

What is NOT bamboo.

Not Horsetail (*Equisetum hyemale*), an invasive bog plant with sectioned canes.

Not Giant Reed (*Arundo donax*), an aggressive plant often found in riverbeds.

Not Bamboo Palm (*Chamaedorea seifritzii*), a palm whose stalks appear to have nodes like bamboo.

Not Heavenly Bamboo (*Nandina domestica*), a member of the barberry family with lightly branched cane-like stems and small leaves.

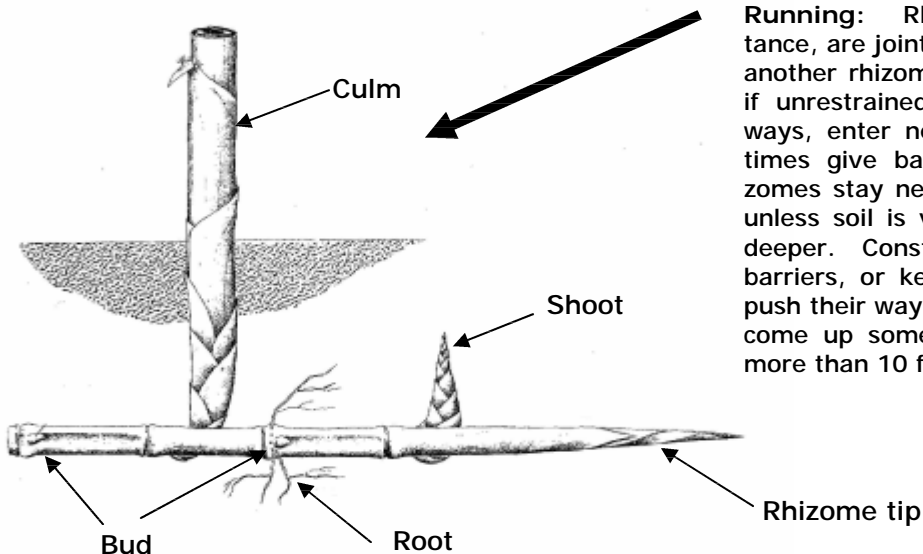
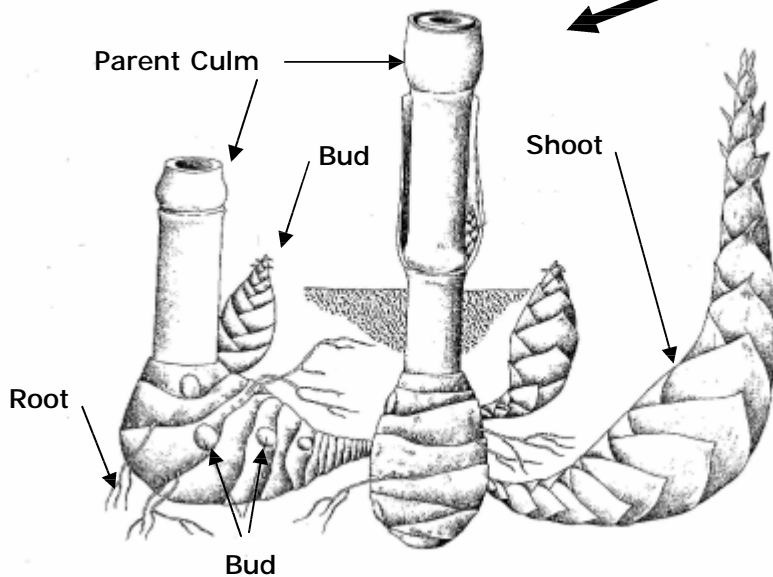
Not Lucky or Friendship Bamboo (*Dracaena sanderana*), a plant often grown from jointed green cuttings put in bowl of water and pebbles.

What bamboo is. A group of woody perennial evergreens plants in the grass family Poaceae, sub family Bambusoideae with about 1200 members.

Growing habit: Two growing habits: running (R) , clumping (C) . All have underground stems called rhizomes by which the plant colonizes - or spreads into - an area. Clumpers stay in one place. Runners don't; they make a grove.

