Plant Portraits

Bamboo

By Gary Wallace

Perhaps no other members of the plant kingdom are so intimately linked with human existence as the bamboos. The mysteries of their blooming, persistence, and stately appearance, as well as the antiquity of human relationships with them, all contribute to the legendary nature of bamboo.

Bamboos are members of the grass family (Poaceae) by virtue of the structure of their flowers. The bamboos, which are usually woody, are the largest of the grasses. The smaller members of the grass family include those that provide much of our basic food such as wheat, oats, barley, rice, rye, and corn.

Bamboos are thought to symbolize strength and endurance through flexibility and thus are likened to gentlemanly conduct. Their hollow stems evoke an image of openheartedness. Their unique structure allows them to bend under heavy winter snows yet recover quickly to an erect position in spring. Because the stems often grow close together, bamboo is considered a symbol of family loyalty. These aesthetic attributes are, in part, a result of the long and close relationships humans have had with the several types of bamboos in the tropical regions of the world. The ancient Malays thought the stems were the original womb of man.

Few plants are so universally and effectively utilized as the great variety of bamboos. Alfred Russel Wallace, a contemporary of Charles Darwin, noted in his book *The Malay Archipelago* the various uses of bamboo by the Dyak tribesmen of Malaya. Huts were built almost entirely of bamboo and furnished with bamboo articles as well. Simple but useful ladders fashioned of cut and split bamboo allowed the Dyak to reach the upper branches of otherwise inaccessible trees. The outer

Clumping growth habit and arching stems covered with pendulous leaves make Otatea aztecorum *a graceful addition to local gardens.*

Small members of the running bamboo species make airy, informal hedges for confined areas.

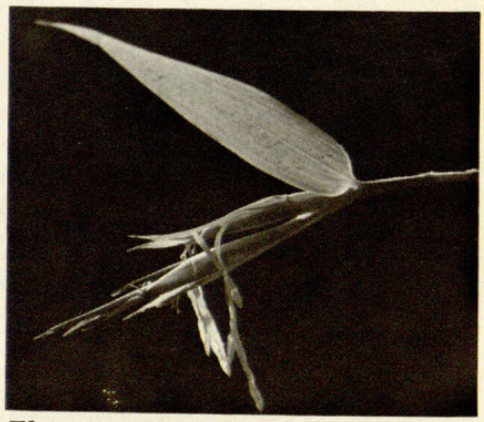
layers of the bamboo stems (culms) were used to tie poles together and to weave sturdy animal cages. Bridges of single bamboo lengths provided a flexible, rot resistant, readily replaceable span over the often torrential rivers. Bamboo handrailings were frequently provided. Flumes of split or closed bamboo stems brought fresh water to villages otherwise isolated from the water source. The softer young shoots were eaten. The extent to which bamboo provided the necessities and niceties for some primitive cultures can hardly be overstated. Many of the usages are still practiced today unchanged from centuries ago.

It is of interest to mention here some of the flowering peculiarities of bamboos. There are several manners of flowering found among the different bamboos. Some species maintain vigorous growth by sterile shoots, flowering only rarely; *Bambusa vulgaris* is not known to have set viable seed since it was first described by Wendland in 1810. Other species seem to be always in some state of flowering. Still others undergo a gregarious type of flowering in which the entire clump dies after blooming. In some species only part of the clump flowers and is later replaced by new culms.

The gregarious flowerings of bamboo have historically caused the greatest stir among native peoples as well as botanists. During a local famine along the eastern coast of India in 1812, there was a general flowering of the bamboo. The production of the bamboo fruits alleviated the hunger of thousands of people as they gathered the copious amounts of seed released from the maturing flower clusters. The fruits were cooked and eaten like rice. *Bambusa arundinacea* (Giant Thorny Bamboo) was reported to have flowered at about 32 year intervals – 1804, 1836, and 1868. There is no consensus of opinion as to the significance, nature, or triggering mechanism of these periodic flowerings of bamboo.

When the first silk worms were smuggled out of China for Emperor Justinian of Constantinople, they were concealed in a hollow bamboo cane. The worms were taken to the Imperial Palace where the emperor had already secured a monopoly on the manufacture of silk fabric in the West. He was then able to produce the needed raw silk as well.

Bamboo was known to the early botanist Theophrastus who mentioned it in his *Enquiry into Plants* probably written sometime between 250 and 285 B.C. He was an astute observer and was able to discern several types of plants known to this day. He described the Indian bamboo as "male" or "female" based upon his determination of their fruiting capability. The male bamboo he described as having solid stems was probably *Dendrocalamus strictus*, and the female with hollow stems was probably *Bambusa arundinacea*. His inclusion of two now separate genera under the term bamboo is not



Flowers of Sasa japonica *prove its link with the other grasses.*

surprising in a group of plants still confusing to taxonomists. Theophrastus was also among the first to notice a characteristic of some bamboos – the stout "roots" are numerous and difficult to destroy.

