

Spatterdock, American Lotus, Yellow Lotus, Water Chinquapin, *Grains à Volée* (*Nuphar* species), Sacred Lotus (*Nelumbo nucifera*)

**S**patterdock grows in open water along the edges of bayous, ponds, and lakes and produces alkaloids poisonous to grazers. Throughout its distribution in temperate areas of North America, Europe, and Asia, there are 10-12 species of spatterdock. Recent comparisons of spatterdock DNA samples suggest that there are probably eight species of *Nuphar* in North America.

Spatterdock leaves occur in three positions relative to the water surface: floating, submerged at the base of the plant, and (in some species) elevated out of the water. The large submerged leaves are thin like those of Divers. The flat, valentine-shaped, floating and raised leaf blades have shiny, waxed surfaces that shed water. Plant snorkeling (or *pressurized ventilation*) was first discovered in spatterdock leaves.

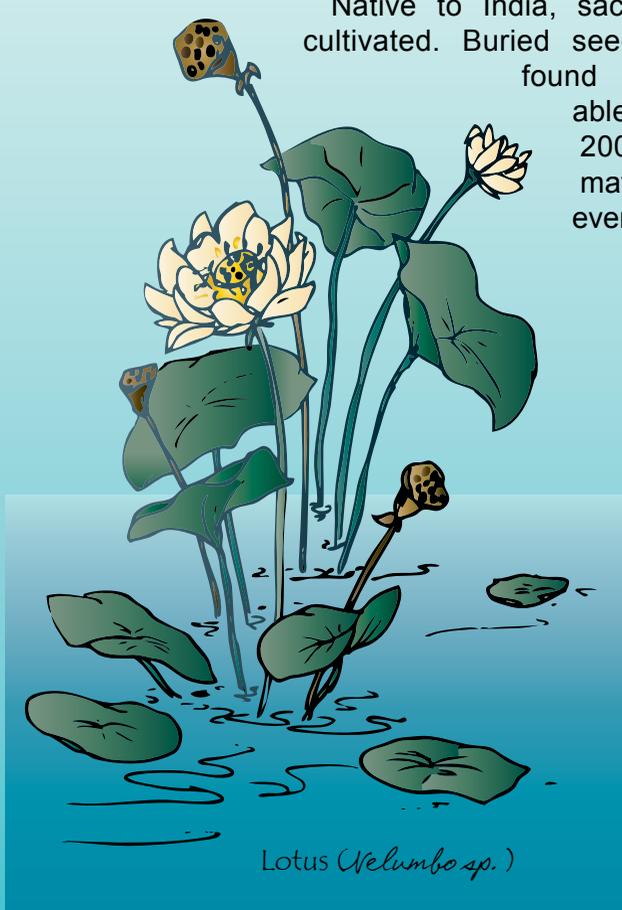
The single yellow spatterdock flowers reach above the water on peduncles that can be almost two meters (six feet) long. The center of each young flower contains a red-rimmed, greenish-yellow pod that resembles a bathroom shower head turned upward. Dozens of yellow, pollen-filled stamens surround the pod. The flowers are pollinated by several types of insects, after which, a many-seeded fruit develops above the surface of the water. As the seedpods mature and grow larger, they turn to the east and crook like a bishop's staff. By winter, the grape-sized seeds rattle inside the dark brown, woody pods and poke out of holes in the top.



*Grains à volée*, which means “flying seeds,” is the French name for spatterdock. Despite the name, the seeds are too heavy for wind to carry them. Perhaps the name refers to seeds flying in the faces of boaters who run into the ripe pods. The colonies of many thousands of plants amassed in lakes and quiet waters may be the remnants of abandoned Native American spatterdock farms. The nutty-flavored flesh inside the hard covered seeds is a nutritious food source.

The lemon-yellow flowers of spatterdock, and the pale pink flowers of sacred lotus are the largest and most spectacular of any water plant. Sacred lotus can heat its flowers to 30°C (86°F) for as long as four days, which can be as much as 20°C (36°F) higher than air temperature. Heating releases a scent from flowers that attracts insect pollinators. On the first morning, petals of the warmed flowers open slightly to expose the stigmas and tips of stamens. Pollinators may bring pollen from other flowers to cross-pollinate. That night the petals close, trapping the pollinators inside, and the stamens shed pollen into the bowl-shaped base of the flower to feed the pollinators. The next morning, the flower opens wider. Pollinators are freed, covered with pollen, to visit other flowers or to self-pollinate the same flower. The flower remains open that day, available for self- and cross-pollination of any unfertilized eggs. Seedpods develop above the water surface.

Native to India, sacred lotus is widely cultivated. Buried seeds of sacred lotus found in Manchuria were able to germinate after 200 years, and seeds may survive hundreds or even a thousand years.



Lotus (*Nelumbo* sp.)