

CABOMBA OR "FISH GRASS"

by H. C. D. de WIT

One of the most attractive aquarium plants is generally called "fish grass" (or also "fanwort"). This plant occurs wild in the eastern United States, as far north as New York but it seems that, actually, its natural home is not further north than the northeastern border of Virginia. Its occurrence beyond that boundary seems to be due to introduction by man.

If grown successfully, fish grass or *Cabomba caroliniana* is a most beautiful plant in the aquarium by its display of elegantly spreading garlands. *Cabomba* plants discharge much oxygen into the water which is another reason for its value as an aquarium plant. *Cabomba caroliniana* with its small white or yellowish flowers is the only North American species. In Central and South America, however, there are several more, all of them very valuable for the aquarist. It should be realized that *Cabomba* species are not among the easiest plants to keep.

The leaves are either opposite, in pairs, or arranged in whorls of three. They are finely bisected but if they are growing in shade or even if an abundant supply of light is not available, the leaves will be considerably smaller and coarser, and the plant loses much of its beauty. Figure 7 and 8 show the upper and lower surface of the terminal forks of the leaf which, somewhat enlarged, appear to have spiny edges.

Although *Cabombas* are rather

indifferent as regards the soil in which they are rooting, they require soft water, of a decidedly low mineral content, to thrive.

The small cup-shaped flowers are also charming. They resemble dwarf water-lilies which may have been one of the main reasons for placing them in the family of the water-lillies, *Nymphaeaceae*. Nowadays it is often felt that *Cabomba* ought to be accepted as representing a separate family, *Cabombaceae*, a view which is endorsed by the present author.

Flowering stems increase in size near the top and become spongy. They remain submersed but small floating leaves appear which are entire and widely differ in shape from the normal foliage (see figure 1, 2). In the axils of the upper leaves the stemmed flowers appear and are borne above the surface of the water. The three sepals (fig. 4) are greenish at first but assume the color of the three petals (fig. 3). The flower so appears to be six-leaved (fig. 1). In the flower two or three bristle-topped ovaries are present (fig. 5, 6).

A glistening drop of honey is often seen in the heart of the flower. Fig. 3 shows a petal: the dark "earlets" or auricles carry the minute glands secreting the nectar. After pollination has been effected the flowering stem curves and the flower closes. The closed flower (which sheds its petals and sepals only at a later stage) disappears

(Continued on Page 88)



Cabomba piauihyensis Gardner -

1: flowering stem, showing emersed and submersed leaves; 2: *C. piauihyensis* Gardn. f. *albida* Fass., the white-flowered Cuban form; 3: petal; 4: sepal; 5: stamens (one removed) and ovaries in a young flower; 6: ovary, opened to show the pendent ovules; 7, 8: leaf-tips, enlarged, upper and lower surface.

CABOMBA

(Continued from Page 86)

below the surface of the water where eventually the fruits may develop.

It is not difficult to raise Cabomba from seeds, but in practice it is much simpler to use four or five inches of a stem and make it produce roots by pressing it into the soil.

The figure accompanying this article shows Cabomba piauhyensis Gardn. It is perhaps the most beautiful of all Cabombas and occurs, it seems, in northern Brazil up to Cuba and El Salvador. The flowers are deep purple and yellow towards the center. A white or almost white (a slight purple tinge may be noticed) flowering form occurs in Cuba. The foliage of this form is finer than in the continental species.

As regards its systematic position there is a comparatively recent study by the late Norman C. Fassett, published in 1953. Fassett recognized purple Cabomba piauhyensis (and its white flowered Cuban form) as a well distinguished species. He referred also to a variety of Cabomba caroliniana which was first described as "var. pulcherrima" and proposed to raise this variety to the rank of a species, which ought to be called Cabomba pulcherrima Harper (Fassett). This latter, also purple-flowered, Cabomba then would occur in South Carolina, south-western Georgia and adjacent Florida. I would not mention this debatable matter of systematics were it not that, if Fassett was right, a second species of Cabomba, i.e. Cabomba

pulcherrima, would occur in the United States. Actually, I believe that Fassett was right in ascribing two species of Cabomba to the United States of America, the first being Cabomba caroliniana Gray and the second Cabomba pulcherrima, as Fassett named it. Although I agree that two North American species of Cabomba exist, I am not convinced, however, that this second species should be named "Cabomba pulcherrima". I believe that so-called Cabomba pulcherrima is the same species as Cabomba piauhyensis, which would occur, then, from northern Brazil to South Carolina. Much depends on the variability of the distinguishing characters, and I feel that growing the species of Cabomba under close observation and in various environments will do much to clarify the natural limits between the Cabombas.

This is another good subject for study by plant amateurs among aquarists.

CORRECTION

On page 7 of the January issue of this year the fish captioned as Deep-water Jack-knife fish should have read as follows:

Common Jack-knife Fish (*Eques lanceolatus*), shown here for comparative purposes. This species often appears in marine aquarist's collections as it is frequently offered for sale and is far more accessible than its aloof relative, *Equetus punctatus*, subject of this article.
