

clude the abstract, meditative stone garden at Ryoanji. The bold and brash rock garden created at Nijo Castle in Kyoto was created by Tokugawa as an expression of his powerful political control of the nation. The tea garden, is a total separation from the real world, where one becomes totally focused on the immediate, striving for total involvement with the process of tea, and the beauty of the artifacts assembled to make it, in full equality with other guests. What is it you want your garden to express to its visitor?

If you carefully evaluate your garden, using the criteria discussed, you may find there are opportunities for refinement. You may find your garden can become more peaceful, more inviting, more evocative, and more focused, and that the satisfaction you gain from it multiplies many times over. It is worth a little mental exercise the next time you take a break. Give it a try!

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Hardy Garden Ferns

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Ferns are among the nicest possible things to have around. Long relegated to the role of "companion" or "background" plants, observant gardeners have become aware of their many virtues. There is a fern for practically any place and any purpose. In nature, they may be found anywhere from the tropics to the arctic. They grow not only in the woodlands we normally associate with them, but also can be found on bare cliffs, in swamps and even in deserts. Physically they can range in size from large trees to minute forms. They may be coarse or delicate, succulent or filmy, crown forming or widely creeping. Some require lime, some are lime haters, but most are remarkably adaptable. Also be aware that some may be invasive weeds and some are virtually non-cultivable. Unlike seed plants, ferns are dependent upon water to complete their life cycle. Many will, however, grow where it is not wet enough for reproduction. In general, the ferns most suitable for our gardens prefer a moist soil, high humidity and enough shade to maintain these conditions.

Ferns are essentially wildlings. Whether they are native to this country or are exotics, no fern is far removed from its natural habitat. If a fern in nature is found only in a very specialized environment, you must be able to reproduce this environment almost exactly in order to grow it. If it may be found growing well in a number of different habitats, it will be easy for you to grow and should be quite tolerant of a variety of conditions. If it grows well in what should be a stressful environment, or has spread rampantly throughout an area, be very cautious about introducing it to your garden.

In general, ferns need a soil which is constantly moist, but light and well aerated. Planting mixes contain 50 to 75% humus with perlite or coarse sand added to improve drainage. Working about four inches of mulch or coarse compost into the planting bed seems the easiest way to prepare the garden. Their roots are shallow, so if drainage is good the soil does not have to be prepared deeply. All plants require light, but most ferns grow well in moderate shade. Preference seems to be against a north-facing wall which is open to the sky, or in high shade. Given a very organic soil, ferns have little need for fertilizers, in fact, they are sensitive to any excess of the faster-acting types. In the garden, small size and slow growth are more likely associated with limited water.

With good, clean culture you may never have disease problems. Ferns are quite sensitive to insecticides. Test out any new spray on a few plants. Avoid the liquid emulsion sprays which contain oils which damage ferns. Use dust or sprays made from wettable powders. Reduce the recommended dosage to one-fourth. To prevent disease, start with healthy plants. Keep the crown of the plant above the soil and the mulch pulled back from the crown. Avoid over watering; water in the earlier part of the day and space the plants far enough apart for adequate air circulation.

There is no place for a hoe or rake in the fern bed. Rhizomes (root stocks) are shallow and the growing tip is susceptible to damage which may kill the plant. Mulching will help prevent weeds. Allow old fronds to remain on the plant over winter and add a light leaf mulch to help protect both evergreen and deciduous types. Do not smother. Air as well as moisture must always reach the roots. Pull off the leaf cover carefully in the spring. Developing fiddleheads are easily damaged. Trim off dead and old or damaged fronds before the fiddleheads have elongated. This will minimize the injury to new fiddleheads and provide room for their development. Spring is a good time to divide, transplant or repot ferns; try to do this before the fiddleheads uncoil. Mulch the soil as needed, keeping the mulch away from the crowns.

Ferns are truly the grace notes of the garden, and perhaps the most graceful of all is the **Northern Maidenhair**, *Adiantum pedatum*. If you grow any ferns at all, this is a "must have". The English **Hart's-tongue Fern**, *Asplenium scolopendrium*, doesn't look at all ferny. The basic form is a simple undivided tongue shape, but cultivars are wonderfully variable, with crested, ruffled, crinkled and cut forms, all evergreen. The Hart's-tongue fern likes lime, but will grow in acid soil. Wonderful as an accent on or next to a wall or steps! The **Lady Fern**, *Athyrium filix-femina* is questionably a "lady". She tends to have taking ways, spreading progeny near and far. Her many forms and cultivars are wonderful and much less invasive. All *Athyriums* are deciduous. The **Japanese Painted Fern**, *Athyrium niponicum 'Pictum'* is the glory of the spring garden. The fronds are flushed with purple and brushed with white. A Japanese native, it glows in the shade. Another oriental wonder is the **English Painted Fern**, *Athyrium otophorum*. Native to Japan and China, its reddish stipe and yellowish green fronds are not only very attractive, but distinctive. Who knows whence came its common name; it is certainly neither English nor painted in appearance. The **Holly Fern**, *Cyrtomium falcatum*, is evergreen, with shiny holly-like leaves which tend to winter-burn in the sun. This is a very attractive fern, but it is not reliably hardy north of Richmond, Virginia. The foliage of a close relative, *Cyrtomium fortunei*, is not as shiny, but the plant is much harder and resists winter burn.

