

CYCADS

Cycads are among the most primitive “*gymnosperms*” (plants whose seeds are not enclosed in an ovary like those of flowering plants). Although palm-like in appearance, they are actually ancient cousins of pines and ginkgos, and their fossil history can be traced back more than 200 million years.

The unique seeds of cycads are born on “*sporophylls*” (literally seed leaves) arranged spirally into cones. Cycads are tough and durable plants, with either arborescent or subterranean stems. In the garden, some species adapt to full sun and drought while others require moist and shady conditions. Many cycads are endangered in their native habitats and for this reason are regulated by the **Convention on International Trade of Endangered Species**, or **CITES**.

There are some 289 species in 11 genera. Only 8 or 10 species, representing 5 genera, are common in horticulture. Since the 1980's, the popularity of cycads has grown at a remarkable rate. That is why we here at HCI have sought to make these rare and beautiful plants available.

The genus BOWENIA

Bowenia is named in honor of Sir George Bowen (1821-1899), the first Governor of Queensland, Australia.

Family: *Stangeriaceae*
Subfamily: *Bowenioideae*
Tribe: *Zamiineae*



Bowenia is a genus of 2 species, *serrulata* and *spectabilis*, distributed in tropical Australia, mainly in low coastal areas of Queensland with some populations extending into the Atherton Tableland. The habitats include rain forest and woodland margins, ranging from sea level to 2000 ft. *Bowenia* is distinctive with bipinnate, sometimes tripinnate leaves. *Bowenias* can easily be mistaken for large Maidenhair Ferns (*Adiantum*). *Bowenia serrulata* can be separated from *B. spectabilis* by noting the presence of serrations or teeth along the margins of the leaflets. In *B. spectabilis*, the margins are entire, though in some cases the leaflets may be lacerate.

Culture: *Bowenias* are basically understory plants, preferring half shade and open well-drained soil with plenty of fertility.

Bowenia serrulata

The epithet, “*serrulata*”, is Latin for serrate, referring to the margins of the leaflets.

B. serrulata also has a variant population called “*Tinaroo*” found between 1400 ft. and 2300 ft. along the Tinaroo Dam on the Atherton Tableland in Central Queensland. Plants from this area differ by the leaflet margins, being more narrow and finely serrated. The new emergent growth is bronze in color, making them particularly striking.

Common Name: Byfield Fern
Cold Tolerance: 32°F (0°C) **USDA Zones:** 10-11

Typical Height: 3.5'–6.5' **Growth Rate:** Moderate
Habit: Solitary

Status: Available
Available Range: Liners to 7gal.

Bowenia spectabilis

The specific epithet is derived from “*spectans*”, Latin meaning to be seen or esteemed.

Common Name: Zamia Fern
Cold Tolerance: 28°F (-2°C) **USDA Zones:** 10-11

Typical Height: 3.5'–6.5' **Growth Rate:** Slow to moderate
Habit: Solitary

Status: In Stock
Available Range: Liners to 7gal.

The genus CERATOZAMIA

From the Greek “*ceras*”, horn, and “*azaniae*”, cone, in reference to the paired spine-like projections on the “*sporophylls*” (cones) of male and female plants in this genus.

Family: *Zamiaceae*
Subfamily: *Zamioideae*
Tribe: *Ceratozamiaceae*

The tribe includes only the single genus *Ceratozamia*

This is a small genus of about 11 cycads native in Mexico, Belize, and Guatemala, often growing on limestone soils. The new leaves emerge in attractive flushes from early to late summer, usually tinted strongly with red or brownish tones. This makes a showy contrast to the lush greenery of the mature leaves, which carry numerous flattened leaflets attached to lax petioles with a few prickles near the base. Several species of *Ceratozamia* from the sierras of eastern Mexico have proven very hardy to frost. When well grown, these are among the most elegant of the cycads.

