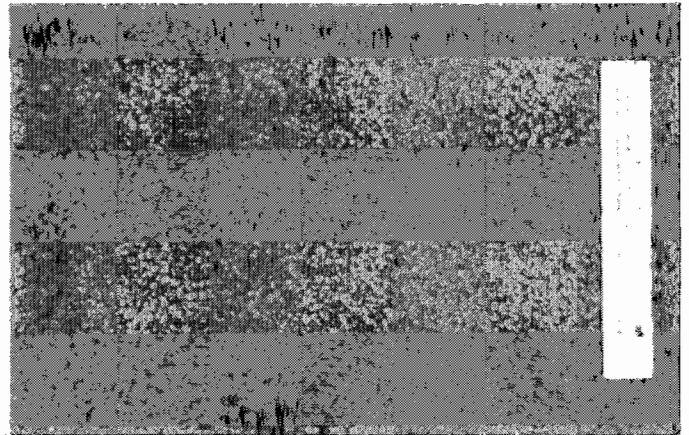
Water lettuce is a floating plant rarely found rooted in even moist mud. It usually does not form jams in canals as does water hyacinth largely because the underwater rhizomes are more easily broken. Even though the plant is known to produce a small amount of seed, the usual method of reproduction is by vegetative offshoots and underwater buds. The plant has long branching roots and is often used in conservatory and garden pools. The leaf is very distinctly veined and has a fuzzy surface that makes the plant very difficult to wet. Species of mosquitoes (*Mansonia* sp.) are often found in association with the plant.



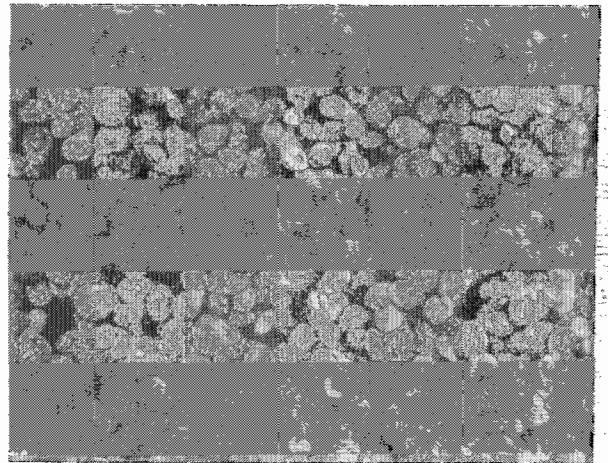
A pond covered with duckweed.



A comparison of two genera of duckweed and small *salvinia*. *Spirodela* is at the top, *lemna* at the left, and *salvinia* on the right side of the petri dish.



An overall view of *spirodela*.



A close-up view of *spirodela*.

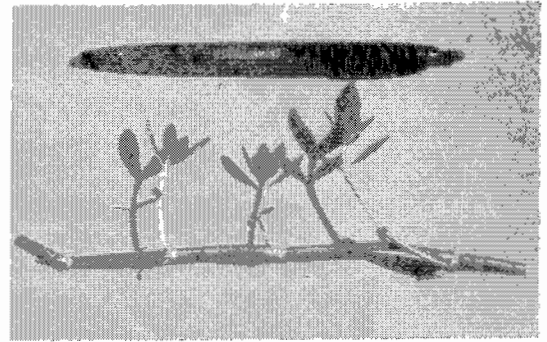
## DUCKWEED, *Lemnaceae*

The duckweed family has four genera *Spirodela* Schleid., *Lemna* L., *Wolffia* Horkel, and *Wolffiella* Hegelm. This group of plants can be regarded as the simplest of the flowering plants and some of them are the smallest. All are most often a problem in small ponds or lakes, where they float on the surface of the water or may lay on the moist mud. In ponds where duckweed is a severe problem a mat of millions of these small plants may develop several inches thick. The various genus and species are usually identified by the number of nerves or veins on the leaf and the number of rootlets.





