

A WORD OR TWO ABOUT GARDENING

Gingers: Attractive Foliage and Stunning Flowers for a Shady Miami Garden

This is the second of three articles on the use of the Zingiberales, a taxonomic order of mostly medium to large sized herbaceous perennials, as tropical accent plants. The first article discussed items suited to full/part sun exposure such as ornamental bananas, bird-of-paradise and traveler's tree. The focus now is on more shady areas of the yard: below we will consider gingers and then in a subsequent article conclude with heliconias. Although providing lush tropical foliage, it is for their magnificent floral displays that these two groups of plants are most admired.

The plants commonly lumped together as **gingers** comprises two families: the **Costaceae** (which at present includes **Costus**, often referred to as spiral gingers; **Dimerocostus**, crepe ginger; **Tapinochilos**, pineapple ginger and **Monocostus**, lemon ginger) and the **Zingiberaceae**. This latter family is much larger and apart from the many species of ornamental use, includes those that are the source of well known spices such as ginger, cardamom and turmeric. For landscaping purposes the following genera are of interest: **Alpinia** (includes red and shell gingers); **Burbridgea** (golden brush); **Curcuma** (hidden lilies); **Hedychium** (ginger lilies); **Globba** (dancing girl gingers), **Kamperia** (peacock gingers) and **Zingerber** (pine cone ginger) as well as some less familiar taxa. As an aside, a recent taxonomic revision of the Costacea resulted in some of the species currently classified as *Costus* being removed to three new distinct genera (*Cheilocostus*, *Paracostus* and *Chamaecostus*). Eventually these changes should show up in garden books and catalogs. For taxonomists it is all about creating a more logical system of classifying plants – some gardeners may throw up their hands in confusion!

Apart from a few well known species such as alpinias, gingers are under utilized in Miami-Dade landscapes. Found inhabiting the margins or understory of tropical forests, gingers in local landscapes should receive bright light, any exposure to direct sun being limited to the coolest part of the day - there are a few exceptions that will be noted below. They need an organically enriched, moist but free draining soil. Avoid over watering especially during periods of cool winter weather – wet soil below 50°F is an invitation to rhizome rot. This is especially so for species such as curcumas that die down and become dormant where water should be withheld until new shoots are seen in late winter/spring. Provide regular applications of a high potash (K) fertilizer such as a slow release 8/2/12/ palm special. Gingers require far less fertilizer however than bananas and will fail to flower if too much is used. Trace element deficiency symptoms that can develop on Miami-Dade's high pH limestone soils (e.g., iron) may need to be corrected. Gingers can be started from sections of rhizome in spring using a loose, airy but moist organic soil. Ensure that they are not planted too deep (at most 1-2"), and avoid over watering to prevent rhizomes from rotting. Although usually grown from rhizome divisions, *Costus* unlike most other gingers is relatively easy to grow from stem tip cuttings.

The common names for *Costus*, **spiral ginger** or **spiral flag**, refer to the spiral arrangement of the somewhat fleshy leaves. Individual leaves clasp the stem by

means of a closed tubular sheath with a leaf blade that is more or less elliptic. The leaf surface is smooth though in some species there is a covering of fine silky hairs. At the end of each stem is an upright, cone to ellipsoid shaped inflorescence made up of colorful imbricate bracts (closely overlapping), between which single or paired flowers emerge. The most notable floral feature is the labellum, a tubular petal like structure formed by the fusion of infertile stamens (there is only a single fertile stamen). The labellum can be in the form of a rigid tube, usually red to yellow, or more open and spreading and white to pale pink. This reflects a difference in the mode of pollination: birds as opposed to bees respectively. In some species the inflorescence is basal, borne on a scape (leafless stem). An individual inflorescence is long lasting and for this reason there is increasing interest in *Costus* in the floral trade as both a cut flower and potted plant.

