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Baltic Ivy (*Hedera helix* var. *baltica*), one of the Arboretum's introductions, has remained for twenty-five years in modest retirement on the south wall of the Administration Building. Among the millions of visitors who have come and gone during that time hardly one has noticed the plant, read its label or realized that it was in any way remarkable. There *is* nothing unusual in its appearance. The leaves are scarcely different from those of the common English Ivy and even in the technical characters studied by botanists there is little to set it apart. What is remarkable about the Baltic Ivy is its resistance to cold weather. It is hardier than any other true Ivy which has been tried out at the Arboretum and is for this climate, the quickest growing.

Baltic Ivy was discovered by the present curator of the Herbarium, Alfred Rehder, on one of the trips he made to Russia when preparing the Bradley Bibliography for the Arboretum. He found it growing as a ground cover in the pine woods near Riga, in what is today the republic of Latvia. Since this was outside the known range of the common Ivy, and in a region of very cold winters, he not only collected specimens for the Herbarium but arranged with his host, Baron von Sivers, to have living plants sent back to the Arboretum.

The plants sent by the Baron arrived safely in 1907 and in the twenty-five years since that time they have grown into a solid mantle of green reaching well above the second story windows. They look, as has been said, much like any other Ivy except that they do not become badly discolored during cold weather. Perhaps their most noticeable characteristic is the variation in leaf size, some of the sprays bearing small, dark-colored, conspicuously-veined leaves, while on others the leaf is virtually the size and color of the common Ivy. As a consequence the general appearance of the whole vine is somewhat irregular and unkempt.

In the last two or three years the appearance of the vine has altered remarkably for it has begun to flower and Ivy is one of those interesting vines in which the fruiting branches look very different from the

rest of the plant. Two other vines introduced by the Arboretum have this same curious habit of becoming quite different in their old age; they are the Wintercreeper (*Evonymus radicans*) and the Climbing Hydrangea (*Hydrangea petiolaris*). The change from youth to maturity is even more striking in the case of the Ivy as can be seen from the plates which accompany this article. It is hard to believe that these two forms, the juvenile climbing form, and the branching adult form, could belong to the same variety; superficially they look as though they belonged to different species or even to different genera. Certainly they are more different than a branch from an apple and one from a pear. *Yet they came from the same vine.* The first plate shows the vine as it appeared during the first 20 years of its life and as it looks even now on its lower branches. This is the so-called juvenile form. The other plate shows branches which have been flowering and fruiting for the last three years. The more carefully these two plates are compared, the greater does the difference between the two forms appear to be. The juvenile form is unbranched; the fruiting one branches again and again. The juvenile form is a vine clinging tightly to trees or walls by numerous small roots. The fruiting branches are stiff and erect; even when the Ivy is grown on a wall they project out at right angles, giving somewhat the effect of a small bush grafted on top of the vine. This effect is heightened by the arrangement of the leaves which instead of occurring in two neat parallel rows as they do in the juvenile shoots, are borne on all sides of the stem. The leaf shape differs as well, the leaves are narrow, pointed at the basal end, and unlobed.

This transformation is indeed as remarkable as that from Dr. Jekyll to Mr. Hyde but it is by no means as reversible. When once the change from youth to maturity has occurred it is permanent. Year after year the fruiting branches grow out farther and farther away from the wall or tree on which the vine is growing. New fruiting branches appear until the whole top of the vine is one continuous bush. The lower part of the plant may continue to send out vine-like branches but none of these originate from the fruiting wood. Even when cuttings are taken from the fruiting branches and they are grown as independent plants they seldom lose their shrubby character. Instead of a flat, quick-growing vine they produce a shrubby, slow-growing shrub, similar to the fruiting branch from which it came but not at all reminiscent of the original vine. It is, therefore, possible to grow each species of Ivy in two entirely different forms, the climbing juvenile one and the arborescent fruiting one. These ivy bushes, technically know as "var. *arborescens*" are seldom if ever seen in this country but in England they are very common, particularly in gardens which were laid out during the Victorian era. During that period Ivy enjoyed its greatest popularity. Nurserymen responded to the general demand and many garden varieties made their appearence. There were yellow-leaved, white-leaved, and even red-leaved forms. There were varieties which had leaves with deeply lobed edges, and others with neat scallops. There were short, thickset dwarfs and arborescent fruiting forms of many of the varieties. Some had round leaves, others triangular leaves, several long and halberd-shaped leaves. Whole books were published

Hydrangea petiolaris. Introd. 1865 by Thos. Hogg to Kissena Nurseries (MS list)
See also Rev. hort. 1881, p. 314. — Rehder

Hedera helix var. *baltica* (Juvenile form)

about the Ivy. Exhibitions of fancy Ivies were held and in some cases entire gardens were planted with fancy-leaved Ivies and Hollies. The climbing forms, each one different, were planted one after another along walls in the background and specimen plants of fancy-leaved Hollies and arborescent Ivies were set out in front of them, spaced well apart in neat beds.

The multiplication of these garden forms and the natural variability of the Ivy have combined to make identification of garden Ivies exceedingly difficult and in some cases next to impossible. There are five recognized species of Ivy native to Europe, Asia, and North Africa. Each has given rise in nature to geographical varieties which depart somewhat from the type of the species. All of the known species and many of their geographical varieties have been introduced into cultivation and many of them are grown both in the arborescent form and in the juvenile form. Finally in addition to all these "natural" forms there are the fancy-leaved freaks which have originated in cultivation. They now number between fifty and one hundred varieties and belong to three of the species, though most of them are forms of the common Ivy (*Hedera helix*).

This confusion is twice confounded by the fact that even the wild-growing species have very few precise differences by which they can be distinguished. Only one really reliable technical character has been discovered, the hairs on the stems and leaves. Ivy, to the naked eye, seems smooth and shiny; one would never think that it bore any hairs on the stem or leaf. But a closer examination will reveal numerous tiny gray flecks along the stem and on the young leaves. At the ends of vigorous branches these flecks sometimes become larger and more numerous until the whole end of the branch seems almost scurfy. Seen under a hand lens, these flecks are found to be hairs, but hairs of a very peculiar sort. They have a very short stalk and branch out in star-like fashion so that the whole hair is umbrella-shaped or shield-shaped. By these tiny hairs the species can be quite readily distinguished. In some species the rays are long, in others they are short. In some the rays are seperate, in others they are united. One of the differences between *Hedera helix* and its variety *baltica* is that while in the former there are only five or six rays to a hair, the latter usually has eight. The differences between the species are even more extreme, as is shown in the accompanying plate. Figures 1 and 2 show greatly enlarged views of the hairs of *Hedera helix* var. *baltica*. Above, at the left, is shown the far different hair of *Hedera colchica*. It will be seen that the hair from the Baltic Ivy has fewer rays and that they are spaced widely apart instead of cohering into a disk.

Nearly all the cultivated Ivies seen in this country belong to one variety or another of the English Ivy (*Hedera helix*), of which Mr. Rehder's Baltic Ivy is merely a hardy northern variety. Unfortunately many of the garden Ivies introduced into cultivation in this country have been chosen from among the more tender varieties such as *Hedera helix* var. *poetica*, and the Scotch or Irish Ivy (*H. h.* var. *hibernica*).

Hedera helix var. *baltica* (Fruiting branch)