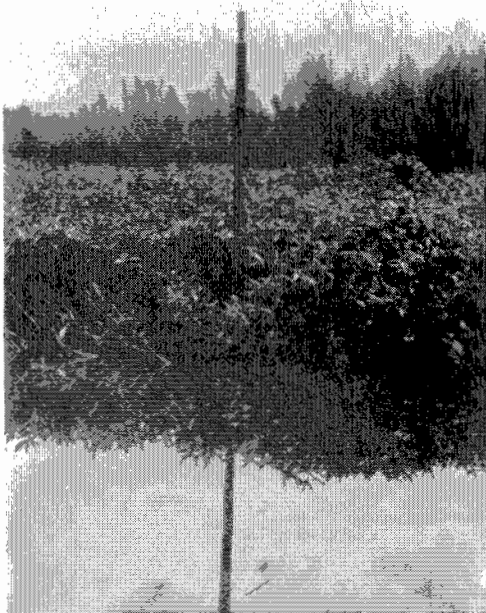
A large impoundment covered with floating and rooted-emersed alligatorweed.



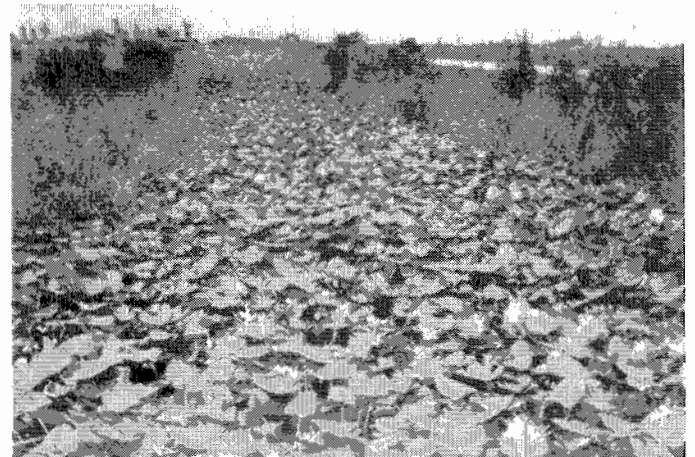
A lateral stem of alligatorweed showing the sprout production from each node.

## ALLIGATORWEED *Alternanthera philoxeroides* (Mart.) Griseb.

Alligatorweed is a vigorous growing plant well adapted to many habitats. It grows equally well free-floating, loosely attached, rooted-emersed, or on dry ground. The root structure varies considerably from one growth type to another, especially from floating to rooted in soil. Seed is rarely found, and most of the growth appears to be vegetative reproduction. The nodes generally have two buds, which may sprout and produce further growth. The plant is mostly located in the southeastern United States.



A healthy stand of alligatorweed growing along a shore line.



A drainage ditch infested with a dense stand of spatterdock.



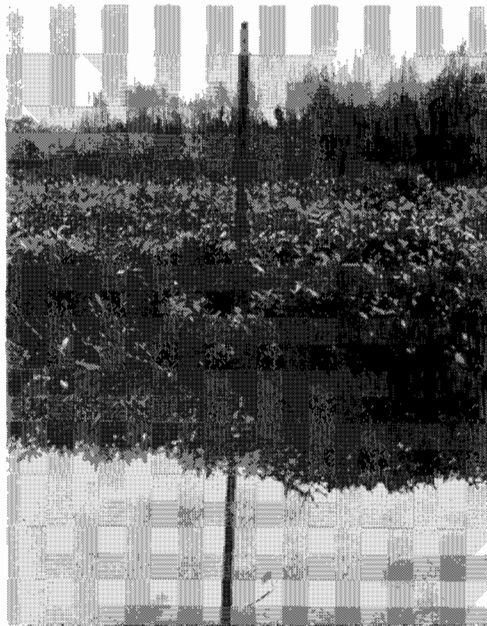
A closeup of alligatorweed. Note the round white seed head and the pronounced venation of the leaves.



A close-up of spatterdock. Note the distinct mid-rib and the manner in which the leaves stand mostly erect above the water surface.



