is the problem and will continue to be until more resistance is bred into roses, and until spray materials are available that will give a longer lasting effect. However, it has been demonstrated that a bed of 100 bushes may be kept in excellent condition and yet require only 30 minutes a week spent in maintenance during the growing season.

Ground Covers and the Vines

DURING RECENT decades we have come to understand how we can improve our landscape plantings vastly with short and spreading plants used in massed groups. Plants that perform for us in this way are called ground covers.

As we use plants of an appropriate color, texture and height to form a carpet-like appearance, we attain both esthetic and functional achievements. Ground covers do much to complete the needed semblance of balance and form through directing more emphasis to the surface plane. Uniformity and simplicity must receive consideration if our home landscaping is to appear restful and attractive.

Ground covers perform for us in a number of useful ways. Being plants which naturally dwell in the lower level of our landscape, the floor area, they offer innumerable rewards in landscaping our homesites.

Some of the rewards are reduction of glare, conservation of moisture, less maintenance, and erosion control. In addition, ground covers help to entrap pollutants, delineate traffic circulation, and provide a better scale relationship in the overall landscape design.

Then, of equal importance, we are able to create appropriate texture and color variation, direct attention, and tie together the key landscape elements.

In our humble way, we try to improve on nature in today's landscaping, and do it in a way that will accent and highlight the garden areas to our satisfaction. Ground covers are our landscape carpeting tools. Since there are so many plants which serve satisfactorily as carpeting tools, we can be very discriminating in choosing those which will best serve for the intended effect.

Cost is a factor, so there is economic significance in selecting plants which will do the job correctly and economically within the bounds of hardiness and ease of maintenance. There is no point in adding to our home management problems, if garden care becomes a chore instead of a pleasure. As a general rule, however, ground covers—once established—lessen overall landscape maintenance.

With installation cost and future care as major factors, we must seriously consider the site and just why carpeting plants are appropriate and where they should go. We often hear recommendations made for using ground covers only in problem spots, those places where grass has been tried and failed. These positions usually are in deep shade, lack moisture, and otherwise do not have conditions suitable to grow shallow rooted plants readily. This is expecting too much, even of ground covers, though sometimes there is a degree of success despite these conditions.

Using ground covers only in problem areas is of secondary importance; their real worth relates to the creation of a fastidious and harmonious carpet. The carpet-like effect is obtained when we use plants either as underplanting or to tie together those strong, accenting features of the landscape, but chiefly in areas where cultural conditions assure reasonable success.

We must select covers having the best chance of doing well. If positions are shady, use shade-loving plants like, for example, Ivy and Pachysandra. If

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## Ground Covers for Special Locations

<table>
<thead>
<tr>
<th>Botanical Name</th>
<th>Common Name</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sunny</strong></td>
<td></td>
</tr>
<tr>
<td>Antennaria neodioica (1, 6)</td>
<td>Pussytoes</td>
</tr>
<tr>
<td>Arctostaphylas uva-ursi (1, 2, 3, 6)</td>
<td>Bearberry</td>
</tr>
<tr>
<td>Cotoneaster dammeri &amp; cultivars (1)</td>
<td>Bearberry Cotoneaster</td>
</tr>
<tr>
<td>Cotoneaster apiculata (1)</td>
<td>Cranberry Cotoneaster</td>
</tr>
<tr>
<td>Euonymus colorata (3, 4, 6)</td>
<td>Creeping Wintercreeper</td>
</tr>
<tr>
<td>Juniperus horizontalis &amp; cultivars (6)</td>
<td>Creeping Juniper</td>
</tr>
<tr>
<td>Juniperus procumbens nana (4, 6)</td>
<td>Hall’s Honeysuckle</td>
</tr>
<tr>
<td>Lonicera japonica halliana (3, 4, 6)</td>
<td>Purpleleaf Wintercreeper</td>
</tr>
<tr>
<td>Pachistima canbyi (1, 2, 6)</td>
<td>Wintercreeper</td>
</tr>
<tr>
<td>Potentilla tridentata (1, 2, 6)</td>
<td>Winelace Cinquefoil</td>
</tr>
<tr>
<td>Potentilla verna nana (1, 5)</td>
<td>Cinquefoil</td>
</tr>
<tr>
<td>Sedum species (5, 6)</td>
<td>Stonecrop</td>
</tr>
<tr>
<td>Waldsteinia ternata (1, 3, 6)</td>
<td>Barren Strawberry</td>
</tr>
<tr>
<td><strong>Shady</strong></td>
<td></td>
</tr>
<tr>
<td>Ajuga reptans &amp; cultivars (3, 4)</td>
<td>Carpet Bugle</td>
</tr>
<tr>
<td>Convallaria majalis (4, 5)</td>
<td>Lily-of-the-Valley</td>
</tr>
<tr>
<td>Euonymus fortunei varieties (3, 4, 6)</td>
<td>Wintercreeper</td>
</tr>
<tr>
<td>Hedera helix &amp; cultivars (4, 6)</td>
<td>English Ivy</td>
</tr>
<tr>
<td>Hosta species (5)</td>
<td>Plantain Lily</td>
</tr>
<tr>
<td>Liriope spicata (6)</td>
<td>Lily Turf</td>
</tr>
<tr>
<td>Pachysandra terminalis (2, 6)</td>
<td>Japanese Spurge</td>
</tr>
<tr>
<td>Vinca minor &amp; cultivars (3, 6)</td>
<td>Periwinkle or myrtle</td>
</tr>
</tbody>
</table>