Culture: *Ceratozamia* species accept morning or half day sun, but are most luxuriant when grown under shaded conditions. Established plants tolerate drought. Good drainage and shelter from wind are essential.

Ceratozamia hildae

Common Name: Bamboo Cycad
Cold Tolerance: 23°F (-5°C) **USDA Zones:** 9b-11

Typical Height: 2.5'–6' **Growth Rate:** Slow
Habit: Solitary

Status: In Stock
Available Range: 7–15gal.



Ceratozamia kuesteriana

Common Name: Cloud Forest Cycad
Cold Tolerance: 18°F (-8°C) **USDA Zones:** 8b-11

Typical Height: 3.5'–6' **Growth Rate:** Slow
Habit: Solitary

Status: In Stock
Available Range: 7–15gal.



Ceratozamia mexicana

Common Name: Mexican Horncone Cycad
Cold Tolerance: 23°F (-5°C) **USDA Zones:** 9b-11

Typical Height: 3.5'–6' **Growth Rate:** Slow
Habit: Solitary

Status: In Stock
Available Range: 3–15gal.

Ceratozamia robusta

Cold Tolerance: 23°F (-5°C) **USDA Zones:** 9b-11

Typical Height: 3'–6' **Growth Rate:** Slow
Habit: Solitary

Status: In Stock
Available Range: 3–15gal.

Other Species of *Ceratozamia*:

C. latifolia, *C. microstobila* (in stock),
C. miqueliana, *C. sabatoii* (occasionally available),
C. norstogii (on request), *C. whitelockiana* (looking for)

Cycads contain the oldest known species of plants.



The genus CHIGUA

Chigua is the common name used by a few Central and South American Indians for species of *Zamia*.

Family: *Zamiaceae*
Subfamily: *Zamioideae*
Tribe: *Zamieae*
Subtribe: *Zamiinae*

Chigua is the latest genus named, has but two species, and together with most of the cycad genera, form the family *Zamiaceae*. These small cycads are found in northern Columbia's rainforests at elevations of 250-500 feet.

Culture: *Chigua* prefers thick leaf litter with a consistent moisture level in shaded conditions. It makes an ideal specimen plant in an intimate garden.

CYCADS

Chigua bernalii

Cold Tolerance: 23°F (-5°C) **USDA Zones:** 9b-11

Typical Height: 3.3'–4.5' **Growth Rate:** Slow to Moderate

Habit: Clustering

Status: Looking For



Chigua restrepoi

The name is in honor of Padre Sergio Restrepo (d. 1989), a Colombian botanist who rediscovered this cycad.

Cold Tolerance: 23°F (-5°C) **USDA Zones:** 9b-11

Typical Height: 4'–6' **Growth Rate:** Slow

Habit: Solitary

Status: Looking For



The genus CYCAS

From the Greek “*koikas*”, a name used by Theophrastus for a species of palm.

Family: *Cycadaceae*

This is a large genus of shrubby cycads native to China, Taiwan, Southeast Asia, India, the Ryukyu Islands, and Australia, with one species (*Cycas thouarsii*) in Madagascar and adjacent parts of Africa. These primitive cycads develop lush crowns of foliage from leaves which emerge from felted or hairy leaf stems with the individual leaflets unfurling from tight coils like a fern. The male flowers appear in a cone; female flower parts are organized in a loose cone-like structure, eventually bearing large, usually reddish seeds. Several of the species are hardy to frost and a number regularly experience fire in habitat. The genus includes several beloved ornamentals of tropical and subtropical gardens.

Culture: *Cycas* species accept sun or light shade and will tolerate drought. Good drainage is essential.

Cycas panzhihuaensis

Common Name: Dukou Sago Palm

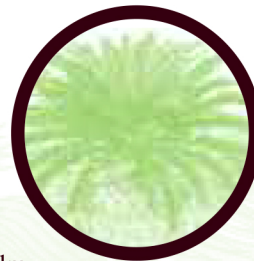
Cold Tolerance: 18°F (-8°C) **USDA Zones:** 9-11

Typical Height: 3.3'–10' **Growth Rate:** Slow

Habit: Clustering

Status: In Stock

Available Range: 3–10gal.