Clumping: Rhizomes are short, new shoots, called culms come up close to parent culm.

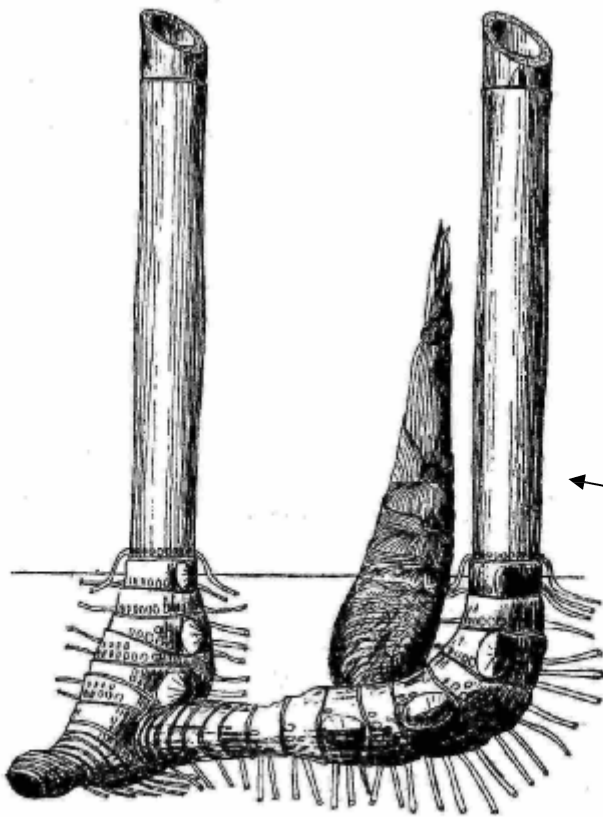
Identification: Classification of a bamboo species depends on observation and description of all its parts: rhizome, culm, culm sheath, branching habit, leaves, and finally flowers - and consequent seeds - which are most difficult to observe because most bamboos flower very infrequently - 20+ years. Further, nature plants can often look quite different from juvenile or just-out-of-the container nursery stock.



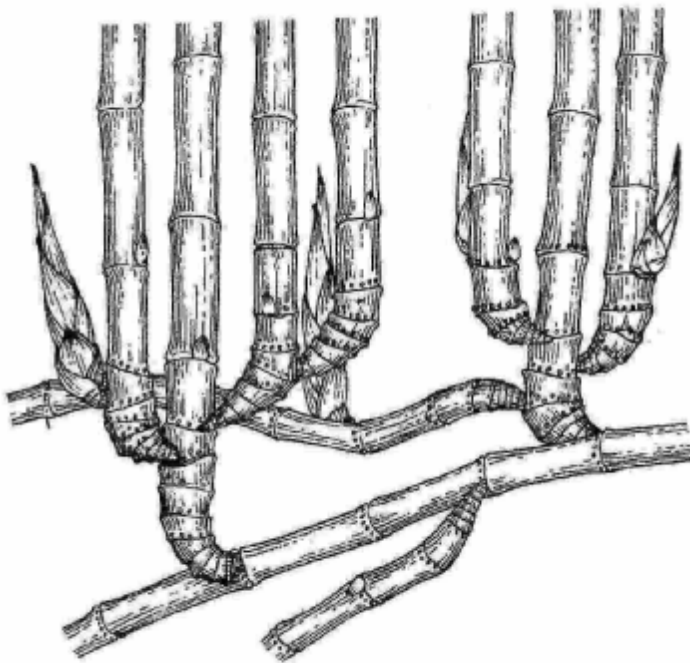
Bamboo from the ground up.

Preferred soil: loose, loamy, well drained, moderately acidic.