It is this somewhat weedy nature of a few species that has most contributed to a negative image of bamboos for home use. The diversity of

habit, size, and texture to be found among the bamboos recommends them for consideration for numerous landscape situations. Besides the running types of bamboos, there are those which form clumps. These may develop aggressive culms but they do not spread as rapidly or extensively as the running species. The Arboretum introduced the graceful clump bamboo *Otatea aztecorum* into the nursery trade under the name of *Arthrostylidium longifolium*. Pendulous narrow leaves densely arranged toward the ends of the stems make this one of the more unusual bamboos available.

Bamboo species may also be selected for their various heights and color patterns. Observations of the bamboo collection at the Arboretum and consideration of published descriptions should allow the home gardener to select an appropriate plant for nearly every situation.

In the list the bamboos are broken down into broad categories of clumping or running types, and within those divisions three height classes are recognized. The scientific name of each species is followed by the common name where known, the height, and the lowest temperature range of hardiness for the species. The LASCA collections have withstood temperatures as low as 24°F in 1979. This may affect consideration of the lowest temperature of hardiness for the species listed.

Fine specimens of most of the bamboos mentioned here may be seen in the palm and bamboo section of the Arboretum grounds. This area is a short distance south of the entrance, curving around the lower lake and historical area. Several others are to be found along the north side of the jungle area. Only those marked by an asterisk are not currently grown here.

There are numerous other bamboos for consideration, but those listed here are among the most successful in cultivation.

CLUMPING BAMBOOS

SMALL:

**Bambusa ventricosa* (Buddha Bamboo) 3-6 ft. in containers; hardy to 20°F.

MEDIUM:

Bambusa glaucescens (Hedge Bamboo) to 10 ft., 1¼ in. diam.; hardy to 20°F. (synonym: *B. multiplex*)

LARGE:

Arthrostylidium longifolium. (See *Otatea aztecorum*)

Bambusa arundinacea (Giant Thorny Bamboo) to 100 ft. 5½ in. diam.; hardy to 40°F.

Bambusa beecheyana (Beechey Bamboo) to 40 ft., 4 in. diam.; hardy to 40°F.

Bambusa oldhamii (Oldham Bamboo) to 55 ft., 3 in. diam.; hardy to 20°F.

Bambusa polymorpha to 90 ft., 6 in. diam.; hardy to 40°F.

Bambusa textilis to 50 ft., 2½ in. diam.; hardy to 40°F.

Bambusa tulda to 70 ft., 3 in. diam.; hardy to 40°F.

Bambusa tuldoides (Punting Pole Bamboo) to 50 ft., 2½ in. diam.; hardy to 40°F.

Bambusa ventricosa (Buddha Bamboo) planted out to 55 ft., 2½ in. diam.; hardy to 40°F.

Bambusa vulgaris (Common Bamboo) to 60 ft., 5 in. diam.; hardy to 40°F.

Dendrocalymus strictus (Male Bamboo) to 50 ft., 5 in. diam.; hardy to 40°F.

Otatea aztecorum to 20 ft., 1¼ in. diam.; hardy to 24°F.

RUNNING BAMBOOS

SMALL:

Arundinaria disticha (Dwarf Fernleafed Bamboo) to 3 ft.; hardy to 10°F. (synonym: *Sasa disticha*)

Clumping bamboos such as Bambusa glaucescens *do not spread as extensively as the running types.*

°*Arundinaria humilis* to 3 ft.; hardy to 0°F. (synonym: *Sasa humilis*)

Arundinaria pygmaea (Pygmy Bamboo to 1 ft., hardy to 20°F. (synonym: *Sasa pgymaea*)

Chimonobambusa marmorea (Marbled Bamboo) to 10 ft., 5/8 in. diam.; hardy to 20°F.

Sasa tessellata to 5 ft.; hardy to 20°F.

Shibatea kumasaca to 6 ft.; hardy to 20°F.

MEDIUM:

Phyllostachys aurea (Golden Bamboo) to 20 ft., 1½ in. diam.; hardy to 30°F.

°*Phyllostachys nigra* (Black Bamboo) to 25 ft., 1 in. diam.; hardy to 5°F.

Sasa japonica (Metake, Arrow Bamboo) to 15 ft., ¾ in. diam.; hardy to 20°F. (synonym: *Pseudosasa japonica* in *Hortus Third.*)

Sasa palmata to 8 ft., ½ in. diam.; hardy to 20°F.

LARGE:

Arundinaria amabilis (Tonkin Bamboo) to 40 ft., 2½ in. diam.; hardy to 20°F.

Arundinaria simonii (Simon Bamboo) to 25 ft., 1¼ in. diam.; hardy to 20°F.

°*Chimonobambusa falcata* (Sickle Bamboo) to 20 ft., ½ in. diam.; hardy to 20°F.