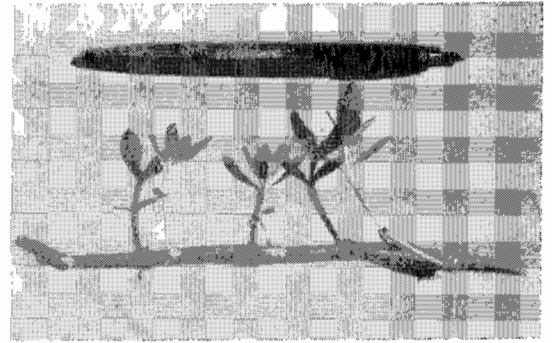
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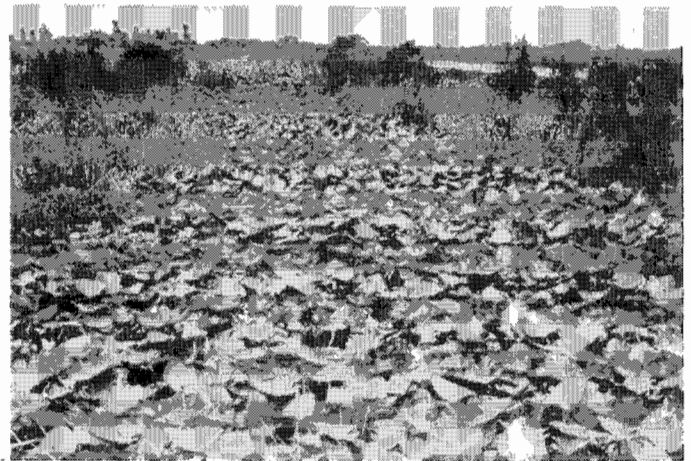
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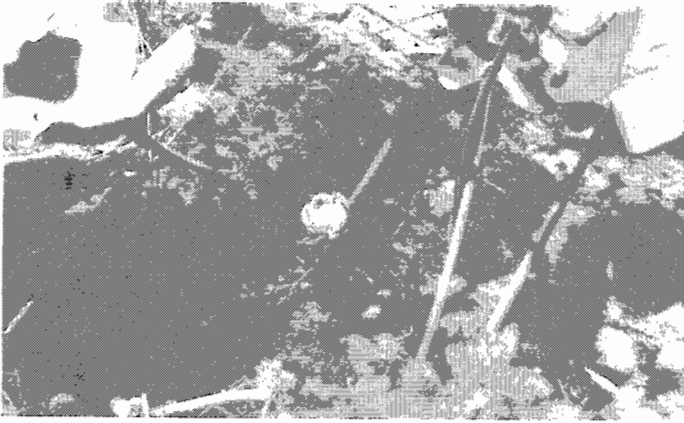


A drainage ditch infested with a dense stand of spatterdock.



A close-up of spatterdock. Note the distinct mid-rib and the manner in which the leaves stand mostly erect above the water surface.

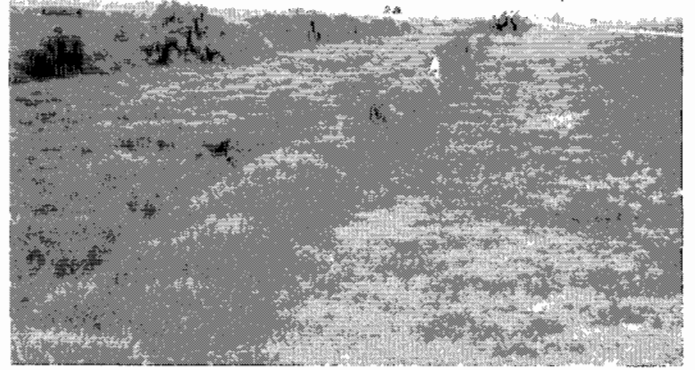




The spatterdock flower is shown in the center of the figure.

## SPATTERDOCK, *Nuphar advena* Ait.

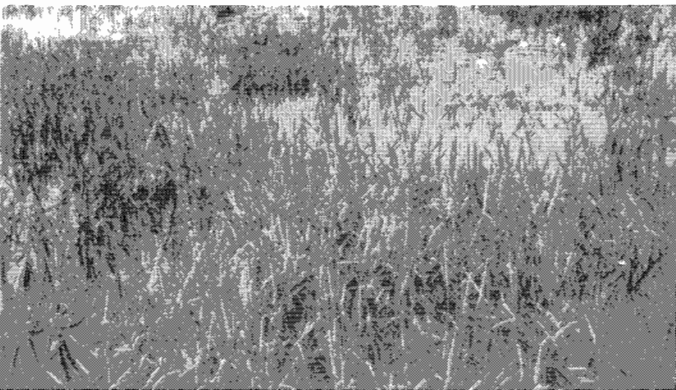
Spatterdock is often called yellow water lily but it is not as showy as the white water lily. There is a strong mid-rib arising from the top of the petiole and the veins come from the mid-rib rather than from the petiole as with the water lily. The leaves, which arise from a large, fleshy, creeping rootstock, may grow submersed or floating on the surface, but usually as shown in the above figure.



A drainage ditch entirely covered with torpedograss.