Several spiral gingers are available locally, one of the most popular with south Florida growers being *Costus woodsonii* - also known as “**Red Buttons**” or “**Dwarf French Kiss**” in the nursery trade (these are not cultivar names). This species grows to 3-4' with mid green leaves, flowering from late winter to early summer. Each inflorescence lasts for 4 – 6 weeks and consists of a compact cone of bright red bracts from which protrude individual orangey yellow flowers. Larger than *C. woodsonii*, and often misidentified as such, the plant sold as *Costus* “**French Kiss**” is believed to be another species, *C. spiralis*. It grows to 4-6' with slender stems that each carry a loose spiral of leaves and an inflorescence having rosy red to pink bracts and pink flowers.

The **red tower ginger**, also available locally, is a favorite in tropical gardens worldwide as a source of brilliant color. It is usually listed as *Costus barbatus*, but according to one author this is a species unknown in cultivation and what has been sold as red tower ginger is actually *Costus comosus var. bakerii*. Irrespective of matters of nomenclature, the inflorescence is one of the most spectacular of all spiral gingers, reaching up to 12” with bright red U-shaped bracts and vivid yellow flowers. Unlike other *Costus* spp., red tower ginger only flowers on stems from the previous year.

More widely grown, *Costus speciosus* (**Malay ginger**) is root hardy throughout Florida. It is admired both for the 2” flowers with their ruffled white to pale pink labellum and yellow center, as well as the leaves - each is up to 12” long with the undersides covered with fine short hairs. The cultivar ‘**Variegatus**’ has green and white variegated leaves, but is not as free-flowering. Malay ginger can tolerate somewhat more sun (preferably early morning) than other species. Foliage is liable to burn in day long south Florida sun, especially when the soil begins to dry out. Another spiral ginger that is root hardy throughout Florida is known commonly as the **Indianhead ginger**. This again appears to be a case of misidentification the actual species being *Costus scaber*, not *Costus spicatus* as was widely believed. The spindle shaped inflorescence has red bracts and orangey yellow flowers. Anecdotal evidence suggests greater tolerance of dry soils compared to other *Costus* spp.

Apart from the variegated cultivar of *C. speciosus*, there are other spiral gingers that can contribute striking foliage/stems as well as a colorful floral display. A spiral

ginger commonly offered as *Costus amazonicus* (though evidence points to it actually being a **variegated form of *Costus arabicus***) is particularly attractive. It has creamy white leaves with both pale and dark green streaks. As with many variegated plants, there is a tendency for foliage to gradually revert to all green.

Growing to about 5', the stems and leaf undersides of ***C. erythrophyllus* (oxblood ginger)** are a conspicuous purplish red, a perfect foil for the 2" flowers (white to pale pink with a yellow/maroon throat). It is suited to locations providing bright light with only very limited direct sun exposure – contrasts well with the variegated alpinias (see below). ***Costus stenophyllus* (often listed as bamboo ginger)** has unique thin 4-6' reed like stems that are conspicuously spirally striped light grey green and brown with unusual, long, slender, linear leaves (*sten* = narrow). Each cigar shaped inflorescence consists of elongated red bracts between which yellow flowers appear, and arises basally on a leafless stem. ***Costus malortieanus*** is a low growing spiral ginger (3-4') that has long been admired for its foliage – large rounded leaves with broad dark green bands separated by thin pale green stripes, both surfaces soft and downy. Apart from the foliage the flowers are quite distinctive, the lobes of the labellum spreading to 2", maroon with irregular yellow stripes. If you are new to spiral gingers this attractive specimen is relatively easy to grow and can be appreciated for both the foliage and inflorescence.

Spiral gingers are found in the tropical Americas, SE Asia and Africa but relatively few of the many **African species** are presently in cultivation. One that is commonly available, ***Costus afer*** is a large species from W. Africa (*afer* = African) growing from 8 - 12'. Inflorescences are either terminal or basal with bright green bracts and numerous cup-shaped white flowers. A relatively recent introduction is the smaller African species, ***Costus talbotii*** (offered as "**Blushing Spiral**"). Less tolerant of cool temperatures it is essentially epiphytic (like a bromeliad) and requires a loose open organic soil (coarse sand/Perma-Till, Canadian peat and chipped bark). If planted too deep it is prone to rot and should be raised slightly above grade on poorly draining soil. Blooming throughout the warmer months of the year, *C. talbotii* flowers have a spreading white labellum and delicate pale pink petals. The inflorescence occurs terminally on leafy stems, or arises basally on a leafless scape.