Chimonobambusa quadrangularis (Square-stem Bamboo) to 30 ft., 1 in. diam.; hardy to 20F.

Phyllostachys bambusoides (Timber Bamboo) to 70 ft., 6 in. diam.; hardy to 0°F.

Phyllostachys meyeri (Meyer Bamboo) to 30 ft., 2 in. diam.; hardy to 0°F.

°*Phyllostachys pubescens* (Moso Bamboo) to 70 ft., 5 in. diam.; hardy to 20°F.

Semiarundinaria fastuosa (Narihira Bamboo) to 25 ft., 1½ in. diam.; hardy to 20°F.

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Dr. Gary Wallace is a plant taxonomist at the Arboretum.

(Photographs by William Aplin)

LOS ANGELES STATE AND COUNTY ARBORETUM, Arcadia

MARCH 14 — 9 a.m. to 4:30 p.m.
Cooperative Action Environmental Education Resources Fair
Hosted by Los Angeles State and County Arboretum

MARCH 21, 22—Sat. 1 p.m. to 4:30 p.m. Sun. 9 a.m. to 4:30 p.m.
Flower Show
Girl Scouts of America**

APRIL 4, 5 — Sat. 1 p.m. to 4:30 p.m. Sun. 9 a.m. to 4:30 p.m.
Aril Show
Aril Society**

APRIL 11, 12 — 9 a.m. to 4:30 p.m.
Mame Show
Mame Society of Southern California**

APRIL 18, 19 — Sat. 1 p.m. to 4:30 p.m. Sun. 9 a.m. to 4:30 p.m.
Amaryllis Show
Southern California Hemerocallis and Amaryllis Society**

APRIL 25, 26 — Sat. 1 p.m. to 4:30 p.m. Sun. 9 a.m. to 4:30 p.m.
Rose Show
Pacific Rose Society**

MAY 3 — 9 a.m. to 4:30 p.m.
Baldwin Bonanza, a plant sale*

MAY 16, 17 — Sat. 1 p.m. to 4:30 p.m. Sun. 9 a.m. to 4:30 p.m.
Bromeliad Show
So. California Bromeliad Council**

MAY 17 — 11 a.m. to 4:30 p.m.
Epiphyllum Show
Epiphyllum Society**

MAY 23, 24, 25 — 9 a.m. to 4:30 p.m.
Bonsai Show
Santa Anita Bonsai Society**

CALENDAR

MARCH, APRIL, MAY

MAY 30, 31 — 9 a.m. to 4:30 p.m.
Satsuki & Azalea Show
Valley Satsuki & Azalea Society**

*Sponsored by California Arboretum Foundation
**Cosponsored by California Arboretum Foundation

DESCANSO GARDENS, La Canada

MARCH 1 — 9 a.m. to 4:30 p.m.
Camellia Show
Camellia Society of So. California**

MARCH 14, 15 — 9 a.m. to 4:30 p.m.
Daffodil Show
Daffodil Society of So. California**

MAY 2, 3 — 9 a.m. to 4:30 p.m.
Bonsai Show
Descanso Bonsai Society**

MAY 14 — 10 a.m. to 4 p.m.
Paseo por Descanso, guided walk of Garden and luncheon on main lawn*

*Sponsored by Descanso Gardens Guild
**Cosponsored by Descanso Gardens Guild

SOUTH COAST BOTANIC GARDEN, Palos Verdes Peninsula

MARCH 8 — 2 p.m.
Demonstration by Eleanor Barker
How to Repot & Divide Cactus & Succulents
South Coast Cactus & Succulent Soc.**

MARCH 15 — 2 p.m.
Demonstration by Fred McKelvey*
Now is the Time to Divide & Plant Dahlias

MARCH 22 — 2 p.m.
Demonstration by Ilene DeLong*
Flower Arrangements of Dried Materials

MARCH 29 — 2 p.m.
Talk by Dan Walker*
"Landscaping for Color with Flowering Trees and Shrubs"

APRIL 5 — 2 p.m.
Palos Verdes Symphonic Spring Band Concert*
Light classics, show tunes

APRIL 12 — 2 p.m.
Demonstration by Lou Katus*
Potting, propagation & culture of African violets

APRIL 21 — 10 a.m. to 2 p.m.
Senior Citizens Day*
Free plant and guided walk

APRIL 26 — 2 p.m.
Talk by Ruth Pease*
"Use & culture of shade plants, indoors and outdoors"

MAY 16, 17 — 9 a.m. to 4:30 p.m.
Fiesta de Flores, a plant sale*

MAY 24 — 9 a.m. to 4:30 p.m.
Rose Show
South Coast Rose Society**

MAY 30, 31 — 9 a.m. to 4:30 p.m.
Flower Show
Costa Verde District

*Sponsored by South Coast Botanic Garden Foundation
**Cosponsored by South Coast Botanic Garden Foundation