Cycas revoluta

Common Name: King Sago Palm

Cold Tolerance: 18°F (-8°C) **USDA Zones:** 9-11

Typical Height: 4'–12' **Growth Rate:** Slow to Moderate

Habit: Clustering

Status: In Stock (multi-trunked and multi-headed specimens)

Available Range: 15–300gal.

Cycas taitungensis

Common Name: Prince Sago Palm, *Cycas taiwaniana*

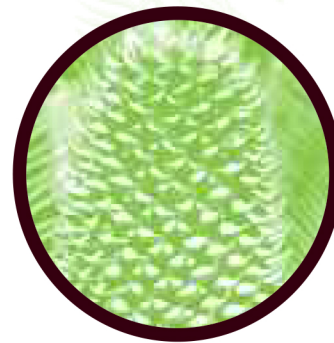
Cold Tolerance: 18°F (-8°C) **USDA Zones:** 9-11

Typical Height: 3.3'–16' **Growth Rate:** Slow

Habit: Clustering

Status: In Stock

Available Range: 7–100gal.



Other Species of Cycas:

C. apoa, *C. circinalis*, *C. macrocarpa*, *C. media*, *C. tansachana* (in stock)

C. couttsiana, *C. megacarpa*, *C. micholitzii*, *C. ophiolitica*, *C. thouarsii*, (occasionally available)



The genus DIOON

From the Greek “dis”, two, and “oon”, an egg, in reference to the paired ovules in the female “*sporophyll*” (cone).

Family: *Zamiaceae*
Subfamily: *Encephalartoideae*
Tribe: *Diooeae*

The tribe includes only the single genus *Dioon*.

This is a striking genus of robust trunk forming cycads with at least nine species native to Mexico and one to Honduras. The stiffly held pinnate leaves bear numerous narrowly pointed leaflets attached at sharp angles to the *rachis* (leaf stem), so that the individual leaves of many *Dioon* resemble feathers. Most species have foliage of a beautiful blue-gray color, making them especially distinctive in garden display. Several *Dioon* species occur at moderate elevations in the Mexican sierras and show excellent tolerance to frost.

Culture: *Dioon* species accept sun, but are most luxuriant when grown under shaded conditions. Established plants tolerate drought. Good drainage is essential.

Dioon edule

Common Name: Mexican Sago Palm, Chamal, Palma de la Virgen
Cold Tolerance: 14°F (-10°C) **USDA Zones:** 8b-11

Typical Height: 5’–10’ **Growth Rate:** Slow
Habit: Clustering

Status: In Stock
Available Range: 15–65gal.

Other species of Dion: *D. califanoi*, *D. edule var angustifolium*, *D. edule var edule Queretaro*, *D. mejiae*, *D. merolae*, *D. spinulosum* (all in stock)



The genus ENCEPHALARTOS

From the Greek “en”, in, “cephale”, head, and “artos”, bread, in reference to the starchy, edible trunks common to some species of the genus.

Family: *Zamiaceae*
Subfamily: *Encephalartoideae*
Tribe: *Encephalarteae*
Subtribe: *Encephalartinae*

The subtribe includes only the single genus *Encephalartos*.

This is a very large genus of about 50 species of shrubby cycads native largely to southern Africa, but with species also occurring in eastern and central Africa. Most *Encephalartos* varieties produce suckers from the base along the trunks and slowly develop into spectacular ornamentals with handsome crowns of pinnate, often prickly fronds. The leaves vary from rich green tones to silvery grays. The female cones of some species such as *Encephalartos ferox* burst when ripe to offer the added ornament of glossy red seeds. *Encephalartos* species from tropical Africa require near frost-free conditions; species from the winter rainfall areas of South Africa prefer cool temperate or Mediterranean climates; varieties from the mountains of Natal and the Transvaal adapt to hot summer climates and may tolerate hard frosts.