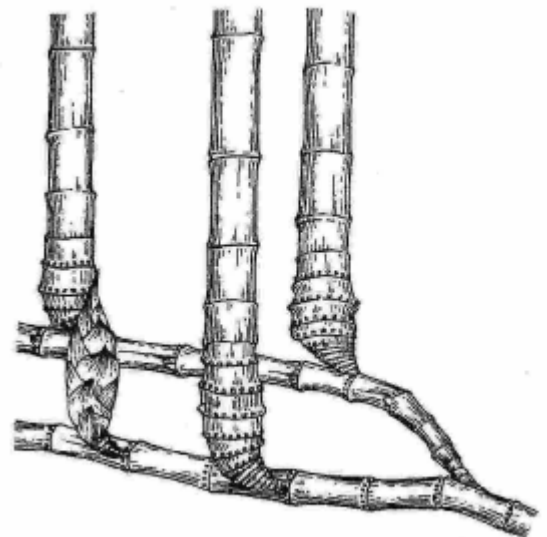
Rhizome: Underground stem from which the roots grow. Grows horizontally near surface. Sometimes runner loops above ground and goes back down.

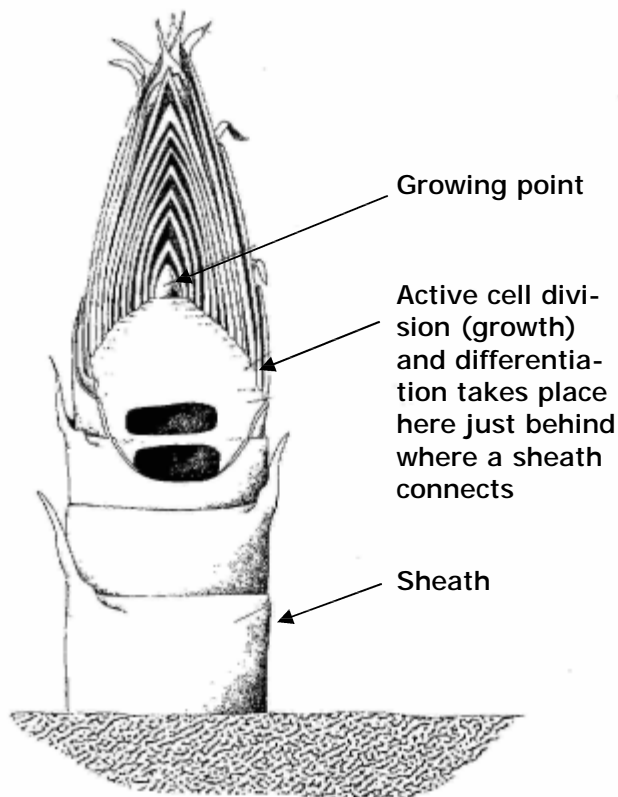


Clumping



Running



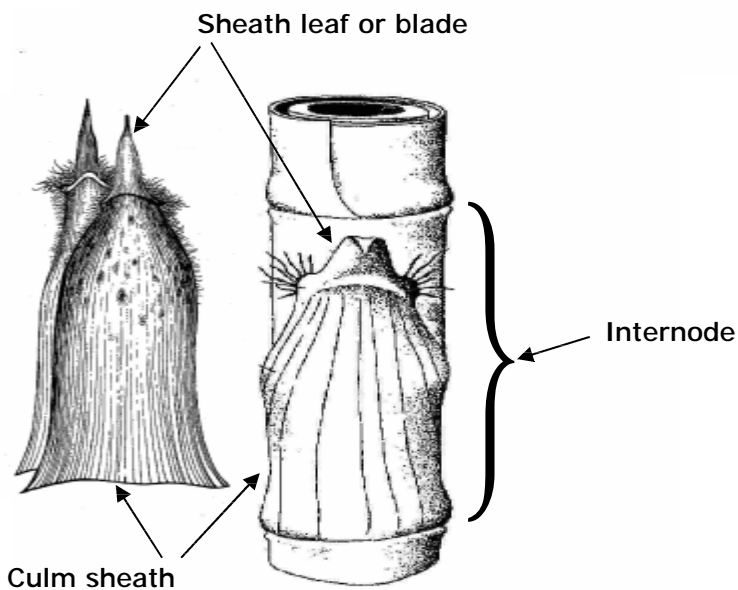


Shoot: The pointy part of a culm or rhizome as it comes out of earth; is often edible, but must be cooked to remove bitter taste; is easily broken off (fragile) when short. Usually appear for runners in early spring, for clumpers in mid summer or fall. You'll hear bamboo lovers saying, "My is shooting now." This is the beginning of a pleasant time to watch phenomenal daily culm growth.