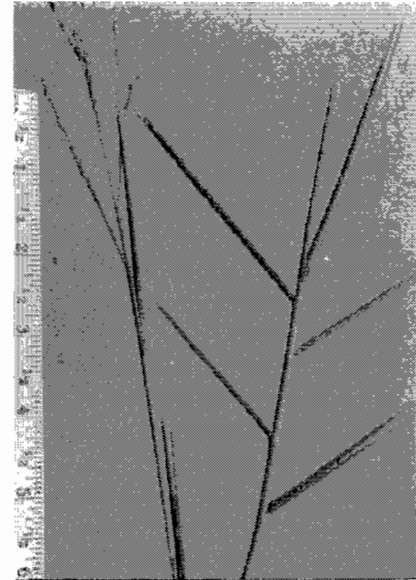
A pond with side encroachment of maidencane out into the water.



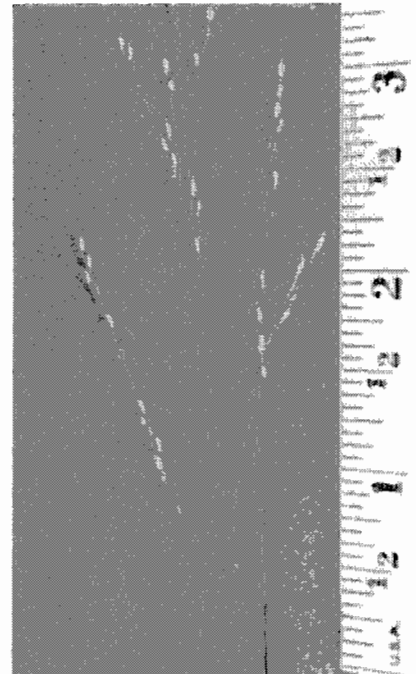
A stand of maidencane growing in water 4 feet deep.

## MAIDENCANE, *Panicum hemitomon* Schultes

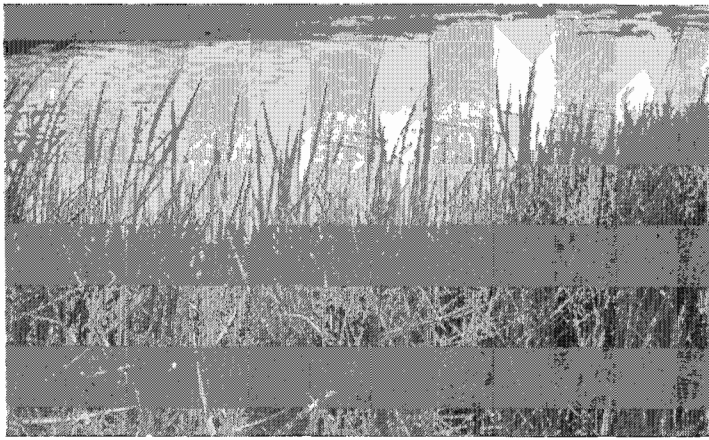
Maidencane grows in wet areas and in shallow water up to 6 feet deep. It occurs mostly in the Coastal Plain of the southeastern United States and is probably the most common species of the *Panicum*. The growth is from elongate rhizomes with a rather elongated leaf that is not as pointed or as coarse as that of torpedograss. It has a panicle-type seed head.



A close-up of the torpedograss.



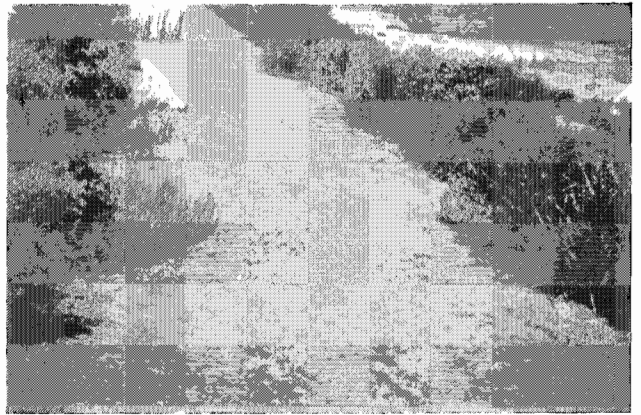
Torpedograss seed head slightly magnified.