Culture: *Encephalartos* species accept sun or shade and will tolerate drought. Good drainage is essential.

Encephalartos arenarius

Cold Tolerance: 28°F (-2°C) **USDA Zones:** 10-11

Typical Height: 6–8’ **Growth Rate:** Slow
Habit: Solitary

Status: Occasionally Available
Available Range: 7–25gal.

Encephalartos hildebrandtii

Cold Tolerance: 24°F (-5°C) **USDA Zones:** 9b-11

Typical Height: 1’–20’ **Growth Rate:** Slow
Habit: Solitary

Status: In Stock
Available Range: 7– 45gal.

CYCADS

Encephalartos lehmannii

Cold Tolerance: 20°F (-7°C) **USDA Zones:** 9-11

Typical Height: 1'-5' **Growth Rate:** Slow
Habit: Clustering

Status: In Stock
Available Range: 7-65gal.



Encephalartos natalensis

Common Name: Natal Cycad
Cold Tolerance: 23°F (-5°C) **USDA Zones:** 9b-11

Typical Height: 10'-13' **Growth Rate:** Slow
Habit: Solitary

Status: On Request
Available Range: 1-3gal.



Other Species of *Encephalartos*:

E. friderici - *guilielmi*, *E. horridus* (in stock)
E. trispinosus (in stock 3-45gal.)

E. caffer, *E. eugene - maraisii*, *E. ghellinckii*, *E. lanatus*, *E. latifrons*, *E. lebomboensis*, *E. senticosus* (occasionally available)

E. altensteinii, *E. cycadifolius*, *E. longifolius* (on request)

E. hirsutus, *E. princeps*, *E. tegulaneus*, *E. transvenosus*,
E. woodii (looking for)

The genus LEPIDOZAMIA

From the Greek “*lepis*”, scale, and “*azaniae*”, cone, in reference to the scale like pattern of the cones and of the old frond bases which cover the stems of the species.

Family: *Zamiaceae*
Subfamily: *Encephalartoideae*
Tribe: *Encephalarteae*
Subtribe: *Macrozamiinae*

The subtribe includes only the single genus *Macrozamia*.

Lepidozamia is a small genus of two species of cycads distributed in eastern Australia. Both of the species are solitary and remain unbranched throughout life. The slender leaflets have no mid rib and join a smooth leaf stem (*rachis*), with the large, feathery leaves emerging in flushes alternating with cones (*cataphylls*). One of the species, *Lepidozamia hopei*, is the tallest of all cycads and in its sheltered tropical rainforest home may develop an erect trunk up to 60 feet tall. The other species, *Lepidozamia peroffskyana*, is more modest in height, to 20 feet, and more adaptable to exposed habitats, tolerating the moderate frosts common to its home in coastal New South Wales and Southern Queensland, an area with several other fairly hardy cycads.

Culture: *Lepidozamia* species grow well under shaded conditions. Established plants tolerate drought. Good drainage is essential.

Lepidozamia hopei

Cold Tolerance: 28°F (-2°C) **USDA Zones:** 10-11

Typical Height: 25'-35' **Growth Rate:** Fast
Habit: Solitary

Status: In Stock
Available Range: 7-15gal

Lepidozamia peroffskyana

Cold Tolerance: 23°F (-5°C) **USDA Zones:** 9b-11

Typical Height: 14'-20' **Growth Rate:** Fast
Habit: Solitary

Status: In Stock
Available Range: 1-20gal



The genus MACROZAMIA

From the Greek “*macros*”, large, and “*azaniae*”, cone, in reference to the large female “*sporophylls*” produced by some of the species.

