Winter Effects. The usual practice has been to treat of this subject in the first Bulletin but the past winter has been of such an unusual character that it was thought wise to defer comments until later. The winter, so far as this part of Massachusetts is concerned, will go down in history as an extremely mild one. There has been very little zero weather, a marked absence of snow, and frost did not penetrate to any great distance into the ground. A good deal of freezing and thawing caused many small surface-rooting plants to suffer from heaving and it will be a week or two yet before the full effects of this are known. Deciduous trees, shrubs and vines in the Arboretum have passed through the winter without any noticeable damage. Conifers, Yews, Rhododendrons and other tall-growing evergreens have also wintered remarkably well. On the other hand, dwarf broad-leaf evergreens, such as are known generally as ground-covers, suffered more than for many winters past. The marked absence of snow, especially in February and March, is to blame for this. A moment's reflection will show that the more low-growing the plant the more accustomed it is to a winter blanket of snow and to the benefit of the slightest precipitation. The taller evergreens can get along without a heavy snowfall always supposing that the frost does not penetrate so deeply into the ground that their roots cannot function during late February and March.

Heather, both in exposed places and in partial shade, has suffered more in the Arboretum than for long past and we learn that similarly evil results obtain elsewhere. This damage to the Heather was accelerated by some dishonest person surreptitiously taking a lot of wood for cuttings in December. Experience has shown that any cutting of Heather late in the year is attended with disastrous results. The Spring Heath (Erica carnea) in the Shrub Garden has been badly damaged but the hybrid (E. darleyensis) has wintered well on Bussey Hill. The shrubby Candytufts (Iberis sempervirens and I. Tenoreana), the common Periwinkle (Vinca minor) and Pachistima Canbyi, all of which usually suffer no winter damage, are badly browned. The low-growing Mahonia repens, usually considered quite
hardy, has its foliage much scorched, whereas, side by side with it in the Shrub Garden the taller Mahonia Aquifolium, which normally suffers each winter, has come through unscathed. The lesson of the winter so far as evergreens are concerned would appear to be that the more dwarf the plant the more dependent its well-being is upon a covering of snow. In the absence of snow a protective covering of some sort should be laid over groundcovers during February and March.

The Oriental Witch-Hazels, Cornelian Cherry and Forsythias have never given a finer display of blossom. The Japanese Cherries are rich with promise of abundant blossom, and, so too, are the Crabapples and Azaleas. The Lilacs made a wonderful growth last year and unless something untoward happens will produce a goodly show of blossoms, making amends for what they lack in quantity by size of flowering truss. So far as one can judge in these last days of April there is every reason to expect an unusually good season of flowers.

**Autumn Transplanting.** The Arboretum has always favored spring planting and transplanting but owing to the shortness of the season it is not possible to accomplish all of this work that is necessary in a garden of 260 acres. Some of the collections had become crowded and a general transplanting of relatively large shrubs and trees was urgent so the experiment of autumn transplanting was tried last fall. The weather during the season was particularly suitable for such work and the mild winter has doubtless contributed to the favorable results of the experiment. Three large Magnolias moved early in September have not suffered at all. In the same month a collection of Chinese Spruces and Silver Firs was moved to a site near the Administration Building and these too came through unscathed. Two goodly sized trees of the Japanese Spring Cherry (*Prunus subhirtella*) were moved to the Forest Hills Gate, apparently without suffering the slightest reverse. Regrouping and arranging of miscellaneous Azaleas on Bussey Hill was carried through. Among others, *Rhododendron Schlippenbachii*, always a difficult subject to move, seems to have experienced no ill effects. Indeed, a critical examination of all the plants moved last fall reveals most gratifying results. It would appear from this experiment that if the autumn be favorable and the work started early and finished by mid-November a good deal of heavy transplanting can be done without fear of loss. After good rains have fallen the latter half of August and September is an excellent time for moving Conifers and Yews, and, indeed, evergreens of all sorts: October is the month for transplanting deciduous shrubs and trees. The endeavor should be to finish the work while the ground still retains a good deal of the heat absorbed during summer.

**Pieris floribunda** is a good-natured, hardy, broad-leaf evergreen not so much used in gardens as its merits warrant. The first of the broad-leaf evergreen shrubs to blossom, it is at the end of April and in early May decidedly attractive. It is a native of the
A valuable broad-leaf evergreen (*Pieris floribunda*).
southern Appalachians from Virginia to Georgia, being known in cultivation since 1811 and is perfectly hardy in New England. A dense, more or less rounded, hummock-like bush, it is sometimes as much as 12 feet high and twice that in diameter. The best plant in the Arboretum is less than half these dimensions and may be seen facing the Kalmias on the right of Hemlock Hill Road. Although this plant is scarcely flowering so freely this year as it usually does another in the Shrub Garden is abundantly covered with short, erect panicles of milk-white flowers. Each flower is urn-shape, nodding and a hundred or more are collected together in each terminal cluster. The leaves are dull green, oblong to lance-shaped, each 1 1/2 to 2 inches long and are retained on the bush for three or four seasons. More widely known as *Andromeda floribunda*, this plant, which should be propagated by seeds, though slow-growing, is long lived. Less hardy but more beautiful is the Japanese species, *Pieris japonica*, which has longer, lustrous dark green leaves, of a ruddy hue when young, and spreading, hanging panicles of larger flowers. In the Arboretum this plant does moderately well in the shade of the Hemlock Grove but there are other gardens in the vicinity of Boston where handsome bushes may be seen. It is taller and more tree-like in habit than the American species and at its best forms a dome-shaped mass as much as 20 feet tall. It is a special feature of the relatively dry Pine woods of the southern half of Japan and nowhere are finer specimens to be seen than in the park at Nara, the old capital of Japan. Two other species, neither of them hardy in New England, are in cultivation in this country and for those who garden in the South and in California they are extremely valuable plants. The better known of the two is *P. formosa*, native of the Himalayas from Nepal eastward and also common on the mountains of western and central China. The other, *P. taiwanensis*, is indigenous on the high mountains of Formosa and was introduced into cultivation by the Arboretum in 1917. In habit these shrubs resemble the Japanese species but have even larger flowers borne in arching, sometimes erect, spreading panicles. They are good shrubs for the cool greenhouse but otherwise cannot be thought of for the gardens of New England.

*Corylopsis* is a genus of Oriental shrubs closely related to the Witch-Hazels but unlike the latter not very hardy in New England. All the species agree in having yellow, slightly fragrant flowers borne in short racemes on naked twigs, and, as their name suggests, in habit of growth they singularly resemble the Common Hazel. The flower buds are formed in the autumn and the flowers are among the first of spring blossoms to appear. The mild winter has been favorable to these shrubs and it is many years since the plants on Centre Street Path were so full of blossoms as they now are. The oldest species in cultivation are *C. spicata* and *C. pauciflora* from Japan, but the hardiest of the group is *C. Gotoana*, seeds of which were first sent to the Arboretum by Mr. J. G. Jack in 1905 from Shinano province, central Japan.

E. H. W.