1. Requires well-drained soil
2. Requires acid soil
3. Good in sun or shade
4. Confine, may grow out-of-bounds
5. Herbaceous
6. Foliage retention in winter

positions are hot and dry, open and sunny, use plants such as Cotoneaster and Euonymus. When the space is large, perhaps sloping, there are plants, too, which are well suited to these demands.

Though we must try to match the plant to its tenable ecology, there usually is enough flexibility in most ground covers to allow some deviation. Even so, we must not neglect in any way good site preparation, for here lies the basic difficulty often experienced in easily and quickly establishing plant material.

By devoting a little more than the usual effort to site preparation—particularly by incorporating very deeply
and thoroughly liberal quantities of humus materials such as peat moss, composts or rotted manure, plus the required chemical elements—we take a big step toward ultimate success.

Good preparation does pay off, and handsomely, with faster growth, more rapid maturing cover, and better winter hardiness.

Perhaps the most common error in planting ground covers is that of spacing. If spacing is too far apart, the intended effect is not produced for a long time and in the interim weeding becomes burdensome. Though relatively close spacing is more costly, the effect is NOW. There really is no economy in wide spacing; maintenance is increased and the landscape enhancement is negligible.

Proper care of ground covers is of primary importance.

Fertilization, irrigation and pruning is required if there is to be retention of vigor, drought tolerance, and tidy appearance.

One of our most versatile ground covers, *Euonymus colorata* (Purpleleaf Wintercreeper), has a tendency to ascend, and even climb trees and structures. To maintain an even-topped appearance, clipping is required and this is easily accomplished with a rotary mower set high.

Periodic fertilization and summer irrigation of *Vinca minor* (Periwinkle) and *Pachysandra terminalis* (Japanese Spurge), are particularly noteworthy recommendations.

Another of our especially useful carpeting plants, *Hedera helix* (English Ivy), and its hardy cultivars, requires pruning on occasion, though mostly at the bed edges and in places where there is a tendency to climb walls or sprawl into shrubs or evergreens.

**Vines Play Big Role**

Vines are a part of the plant kingdom that can play an important role in landscaping. The effect of climbing plants, however, is an extension of the garden in a vertical direction, wherein the straight line of the horizontal planting is broken.

*Clematis* (pronounced clem-a-tis) is perhaps the finest, most admirable of all the flowering vines. Once a strong vine develops and flowering occurs, there is eye-catching attention and enviable admiration.

To assure trouble-free success with clematis, pay special attention to choice of site and to soil preparation. For the permanent location, choose a spot offering sun at least half the day, a place which promises to be just as good years hence—since clematis will thrive for many years if growing conditions are right at the start and are kept right.