Family: *Zamiaceae*
Subfamily: *Encephalartoideae*
Tribe: *Encephalarteae*
Subtribe: *Macrozamiinae*

The subtribe includes one other genus, *Lepidozamia*.

A varied genus of about twenty-five species of cycads widely distributed in Australia. The species range from feathery dwarf plants with subterranean stems to majestic trunk-forming trees resembling Date Palms. All the species are solitary and remain unbranched throughout life. Where the slender leaflets join the leaf stem (*rachis*) lies a pale colored callous area, which may be a decorative feature on the large, feathery leaves. A number of species regularly experience seasonal droughts and fires in habitat and several grow in areas subject to hard frosts and snow.

Culture: *Macrozamia* species accept sun, but are often more luxuriant when grown under shaded conditions. Established plants tolerate drought. Good drainage is essential.

Macrozamia communis

Common Name: New South Wales Macrozamia
Cold Tolerance: 15°F (-9°C) **USDA Zones:** 8b-11

Typical Height: 3.5’–6.5’ **Growth Rate:** Slow to Moderate
Habit: Solitary

Status: In Stock
Available Range: 3–100gal.



Macrozamia johnsonii

Common Name: Johnson’s Macrozamia
Cold Tolerance: 18°F (-8°C) **USDA Zones:** 9-11

Typical Height: 3.5’–5’ **Growth Rate:** Moderate
Habit: Solitary

Status: In Stock
Available Range: 15–45gal.

Macrozamia miquelii

Common Name: Zamia Bush
Cold Tolerance: 18°F (-8°C) **USDA Zones:** 9-11

Typical Height: 1’–3’ **Growth Rate:** Slow
Habit: Solitary

Status: In Stock
Available Range: 3–100gal.

Macrozamia moorei

Common Name: Carnarvon Gorge Macrozamia
Cold Tolerance: 18°F (-8°C) **USDA Zones:** 9-11

Typical Height: 10’–13’ **Growth Rate:** Moderate
Habit: Solitary

Status: In Stock
Available Range: 3–100gal.



Blue and Green forms available

Other Species of Macrozamia:

M. fawcettii, *M. riedlei*, *M. spiralis* (in stock)

M. dyeri, *M. fraseri*, *M. lomandroides*, *M. lucida*
 (occasionally available)

M. stenomera (on request)

M. douglasii, *M. elegans*, *M. glaucophylla*, *M. macdonnellii*
 (looking for)



CYCADS

The genus MICROCYCAS

From the Greek “*micro*”, for small, and “*cycas*”, from the Greek “*kykas*” meaning palm, referring to the palm like growth habit.

Family: *Zamiaceae*
Subfamily: *Zamioideae*
Tribe: *Zamiaceae*
Subtribe: *Microcycadinae*



A small genus of only one species, *Microcycas calocoma*, the epithet derived from “*calos*”, Greek for beautiful, and “*come*”, hair, meaning beautiful crown of leaves. *Microcycas* are native to Cuba, from the western part of the Island in the Pinar del Rio province to the mountains northwest of San Diego de los Banos, over into the region near San Andrace. Typically they have solitary stems, but are sometimes branched due to damage caused by storms. The older specimens have a soft, cork-like bark that provides a degree of insulation from natural forest fires.

Culture: *Microcycas* grow in low, grassy to bushy hillsides and ravines, usually under trees and near streambeds. They prefer relatively dry areas with acid clay soil and elevations of 100 ft. - 300 ft.

Microcycas calocoma

Common Name: Palma Corcho - Spanish, referring to the soft, cork-like bark.

Cold Tolerance: 26°F (-3°C) **USDA Zones:** 9b-11

Typical Height: 2' - 33' **Growth Rate:** Moderate

Habit: Solitary

Status: Occasionally Available

Available Range: 1-10gal.



The genus STANGERIA

For William Stanger, a surveyor general of Natal, South Africa.