Mainstays for the garden are the *Dryopteris* clan. These are collectively known as wood ferns, shield ferns or male ferns. In general, strong growers and crown formers, they appreciate a moist soil, but are remarkably tolerant to drought. Golden scales grace the emerging fronds of the **Golden Scaled Male Fern**, *Dryopteris affinis*. There are special dwarfed and crested forms. The **Shaggy Shield Fern**, *Dryopteris cycadina* has masses of long slender black scales which clothe the underneath of the rachis, giving a sinister, dramatic appearance to the

emerging fronds. This is often offered as *D. atrata* or *D. hirtipes*. It is easily grown and hardy. The **Autumn Fern**, *Dryopteris erythrosora*, is one of the best evergreen wood ferns. Young fronds are a bright coppery color which deepens to green as they mature. Attractive all year, it is one of the mainstays of the winter garden. The **Male Fern**, *Dryopteris filix-mas* has many variations in form which have increased the popularity of this easy and strong-growing fern. **Goldie's Wood Fern**, *Dryopteris goldiana* is our native giant wood fern. This is a very hardy and large deciduous fern. The **Fancy Wood Fern**, *Dryopteris intermedia* is a native and hardy evergreen wood fern. Graceful, with finely divided fronds, it is frequently collected for florist use. My very favorite of our natives is the **Marginal Wood Fern**, *Dryopteris marginalis*. This wonderful and very hardy evergreen native is blue-green in color, leathery in texture, and vase-like in form. The **Japanese Wood Fern**, *Dryopteris sieboldii* is most unfern-like and distinctive, with only a few, but very large, leathery pinnae.

The **Japanese Climbing Fern**, *Lygodium japonicum* thinks it is a morning glory! It will twine on a string and may actually climb 20 feet. This I use to cover an arbor leading to the back of my yard. It is not reliably hardy far north of Richmond, Virginia, but will grow at least as far north as New York with protection. It is a vicious weed in the deep south, and apparently doesn't get enough summer heat to grow well in the northwest.

The **Ostrich Fern**, *Matteuccia struthiopteris* is a vigorous native which may grow to five feet or more. This fern not only has vase-shaped growth, but spreads by underground rhizomes much like a bamboo. The Ostrich Fern makes a strong accent and is even used in foundation plantings, but may need restraint. The **Cinnamon Fern**, *Osmunda cinnamomea* loves water. Fertile fronds in early spring are cinnamon colored. The **Interrupted Fern**, *Osmunda claytoniana* gets its common name from the fertile pinnae which interrupt the frond of this large and valuable native. The **Royal Fern**, *Osmunda regalis* is often called the

flowering fern because of its clusters of fertile pinnae at the ends of the fronds. The **Southern Beech Fern**, *Phegopteris hexagonoptera* has triangular fronds, and is wonderful for naturalizing in the woodland. It is deciduous and really looks like a wood fern. Its close relative, the **Northern Beech Fern** is easily grown in the north, but succumbs to the heat of southern summers.

The **Polystichums** are another very valuable group for garden use. The **Christmas Fern**, *Polystichum acrostichoides* is our own eastern native evergreen. This makes a good moderate-sized specimen, is an excellent ground cover and is useful for erosion control. Its west coast counterpart, the **Common Sword Fern**, *P. munitum*, is a much taller and stronger growing there. It doesn't do at all well on the east coast. The **Tassel Fern**, *Polystichum polyblepharum* has a firm texture, with shiny fronds in an attractive rosette. The fiddleheads are wonderfully shaggy. The **Soft Shield Fern**, *Polystichum setiferum* is most variable, but always attractive. Numerous bulbils that may be produced along the rachis will form new plants if the frond is pegged down.

Problem Children

Even nice plants have not-so-nice-relatives. **Bracken** (*Pteridium aquilinum*), **Virginia Chain Fern** (*Woodwardia virginica*), **Sensitive Fern** (*Onoclea sensibilis*), **New York Fern** (*Thelypteris noveboracensis*), and **Hay-scented Fern** (*Dennstaedtia punctilobula*), are among those that given an inch will take a mile. There are places that they may be useful, but be sure that they are placed where they can be restrained and cannot overgrow less vigorous treasures!

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