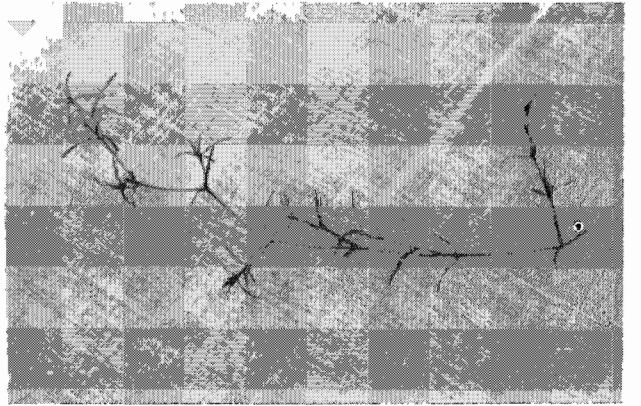
A ditchbank close-up of torpedograss showing the seed heads.

## TORPEDOGRASS, *Panicum repens* L.

The grass obtains its name from the large, sharp-pointed underground stems or rhizomes. The stems and leaves may grow 4 feet tall with sharp-pointed gray-green to blue-green leaves. The plant appears to grow equally well floating on water or growing on relatively dry ground. It is usually associated with irrigation and drainage ditches but has infested citrus groves in Florida.



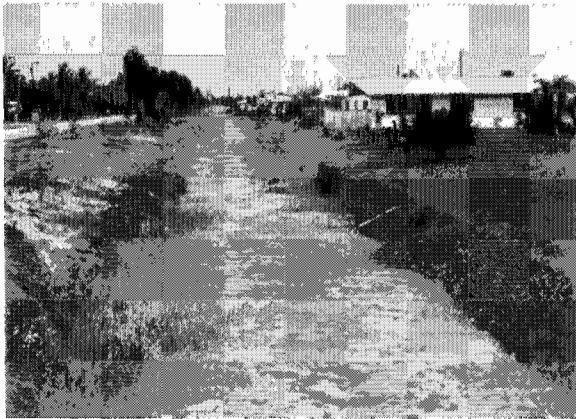
The above canal is completely clogged with submersed aquatics, among which are southern naiad, coontail, and bladderwort. Below is a close-up of southern naiad.



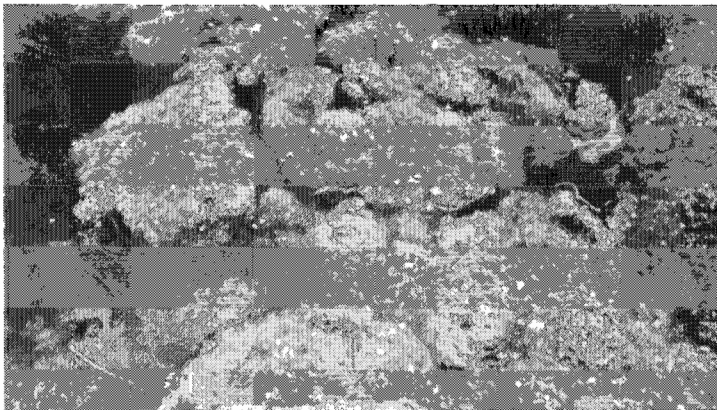
## SOUTHERN NAIAD,

## *Najas guadalupensis* (Spreng.) Morong.

Southern naiad is a submersed plant which grows rooted to the bottom of canals, ponds, and other slow-moving water. It has a strong branched stem with rather small leaves. A segment that breaks away will root upon contact with soil in another area.



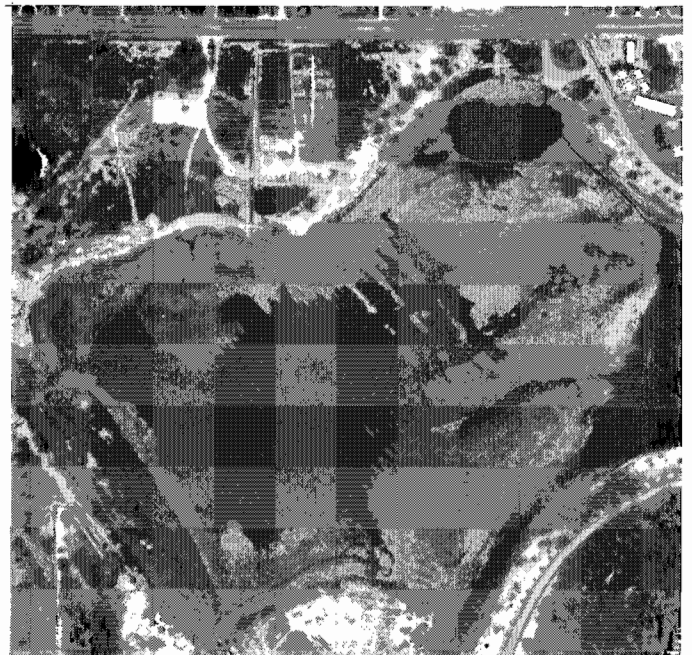
A canal covered with floating mats of pithophora algae.