Culm: The vertical stem. Solid on some species, hollow on most except at nodes. Diameters from 1/8 in. to 12 in. They push out of the soil the diameter they will always be. Heights from few 1 ft to 100 ft. Grows to full height in one year, then persists for several years increasing number or side branches and branchlets. Larger varieties can extend one or two feet a day when growing. Fun to watch.

Colors can change over time. Most fresh-out-of-the-ground culms are a shade of green from yellow-green to dark green. Some start light green, turn yellow, some start green and turn black, some have splotches, some have vertical stripes. Some favorites are *B. vulgaris* for its yellow culm with "hand painted" green stripes. There are several clumping species whose culms come up green then age to a brown-black with small green stripes.

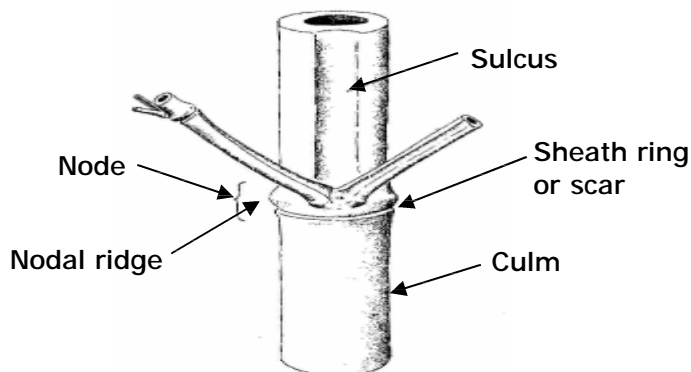
When the sheath falls off or dries up, no further linear growth takes place in culm. Branches may grow centered behind the center of the base of the sheath. Branches can begin forming while the sheath is growing, or can form several years later.



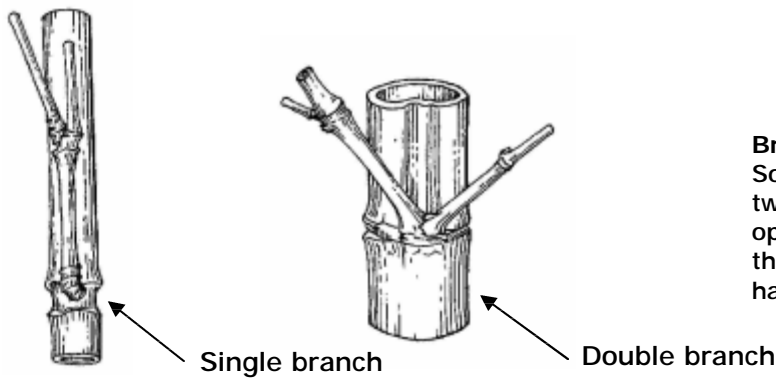
Node: Region on culm where branches will grow, on rhizome of runner where new bud can begin another rhizome or a culm. Roots also emanate from this region of rhizome. Culms are often hollow except at the node where it is solid. Culms of some clumpers are solid in lower internodes.

Internode: Part of the culm (or rhizome of runner) between nodes. Each is covered by a sheath while growing. The growing part is just behind the base of the culm sheath. Internodes of most bamboos are hollow but some are solid near base - where culm or shoot comes out of earth. Some species, notably *Phyllostachys aurea* (common golden bamboo) varieties have shortened and gnarly internodes one to two inches long.

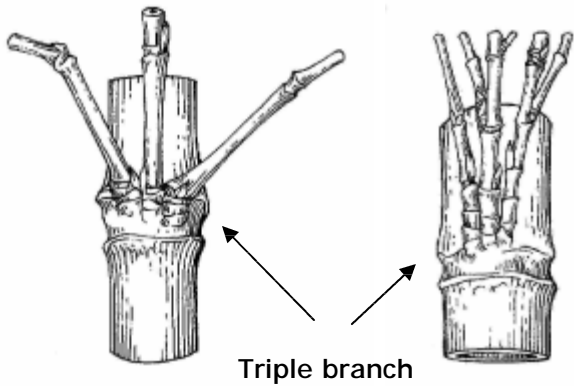
Culm Sheath: A specialized "leaf" which protects the growing region of a culm. It is wrapped tightly around the culm during growth. Most often dries and falls off. Some remain on culm. Some have short bristles that can irritate skin. Some are colorful. Culm sheaths are often unique to the point of being used to identify a species. Once the culm sheath dries, no more vertical growth takes place in that internode.



