Persimmons. One of the trees that is occasionally sent to the Arboretum for identification is the common American Persimmon (*Diospyros virginiana*). This interesting tree seems to be little known in the North and is often passed unnoticed among many other trees, of different families, but with somewhat similar foliage. The Persimmon, when allowed opportunity for full development, becomes a handsome, tall, medium sized tree with regular branching habit and dark green, somewhat lustrous, alternate, simple, entire-edged leaves which keep in good condition throughout the summer and into the autumn without much change in color, although they occasionally become orange or scarlet. The bark of the trunk is dark gray, or brown tinged with red, and is deeply divided into thick, square plates. It is not generally known that the Persimmon is a native of New England, having been found apparently wild in Rhode Island and Connecticut. It is a tree which is better known and is more plentiful farther south, extending to Florida and Texas.

At the Arboretum the trees are now (June 24) in full flower but the flowers are so hidden by the leaves that the average observer would hardly notice them. The flower buds are four-angled and about one-third to one-half of an inch long. The bell-shaped corolla is composed of four white, fleshy petals, united at the base for one-half to two-thirds of their length, forming a broad barrel-shaped tube, constricted toward the apex and topped by the four free ends of the strongly reflexed lobes of the corolla. At its base each flower rests on four leafy calyx lobes. These usually persist with the fruit. Male and female flowers are usually produced on separate trees in the axils of the leaves and suspended below them. The male flowers, which are smaller than the pistillate, are usually borne in small cymose clusters of two to five or six on slender pedicels; the female flowers, larger than the male, are solitary, on much stouter pedicels and are subtended by much larger calyx lobes. The male flowers fall to the ground soon after opening and shedding of pollen. While the flowers commonly occur as male (or
staminate) and female (or pistillate) on separate trees, rarely both male and female may be found on the same tree, and the imperfect stamens found in pistillate flowers may sometimes produce a little pollen or, occasionally, flowers may be perfect. This feature in the flowering is an important consideration in attempts to grow trees for the fruit, because it is essential to have pollen-producing blossoms where we have possibly fruiting trees, in order to bring about cross-pollination and fertilization of the fruit blossoms. Otherwise they would appear sterile. On this account it is usually a wise plan to have several Persimmon trees growing together, at least one being known as staminate, in order to secure abundance of pollen for fertilization. If, in cultivation, a number of trees are propagated from one mother stem by buds or grafts, it may become necessary to introduce another so-called variety or a pollen bearing seedling into the plantation in order to secure satisfactory pollination. A bud or graft from a known pollen bearing tree inserted upon a pistillate tree may produce satisfactory results. A pollen bearing, flowering branch hung among the flowers of a pistillate tree may help in the problem of fertilization. The blossoms secrete much nectar and this is greedily sought by honey bees and other insects at flowering time.

The American Persimmon is perfectly hardy in the latitude of Boston, and in old gardens in and about Boston occasionally good, large trees are found, sometimes 40 or 50 feet high, although they are often unrecognized. For many years the American Persimmon has been grown or selected with the object of gaining improved fruit. This native fruit has been recognized as edible since the visits of very early voyagers to America. De Soto, as early as 1539, learned from the Indians in Florida the value of the fruit and it was appreciated by his men as a welcome addition to their scanty fare. The earliest published record of the fruit appears to have been made by him in 1557. The tree was introduced into England before 1629. The Persimmon in the northern part of this country often produces fruit of a strong, astringent quality, especially in the early autumn and before the fruit has been frozen several times. By careful selection and propagation and the elimination of the individuals which produce the poorer quality of fruits, the American Persimmon has been brought to a fair state of perfection for fruit, although it is still lacking very much the improvement which has been brought about by the Japanese and Chinese in the species which grow in the Orient. The best of these is known as Diospyros kaki, the fruit of which has many shapes, in many varieties, and strongly suggests the fruit of some of our best tomatoes. Unfortunately, so far as tried, D. kaki has not proved hardy enough in the district about Boston to produce fruit, although it has become a practical orchard tree farther south, at least as far north as Virginia. Orchards of Chinese or Kaki Persimmons are common near Peiping (Peking), China, which is in the latitude of Philadelphia. As in the case of the Oriental species, the fruits of the American Persimmon vary considerably in color and form, usually they are pale orange or red, with a light gray bloom, becoming yellowish brown. They are sometimes oblate or flattened and in other cases slightly oblong. While
DIOSPYROS VIRGINIANA

Fruit—1, Fruiting branch; 2, oblong fruit; 3, vertical section of fruit; 4, cross section of fruit; 5, seed; 6, embryo.

About two-thirds natural size.

From drawing by C. E. Faxon for Sargent's "Silva of North America".
usually containing 1 to 8 large, flattened seeds, some trees are found on which the fruits are seedless or which rarely produce seeds, a desideratum sought by the plant breeder and in which Japanese and Chinese have been eminently successful with their species. In the natural state they vary very greatly in size, from that of a small cherry to that of a large plum, or about an inch and a half in diameter, or, in cultivation, up to two inches in diameter. On some trees they become so soft when fully ripe that in falling to the ground they are crushed by their own weight, while on other trees, growing under identical conditions, they remain very hard even after severe freezing. Some trees in the South produce fruit which is sweet and luscious without the action of frost, and on adjoining trees it preserves its acidity when ripe, never becoming really edible. So, by merely selecting the best which we find in nature, very important advances may be made in starting a campaign for the improvement of these fruits. This has been recognized by some enterprising growers and nurserymen and such perfectly natural selected forms are now offered by them. The American Persimmon is one of the most promising of our native trees as a subject for experimentation and improvement. Such work is certain to lead to very interesting and valuable results. Of the already named selections most of them seem to have come from Indiana and Missouri.

Freezing is popularly regarded, in the North, as essential to eliminate the astringent quality in the berries, for the fruit of Diospyros is botanically known as a berry. The astringent quality may be in time totally eliminated so that we may get fruits in the future which are edible in a green state, as is sometimes the case in the Chinese Persimmon. This astringent quality in the fruit is recognized as tannin and in some cases is used in certain industries. An indelible ink has been made from the fruit and the dried, roasted and ground seeds have been used as a substitute for coffee. In central China oil obtained from the unripe fruit of the Chinese Persimmon is used to make hats and umbrellas waterproof; the fruits are dried and preserved as figs are preserved. Seeds of Diospyros are reported to lose their power of germination soon after they have been taken from the fruit and exposed to the drying influence of the air. On this account it has been recommended to keep the seeds within fresh or dried fruits until near the time for planting. The American Persimmon tree develops a distinct tap root and on this account and the general lack of fibrous roots it is reported as not easy to transplant. However, ordinary care is all that is necessary to success, provided the plants have good roots. As particularly desirable forms cannot reliably be reproduced from seed, grafting or budding must be practised in propagating them. Some trees in nature develop sprouts from adventitious buds on roots, thus forming colonies of stems with all the same features as the original.

The wood of the American Persimmon is hard and close-grained, and the so-called heartwood, which is so slow in forming that a hundred years may pass before it is definitely developed, becomes almost black in old individuals. It is from trees of this genus, which is known to include from 175 to 200 named species, that the ebony of commerce is derived, particularly from Diospyros Ebenum, which is found in India and Ceylon and in the Dutch East Indies.

J. G. Jack.