The remaining genera within the Costaceae are much smaller with *Monocostus* containing a single species (***M. uniflorus*, lemon ginger**) and *Dimerocostus* two species of which one (***D. strobilaceus*, crepe ginger**) is of horticultural interest. For both species provide enriched moist soil in a sheltered location protected from cold drying winds in winter. Lemon ginger is the tenderer of the two, suffering damage as temperatures fall below 50°F. It is a pleasing, diminutive plant with rather lax almost decumbent stems bearing 2" somewhat fleshy leaves. It is unique among the Costacea in that flowers are produced singly from leaf axils and not as part of a complex bracted inflorescence. Each flower is bright yellow, surprisingly large (2-3") for the size of the plant (18 -24"). Lemon ginger should be grown in bright light away from direct sun exposure. Crepe ginger is much larger with leafy stems growing to 12' and carrying a terminal spike of flowers. Individual flowers are yellow, the labellum open with incurved margins. For best flowering crepe ginger should receive some early morning sun then part sun.

The final member of the Costaceae is a genus of about 10 species of which one, ***Tapeinochilos ananassae*** (**pineapple ginger** or **Indonesian wax ginger**) is commonly cultivated for the spectacular inflorescence. This is the most tropical of the spiral gingers requiring year round warmth, humidity, an enriched acidic soil and shade from hot direct sun. A vigorous clumping plant, the reed-like 8' stems freely branch giving it more of a shrub like appearance. The leaves are spirally arranged, up to 6", obovate to lanceolate. The 6-8" inflorescence resembles a pineapple and is made up of stiff, bright red, waxy bracts with recurved tips. Short, bright yellow, tubular flowers appear between the bracts. Each inflorescence is borne on a leafless scape or terminally on one of the leafy stems. Flowering is improved with moderate fertilizer (two applications in spring then late summer using 1½ lb per sq yd of a slow release 8/2/12), with thinning of leafy stems in late summer. If you can provide the requisite growing conditions and space, pineapple ginger is a noteworthy addition to any tropical shade garden.

The **alpinias** form the most extensive group of "true" gingers with more than 230 known species found in SE Asia, NE Australia and the western Pacific, including the two largest species (*Alpinia boia* and *Alpinia regia* both growing to more than 25'). Most species grow between 3 to 9' including the 5 or 6 of current ornamental interest. Alpinias are rhizomatous, clump forming herbaceous plants with aromatic leaves and stems (ginger-like aroma). Like many other true gingers the stems are pseudostems: when cut you will see they are made up of many layers (leaf sheaths) tightly compressed together. Leaves are more or less lance-shaped, arranged in two ranks on the upright reed-like pseudostems. The inflorescence is an erect or pendent branched spike carried terminally on a leafy stem. Colorful tubular bracts are present in some instances (e.g., red ginger) and form the main ornamental feature, the actual flowers being partly hidden. In other alpinias (e.g., shell ginger) each flower is subtended by bracteoles with the dominant floral structure being the prominent lobed labellum (composed of two modified stamens). Inflorescences form only on two year old stems so expect a poor flower display if a clump is thinned indiscriminately. Removing stems as they finish flowering helps to prevent clumps from becoming untidy.

Alpinias flower best with some sun exposure (early morning in Miami-Dade, then partial shade). Plant in a moist organically enriched soil - foliage, especially if variegated, will burn if exposed to full day sun in Miami-Dade particularly if the soil becomes too dry. Larger specimens should be sheltered from the wind to prevent the leaves from tearing. Provide regular applications of a slow release fertilizer and correct trace element deficiency symptoms that can develop on local limestone soils - iron (interveinal yellowing) and manganese (distorted leaves). Where fertilizer potash is insufficient, older leaves will appear pale with brown necrotic areas. Alpinias grow vigorously and where they spread to outgrow their allotted space in the landscape, rhizomes should be dug up split and replanted.