Suborder: *Zamiineae*
Family: *Stangeriaceae*
Subfamily: *Stangerioideae*



Stangeria is the only cycad genus other than *Microcycas* with only a single species, “*eriopus*”, derived from “*erio*”, Greek for woolly, and “*pes*”, foot, no doubt referring to the tomentum covering newly emergent leaves. *Stangeria* grow wild in KwaZulu-Natal in South Africa, inhabiting a narrow strip between a half mile of the coast to 50 miles inland. The mature leaves are pinnate and fern-like, 1' - 6' long. The heavy harvesting of these plants for their medicinal value is a threat such that *Stangeria eriopus* is listed in Appendix I of CITES.

Culture: *Stangeria* prefer sandy soils rich in humus and somewhat acidic. The soil should be kept moist, yet not wet. They can accept sun, yet afternoon shade produces better results. The tubers should always be planted just below the soil line.

Stangeria eriopus

Common Name: Bobbejaankes - Baboon Food

Cold Tolerance: 28°F (-2°C) **USDA Zones:** 9-11

Typical Height: 1'-5' **Growth Rate:** Slow to Moderate

Habit: Clustering

Status: Occasionally Available

Available Range: 1-10gal.



The genus ZAMIA

From the Greek “*azaniae*”, cone, in reference to the “*sporophylls*” (cones) produced by members of the genus.

Family: *Zamiaceae*
Subfamily: *Zamioideae*
Tribe: *Zamieae*
Subtribe: *Zamiinae*

The subtribe includes one other genus, *Chigua*

A large genus of about sixty species of cycads widely distributed in tropical America, with one species, *Zamia floridana*, ranging through Florida and into coastal Georgia in the southeastern U.S. The species range from dwarf plants with subterranean stems to shrubby forms with emergent stems, and at least one species, *Zamia pseudoparasitica*, grows as an epiphyte in the branches of trees. All the species of *Zamia* produce leafy crowns of foliage that make them choice garden specimens and most varieties branch heavily in age to produce handsome clumps. A number of species regularly experience seasonal droughts in habitat and several grow in areas subject to frosts.

Culture: *Zamia* species accept sun, but are often more luxuriant when grown under shaded conditions. Established plants tolerate drought. Good drainage is essential.

Zamia integrifolia

Common Name: Florida Coontie, *Zamia floridana*
Cold Tolerance: 18°F (-8°C)
USDA Zones: 8b-11

Typical Height: 1.5’–2.5’
Growth Rate: Slow
Habit: Clustering

Available Range: 1–15gal.
Status: In Stock

Other Varieties of *Z. integrifolia*:
 “Palatka Giant”, “Umbrosa”



Zamia maritima

Common Name: Cardboard Palm, *Zamia furfuracea*
Cold Tolerance: 28°F (-3°C) **USDA Zones:** 10-11

Typical Height: 2’–4’ **Growth Rate:** Moderate to Fast
Habit: Clustering

Status: In Stock
Available Range: 15–45gal.

Zamia pumila

Common Name: Dominican Zamia
Cold Tolerance: 15°F (-9°C) **USDA Zones:** 8b-11

Typical Height: 4’ **Growth Rate:** Slow
Habit: Clustering

Status: In Stock
Available Range: 3–25gal.



Zamia vasquesii

Common Name: Dwarf Mexican Zamia
Cold Tolerance: 18°F (-8°C) **USDA Zones:** 9-11

Typical Height: 2.5’–5.5’ **Growth Rate:** Slow
Habit: Clustering

Status: In Stock
Available Range: 7–15gal.



Other Species of *Zamia*:

Z. amblyphyllidia (both red & green emergent fronds), *Z. fisheri*, *Z. integrifolia*, *Z. loddigesii* (all in stock)

Z. paucijuga, *Z. spartea*, *Z. standleyi* (occasionally available)

Z. inermis, *Z. lucayana*, *Z. splendens* (looking for)