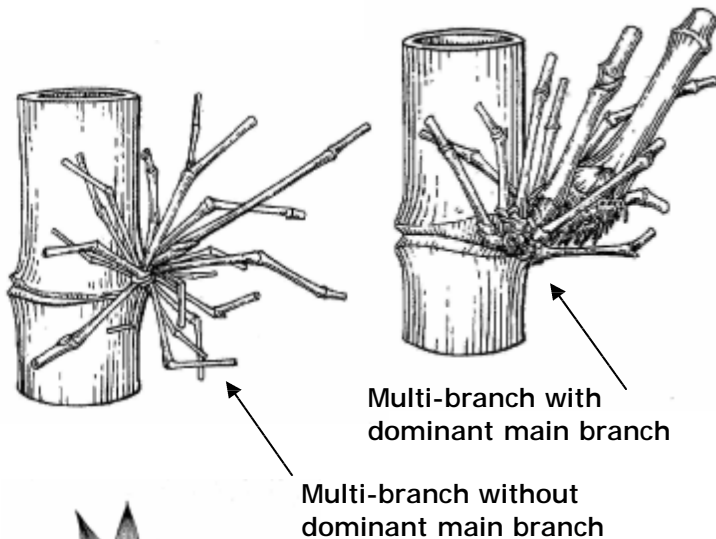
Sulcus: A vertical groove in internode above branch point. Sometimes sulcus is different color than rest of culm. Some species have green culms with yellow sulcus. Some the opposite.



Branching: Different branch patterns from a node. Some species have one branch per node, some have two (the *Phyllostachys* genus which make for an openness), and some have many branches, such as the *Bambusa multiplex* genus. Many large clumpers have one main branch and many smaller ones.



Flowers and seeds: Happens infrequently. Since bamboo is a grass, its flowers look much like those of grasses - not like orchids or geraniums. Most often, when flowering takes place, the whole plant goes into flowers and few leaves for several years. This takes up most of the plant's nourishment and the plant dies as the new seeds begin a new generation. All plants deriving from the same clone - those plants propagated by cuttings originating from the same initial plant - will flower at the same time no matter where in the world they are.



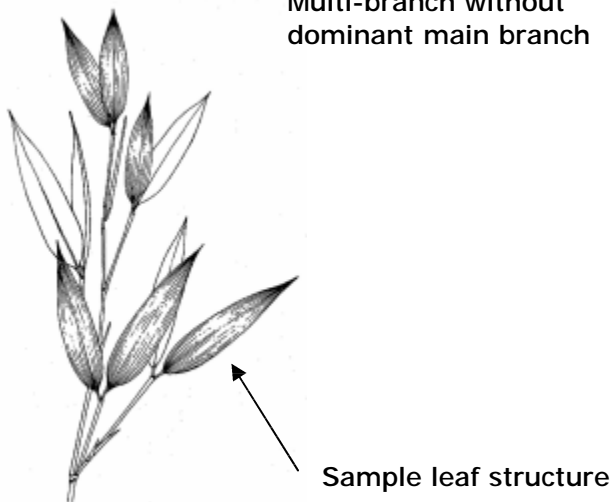
Naming: Frustrating. There's the Genus and species name (Botanical name). And common name, both English and sometimes in language of country of origin. Nurseries frequently misname plants so you don't really know what you are getting unless you have some knowledge. A Bamboo Species Source List is maintained by and published yearly - usually in April - by the American Bamboo Society (ABS). The list is available on the ABS website: www.AmericanBamboo.org.

The list briefly describes each bamboo which has been for sale in the US in the prior year, and vendors who purport to currently sell it.