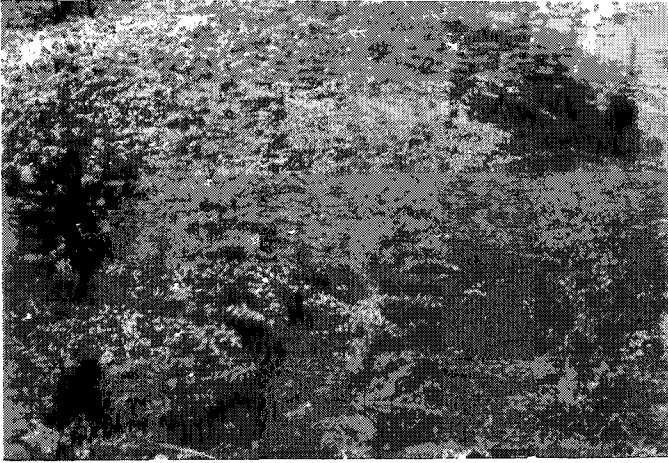
A close-up of a pithophora mat. There are a few duckweed plants floating on top of the pithophora.

## PITHOPHORA sp.

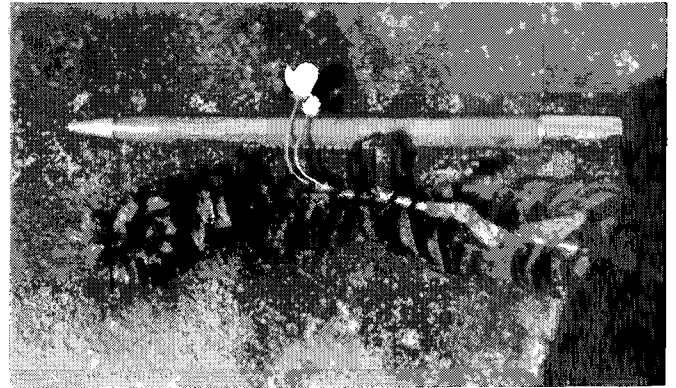
Pithophora is a typical branching filamentous green algae. Initial growth is often made as an attached algae, but as the growth becomes dense the mats break off and float. Viewed in water the mat often resembles a mass of wet wool.



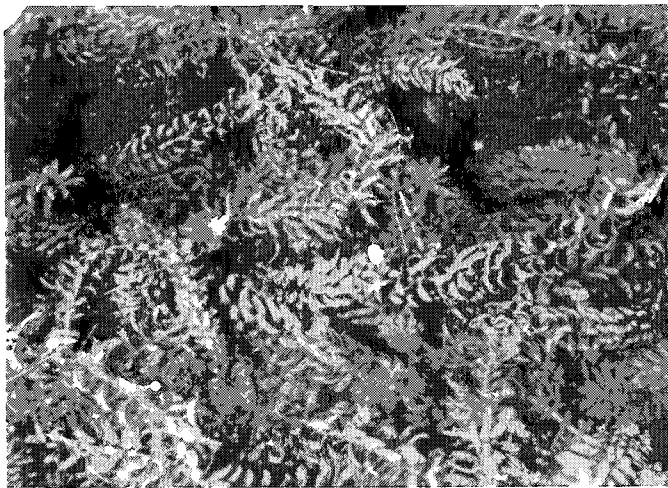
An aerial view of a lake infested with elodea. The light area in the lake is the plant growing at the water surface. Photograph by courtesy of Mr. E. L. Seabrook, Palm Beach Mosquito Control Department, West Palm Beach, Florida.



*A general view of an elodea infestation.*



*A close-up of an elodea flower showing two separate peduncles and flowers.*



*A close-up of elodea. Note the white flowers.*

## **ELODEA,**

### ***Elodea densa* (Planch.) Caspary**

Elodea is a perennial slender herb which has veinless 1-ribbed whorled or opposite leaves. The plant which is usually rooted on the bottom, is often used in fish aquariums. The white flowers are borne on the tip of a small peduncle which reaches the water surface.