Shell ginger (*Alpinia zerumbet*) growing to 9 – 11' is the most widely grown species of ginger in Miami-Dade landscapes - either the species type (for the inflorescence) or the cultivar '**Variegata**' (for foliage). The pendent inflorescence first resembles a string of large porcelain tears before individual flowers open to reveal

the enlarged scoop shaped red and yellow labellum. The cv. 'Variegata' is often reluctant to flower but is grown primarily for the year round display of green and yellow variegated foliage. This is a striking, fail-safe accent plant for a partly shady corner of the yard or foundation plant for the north side of a residence. The dwarf selection of 'Variegata' growing to no more than 12" makes a suitable groundcover where there is partial shade. The *A. zerumbet* cultivar '**Variegated Chinese Beauty**' is not as common but is outstanding, the dark green leaves flecked yellowish green. Two other alpinias grown for their variegated foliage are locally available: **A. formosana** (**pinstripe ginger**, leaves mid to dark green with narrow almost parallel white stripes) and, increasingly popular, **A. vittata** (**striped narrow leaf ginger**, dark to sage green leaves with cream/white stripes).

Other shell gingers are becoming available including two hybrids **A. 'Giant Shell Pink'** and **A. 'Giant Shell White'**, large flowers and pleated downy leaves. ***Alpinia calcarata*** (**snap ginger**) and ***A. oxyphylla*** (**pink perfection**) both have upright inflorescences – flowers of *A. oxyphylla* are an especially attractive delicate pale pink. For mildly fragrant flowers, look for **A. hainanensis** (syn. *A. katsumadai*), with an upright cream colored inflorescence.

After *A. zerumbet* the most widely grown of the alpinias is the **red ginger, A. purpurata** and its many cultivars. The species type grows to 12 – 14', dark green leaves 6 – 24", the inflorescence upright, ellipsoid, composed of 1" persistent, deep red, overlapping bracts. These partially open to reveal diminutive white flowers. In the lower part of the inflorescence small plantlets form at the base of spent flowers. These readily root on contact with soil and can be used for propagation. The cultivar '**Eileen McDonald**' with a salmon pink inflorescence is an established popular cultivar. Many other cultivars have been developed in large part because of widespread use of this ginger in the cut flower trade. Available locally look for '**Jungle King**' and '**Jungle Queen**', with inflorescences twice as large as the species type, red and pink respectively. Look also for '**Kimi**' with lavender flowers, '**Polynesian Princess**', variegated pink flowers and '**Tomi Pink**', pink flowers with white margin.

Hedychiums (**ginger lilies**), although tropical, are commonly used in temperate climates as root hardy perennials to create a tropical feel during the summer growing season. Providing enchanting flowers, often with an exquisite fragrance, and lush foliage, they are the most widely grown of the ornamental gingers. In the absence of frost most species will retain foliage throughout the year given a warm winter climate (a few cool climate species enter into dormancy in fall irrespective of winter conditions). In sub-tropical/tropical areas with a distinct dry season they can also become dormant – this is frequently the case in Miami-Dade during winter, foliage often dying down as a result of a lack of soil moisture rather than cold temperatures. For this reason caution is advised in using hedychiums in sections of the landscape that call for a year round accent plant.

To thrive hedychiums need to be provided with a moist (even wet for species such as *H. coronarium*), organically enriched, but not heavy soil. For reliable flowering, some sun exposure is necessary (up to midday) followed by partial shade. Flowers appear from summer into winter depending on species, as part of a terminal,

cylindrical to ellipsoidal spike. Individual flowers consist of a long narrow tubular corolla and two petal-like staminodes (modified stamens), a hood like labellum and a single prominent stamen with elongated filament. Flowers occur in a range of colors from white to yellow, red and pink, with many shades and hues found in the numerous cultivars that have been developed.