Also check out the website for the Southern California Chapter of ABS. www.AbsSoCal.org.

Best known temperate bamboo genera:

Arundinaria, Bambusa, Chimonobambusa, Chusquea, Dendrocalamus, Drepanostachyum, Guadua, Hibnobambusa, Indocalamus, Otatea, Phyllostachys, Pleioblastus, Pseudosasa, Sasa, Sasaella, Sasamorpha, Semiarundinaria, Shibataea, Sinarundinaria, Sinobambusa, Thamnocalamus



Leaves: Range in size and shape and coloration and hairiness. Usually green, sometimes with small yellow, or white or cream stripes - one to many stripes depending on species. Some have 1/4 wide and 5 in long leaves. Some have 4 in wide and 16 in long leaves. In spring many leaves yellow and fall to be replaced by new ones. Leaves curling (sides fold into center line) often indicates moisture running low. Time to water.

Propagation: both C and R: Seeds, when and if available and viable. Rhizome cuttings with upper part of culm(s) cut off. Prevents imbalance between root uptake of water and evaporation of same from leaves. Lose more moisture than can be replenished; lose the plant. A plant grown from a seed is genetically unique and may form a peculiarly unique and desirable plant which is then propagated by cuttings.

C: culm cuttings containing a node or two from which roots and new culm grow.

R: rhizome cutting containing no culms.

Where to get. Some local So. Cal. nurseries, ABS SoCal bamboo sale at Quail Botanic Garden in Encinitas, CA on the third Sat of April and Sept. Great variety. Knowledgeable people to talk to. Also, do web search on Bamboo. See what you find. Good education. Vendor's websites give varied perspectives on the plants, prices, etc. However a 1 gal plant by mail order can be pretty pricy and may not do well in So CA.

How to grow. In pots. In ground. Most species like full sun. However, in So CA this can be pretty intense, especially for smaller clumpers in "mountain bamboo group" - those from Himalayas. In decorative pot, leave in nursery container so that if it starts to burst container, you've lost only plastic container and not expensive pot. Grow in loamy soil with good drainage. Give frequent and liberal water when newly planted, say twice a week, maybe daily during hot winds. Fertilize with lawn food as bamboo is a grass like a lawn. Trim lower branches to reveal verticalness of culms. Top of a culm can be cut off if too tall. It will not grow taller as does a tree.

Uses: Living: Specimen plant in pot, in ground, as visual barrier, as ground cover, as grove for beauty, as groves for bioremediation of contaminated waters or replenishment of atmospheric oxygen, as plant to prevent soil erosion.

Green: As food for people and animals - think Chinese food, think Giant Pandas, think fodder for domestic animals. As pulp source for paper.

Dried: As construction material left as culms and branches: as poles.

Dried: As cut poles for fire wood.

Dried: As material for crafts, as carved or split and woven.

Dried and reformed: as material for particle board, laminated boards.

As material for fabric, as in clothes.

Public Gardens displaying Bamboo:

Quail Botanical Gardens,
www.qbgardens.com
230 Quail Gardens Drive 760-436-3036
Encinitas, CA

The Huntington Library, Art collections, and Botanical Gardens,
www.huntington.org
1151 Oxford Rd 626-405-2100
San Marino, CA

Los Angeles County Arboretum and Botanic Gardens,
www.arboretum.org
301 North Baldwin Ave. 626-821-4623
Arcadia, CA

Some Bamboo Books:

Bamboo for Gardens - by Ted Jordan Meredith. An excellent treatment of bamboos, covering origins, history, structure, cultivation, propagation, landscaping, and insights into plant selection. Half the book is an encyclopedia of over 300 bamboos with detailed descriptions and color photos. Hardbound, 8" x 11", 406 pages.

Bamboo in Japan - by Nancy Moore Bess. A beautiful collection of photos and essays presenting a complete tour of bamboo in Japan, illustrating its uses in art and architecture, textile designs, furniture, crafts, foods, gardening and the home. Nowhere is bamboo used more elegantly and distinctively than in Japan, where its presence touches every part of daily life, even reaching into language, literature and ritual. Over 250 photographs and illustrations. Hardcover, 9" x 11", 220 pages.

