



### Ferns.

There are few plants more generally interesting and attractive to all lovers of nature than ferns. Though destitute of flowers, the deficiency is made up by their graceful forms, their luxuriant vegetation, and the charm they impart to those localities where they spontaneously grow. The very name calls up a thousand charming pictures, and presents to the imagination now a wide expanse of undulating moor, where the heather and the brake divide the ground between them, and furnish the favorite haunts of the grouse and the deer, and now some cool and shady retreat, made musical by the flow of waters, and thickly strewn in wild profusion with the most lovely forms of vegetable life that nature, lavish in beauty, can produce. Here from moist banks or umbrageous recesses springs up the elegant shield-fern, forming by its circlet of fronds a green chalice whose graceful outline the sculptor might select as a model for the choicest works of art; here towers in regal pre-eminence, unsurpassed in beauty by any of its race, and rearing its head above them all amid the

leaves of the forest, the rightly named king of ferns, or Osmund Royal; and there, from the crevices of moss-covered rocks, or lining the walls of the cool grotto with a tapestry of the tenderest green, wave the slender threads and delicate leaflets of the Maiden-hair, the most graceful perhaps of all the tribe. Similar scenes will present themselves to every reader who is at all familiar with Nature in her spontaneous aspects. But it is needless to multiply examples; nor must we be led by the fascination of the subject and the charms of association too far astray from the sober paths of practical horticulture.

This class of plants presents great variety of form, with certain characteristic features that render it an easy task to identify them. They are very generally distributed over the globe. In some tropical islands, they form a large proportion of the vegetation, as for instance, in Jamaica, where they constitute one-ninth of the flora, and the Sandwich Islands, where they reach the still larger proportion of one-fourth. Upon continents, however, they are far less numerous; in equinoctial America, Humboldt does not esti-

mate them higher than 1-36th; and in New Holland, Brown finds them 1-37th. They decrease in proportion towards either pole, so that in France they are only 1-63rd; and in Egypt not more than 1-971st. Northwards of these countries their proportion again augments, forming 1-31st of the plants of Scotland, 1-35th in Sweden, 1-18th in Iceland, and 1-10th in Greenland.

They differ from flowering plants in their structure and in their mode of growth, being destitute of flowers, having no true wood, and growing only from their crown or summit. The part analogous to the stem thus slowly formed, is usually short, comparatively thick, and prostrate or under ground, but in some of the warmer latitudes their trunks are elevated many feet above the surface, and assume the dimensions of a tree, the summit being surmounted with a crown of spreading fronds, and the whole plant bearing a general resemblance to certain well-known



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palms. These gigantic specimens of the tribe are called tree-ferns. Their trunks are not, however, identical with the woody stems of trees, but are formed of the closely compacted stalks of the fronds, or fern-leaves, cohering together and forming a hollow cylinder, or surrounding a central column of loose cellular substance, resembling pith.

Tree-ferns are indigenous beyond the Southern tropics as far as Dusky Bay in New Zealand, but have in no case been found native beyond the Northern tropics. They have, however, been introduced and cultivated along with many rare and beautiful tropical varieties of the same class in England and other European countries, and we see no reason why they should not find their way into Canada, and under judicious management add to the attractions of our own conservatories. Many exotic ferns do exceedingly well under glass in this climate, and form beautiful ornaments either of the drawing-room or the conservatory. None of these varieties are more hardy than several species of the tree-ferns. During the last winter a group of New Zealand tree-

ferns stood the test of the severest cold that had visited Great Britain for many years; and this not under the protection of glass, or, indeed, under any covering or shelter whatever. These noble specimens of their class were grown at Killyronan, Ireland, on the estate of Colonel and Lady Louisa Tenison. They had for many years been located in one of the larger conservatories, but having outgrown their accommodations, were, perforce, removed out of doors, and during the very first winter of their exposure passed safely through the ordeal of almost a Canadian temperature. The species thus, as it were, acclimatised in Great Britain, were two species of *Oyathea*, one (*O. medialis*) a noble fern, and further remarkable from the fact of the pith forming a staple article of food among the Maori, and the other (*O. dealbata*) the most light and airy, as well as, perhaps, the loftiest of the New Zealand tree-ferns, its stem often reaching the height of forty or more feet. The ac-

companying illustration represents several fine specimens of tree-fern, grown in Mr. Burley's nursery, Bayswater, England.

The sketch also gives some idea of the very simple and uncostly structures which serve to protect them. Very little heating apparatus, we are informed, is employed, and that of the cheapest kind. We hope to see the cultivation of this most beautiful order of plants extending in Canada, and taking its due place in ornamental horticulture.

We may add, to enhance the reputation of our favorites, that even in an economic point of view, ferns are not useless pieces of beauty. Many of them possess valuable medicinal properties; some of our native species, among others the Maiden-hair, (*Adiantum pedatum*), several varieties of Shield-fern, (*Aspidium*), Osmund Royal (*Osmunda Regalis*), and the Brake (*Pteris Aquilina*), have been and continue to be used in medicine; and in other regions, besides contributing their virtues to the resources of the healing art, several species furnish articles of food, and are otherwise applied by man to economical uses; as examples, we may mention that tubes of pipes are manufactured by the Brazilian negroes from the stalk of *Mertensia dichotoma*, which they call Samanbaya; the bruised stalks of the fragrant *Angiopteris excla* are employed in the Sandwich Islands to perfume the cocoa-nut oil; *Polypodium phymatodes* is also used for the same purpose; the roots of *Nephrodium esculentum* are eaten in Nipal, and those of *Angiopteris excla* in the Sandwich Islands; and many other species are also employed as food in different countries. Our native brake (*Pteris Aquilina*) and the common Shield-fern (*Aspidium Filix Mas*), have been used in the manufacture of beer, and *Aspidium fragrans* as a substitute for tea.