White ginger lily, *Hedychium coronarium* is the most widely grown species, being widely used in the perfume industry. A few local nurseries offer container specimens, while packaged sections of rhizome are frequently available in garden centers. This species grows to about 6-7' (under favorable conditions - rarely as large locally) with erect stems carrying two ranked 8 – 24" leaves. Other widely grown species include *H. flavescens* (pale yellow flowers), *H. gardnerianum* (golden yellow flowers) and *H. coccineum* (pale orange to almost scarlet flowers). One much rarer but unusual species is the 3-4' *H. greenii*: the foliage is attractively colored (dark green with a purplish red underside) and bulbils (plantlets) form from spent flowers (cf. *A. purpurata*). The flowers themselves are ruffled, deep salmon red and delicately scented. This species needs more shade as well as moist soil to ensure flower production. There are numerous *Hedychium* cultivars from which to choose. These include those of renowned Florida grower Tom Wood who is responsible for some of the world's most popular and attractive cultivated gingers. Four of the better known Tom Wood hybrid hedychiums are '**Elizabeth**' (9' stems and fragrant orangey pink flowers), '**Pink V**' (4-5' stems and cream colored flowers with salmon pink center), '**Luna Moth**' (3" white flowers on 3-4' stems – best with limited sun exposure) and '**Golden Glow**' (numerous 4' stems, bright orange flowers).

I have arbitrarily limited discussion of **curcumas** (hidden lilies), **globbas** (dancing ladies), and **zingibers** (pine cone ginger) and two other attractive less well known gingers (*Kaempferia* and *Siphonochilus*). For the most part these all enter an obligatory period of winter dormancy and are more appropriately used in shady areas as seasonal bedding/edging plants rather than as accents. Although kaempferias are principally grown for their attractively patterned foliage, they also have colorful, if not especially showy, lavender or white flowers. Some species such as *K. pulchra* are relatively easy to grow, well adapted to moist limestone soils when enriched with some organic matter and useful in shady spots as a seasonal groundcover.

Burbidgeas are dwarf (to 1') evergreen, mostly epiphytic gingers found growing in the canopy of Borneo's tropical forests, but can be cultivated in a loose but moist organic growing medium (include some small pine bark chips used for growing orchids). They make excellent container plants if grown in bright light, and tend to flower best when allowed to become somewhat root bound. It is important not to plant the rhizome more than 1/2" below the soil surface or over water. Under favorable conditions (year round warmth, moisture and filtered sun) burbidgeas could be used as a limited groundcover. One species *Burbidgea schizocheila* (**golden brush**) is gaining in popularity as an indoor pot plant for its waxy slightly rugose leaves and 6" spike of bright golden yellow flowers. Also look for *B. nitida* (**orange ginger**), with deep yellow flowers that, quickly turn pinkish orange.

Finally the **torch ginger (*Etlingera elatior*)** which, like bird-of-paradise, has one of the most distinctive inflorescences found in the tropical garden. On all accounts,

this is a large, bold plant growing up to 15 – 20' with 2-3' two ranked leaves on an erect cane like stem – an alpinia on steroids! Young leaves have a reddish purple tinge, but it is the large 10" oblate to conical bracted inflorescence that makes this ginger such a spectacular sight. The large, deep pink to red, outer bracts curl downward to form a frill around the base of the inflorescence revealing smaller densely packed flower bracts, also deep pink with white margins. Finally small tubular flowers emerge in between the floral bracts, the labellum carmine red with yellow margins. Each inflorescence is born separately on a 3-4' leafless scape. Cultivars are available, though in limited supply: 'Yamamoto' (porcelain pink), 'Red Tulip' (inflorescence is smaller and only partially opens thereby resembling a tulip) and an unnamed form with a smaller all white inflorescence.

Torch ginger requires moist organically enriched soil and a site protected from cold dry winds, otherwise foliage will brown and die down. In Miami-Dade provide some early morning sun exposure, thereafter partially shade. Most important is plenty of room – this is a large, vigorous rhizomatous plant and although unlikely locally to reach the size attained in a humid truly tropical climate, the clump needs plenty of room to expand. Care is much the same as for alpinias including the use of a slow release fertilizer containing sufficient potash – like alpinias, torch ginger can exhibit yellowing of foliage resulting from a deficiency of potassium.

It is surprising that gingers are not more widely used in Miami-Dade landscapes given their attributes of attractive foliage and exceptionally showy flowers. All the more so since they are comparatively easy to grow and relatively free from pests. If you don't have a suitable outdoor area, there are many smaller gingers that can be easily grown as container plants either indoors or to add color to a partly shaded patio.

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