Bamboos - by Christine Recht & Max Wetterwald. Chapter headings are: Bamboos in Asian Culture, Uses of Bamboo, Morphology and Structure, Characteristics of Bamboo Genera, Species and Cultivars for the Garden, Planting and Cultivation, Garden Design, Growing Bamboos in Containers, Bamboo as a Raw Material, Problems with Bamboo Cultivation, and Bamboo as a Vegetable. Emphasis is on temperate climate bamboos. Hardbound, 8 ½ x 10 ½", 128 pages, 30 b/w illustrations, 68 color.

Bamboo related websites:

www.AmericanBamboo.org
www.AbsSoCal.org
www.WorldBamboo.org
www.BambooCentral.org

Problems with bamboo:

Unwanted spreading: Break off new rhizomes or curb with properly installed barriers of concrete or HDPE (high density polyethylene) 40 mil thick and depth to 30 in. Probably can get by with less depth if soil is hard.

Getting too tall: When grown as a visual barrier along a property line wall, often power lines are above. Cut the culm tops off before they reach the power lines.

Leaf burn: High salt content of some irrigation water causes leaf tips to burn; especially members of the *Phyllostachys nigra* genus (black bamboos).

Getting old or ugly: Thin out dead culms, especially in center of clumpers. Cut off side branches to reveal nodes.

Pests: Some clumpers (*B. multiplex* forms) are susceptible to mealy bugs. Use Orthonex. Some get mites (evidenced by bleached looking spots on underside of leaves) and aphids. Use an insecticide spray. Dried culms can be susceptible to powder post beetles. Culms need to be harvested at optimum time or treated when drying.

Leaf litter: Can get in pools, litter walks, porches and lawns, blow into base of nearby shrubs, etc. However, the leaf litter is bamboo's natural mulch.

Breaking in winds: Fall and winter Santa Ana winds in So CA often break tops of newly grown culms of large clumpers. Protect or tie up if possible.

Plants don't grow as expected. Wow. Don't we all have this one! Often soil conditions - too hard, too dry, not acidic enough, irregular water cycle, fertilizers, etc. Maybe we expect too much too soon since bamboos are known as fast growing. But one of the big difficulties is climate. In So CA we think we can grow everything. Yes. It grows, but perhaps not to the optimum in the climate where the plant is native. There are tropical, sub tropical, temperate, and mountain bamboos. Tropical and sub tropical prefer a lot of humidity. Temperate and mountain species prefer less high temperatures than Riverside, CA typically has - hot dry Santa Ana conditions.

Bamboos commonly found in So CA:

Genus	Common Name	C / R	Height in So. CA (ft)
Bambusa			
<i>Bambusa beechyana</i>	Beechy Bamboo	C	50
<i>Bambusa multiplex</i>	Hedge Bamboo	C	20
<i>Bambusa m. 'Alphonse Karr'</i>	Alphonse Karr	C	15
<i>Bambusa m. 'Golden Goddess'</i>	Golden Goddess	C	10-12
<i>Bambusa oldhamii</i>	Timber Bamboo	C	40
<i>Bambusa textilis</i>	Weaver's Bamboo	C	30+
<i>Bambusa tuldooides</i>	Punting Pole Bamboo	C	30-40
<i>Bambusa tuldooides 'Ventricosa'</i>	Buddha's Belly Bamboo	C	30-40
<i>Bambusa vulgaris 'Vittata'</i>	Painted Bamboo	C	25-30
Phyllostachys			
<i>Phyllostachys aurea</i>	Golden Bamboo	R	15-20
<i>Phyllostachys nigra</i>	Black Bamboo	R	12-15
<i>Phyllostachys vivax</i>	No common name	R	40
Pleioblastus			
<i>Pleioblastus distichus</i>	Dwarf Fernleaf	R	1-2
<i>Pleioblastus fortunei</i>	Dwarf Whitestripe	R	2-4
<i>Pleioblastus viridistriatus</i>	Dwarf Greenstripe	R	2-3

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