Too much emphasis cannot be placed on the importance of planting clematis where some shade will be cast

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**VINES FOR SPECIAL USES**

<table>
<thead>
<tr>
<th>Botanical Name</th>
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<tbody>
<tr>
<td>Akebia quinata (1, 2, 3, 4)</td>
<td>Five-leaf Akebia</td>
</tr>
<tr>
<td>Clematis species &amp; hybrids (1, 2, 3, 4)</td>
<td>Virgin's Bower</td>
</tr>
<tr>
<td>Euonymus fortunei (2, 3)</td>
<td>Wintercreeper</td>
</tr>
<tr>
<td>Hedera helix &amp; cultivars (2)</td>
<td>English Ivy</td>
</tr>
<tr>
<td>Hydrangea petiolaris (1, 2)</td>
<td>Climbing Hydrangea</td>
</tr>
<tr>
<td>Parthenocissus tricuspidata (2)</td>
<td>Boston Ivy</td>
</tr>
<tr>
<td>Wisteria floribunda (1, 2, 3, 4)</td>
<td>Japanese Wisteria</td>
</tr>
</tbody>
</table>

1. Flowering
2. Wall Cover
3. Screening
4. Trellis
over the root area, and on furnishing a porous, heavy mulch to keep the growing space cool and moist.

Most difficulties experienced in establishing clematis are due to exposing or subjecting plants to extremes of temperature and to moisture stress. Prepare soils very deeply, and thoroughly, as recommended for the planting of ground covers.

In the garden, clematis will entwine and hold to shrubs, evergreens, trellis, fencing, or any prepared facility.

For special effect, though, some assistance is required. In many varieties a succession of bloom will occur if clematis vines are pruned heavily early in March, then slightly after each flush of bloom. Do not permit seed heads to develop—unless you desire the masses of feathery, silky heads for your enjoyment. Also, to assure recurrent bloom throughout the summer, fertility and moisture must be kept adequate for new shoot growth.

A most common difficulty experienced with establishing clematis is caused by a disease called “dieback”, indicated by sudden wilting and collapse of vine growth. Sanitation and aeration at the soil surface are requisites to success.

The “dieback” disease in clematis comes from a localized infection. In most cases the fungus originates at ground level, but it can infect the leaves and then provide a basis for further infection.

Along with the mulches and well-prepared soils, periodic fungicide sprays should be applied while plants are in the juvenile stage. Sprays should be directed heavily at the stems near the soil surface and to foliage as well.

Fungicides which are designed for control of foliage diseases of roses will work very well in controlling foliar and stem infection of clematis, if applied regularly during the moist and humid periods of the spring season.

Of course there are other fine vines, among them Wisteria floribunda (Japanese Wisteria) and Parthenocissus tricuspidata (Boston Ivy). The Japanese Wisteria requires strong, sturdy support for twining and also some assistance in training. Boston Ivy adheres to wall surfaces with its own appendages. Many of the climbing plants are of special interest and beauty, for they can provide a screen and help to cover wall surfaces.

Japanese Wisteria provides a spectacular bloom display in late May, and Boston Ivy offers lustrous green foliage in summer which changes to a brilliant scarlet in fall.

Another exceptionally fine climber for wall areas is Hydrangea petiolaris (Climbing Hydrangea). Large, white flowers are freely produced in June, and contrast well with its large deciduous dark green leaves.

Some of our vines serve a dual purpose, both as ground cover and wall cover. English ivy and euonymus are good examples. As with all vines, when grown on walls only a little growing space is required. The chief interest is upward, at eye level or above.

The what to plant and the when to plant in the way of ground covers and vines presents important decisions for the home landscaper. Landscape material originally came from many and varied climatic zones. Your choice of site should fit as closely as possible the environmental requirement of the plants to be used. Microclimates even occur within one's own homesite.

Fortunately, many of the most dependable ground covers and vines are very hardy and withstand the severest wintry conditions.

In developing plans for home landscaping it is recommended that you make first-hand observation in your immediate community and that you consult with your local nurseryman, garden center horticulturist, or with your landscape architect. Mail-order catalogs also contain a wealth of horticultural information.

Seeing how plants are used in actual growing conditions, discerning their appeal, and seeking advice from the horticulture professional in your neighborhood will certainly help to get you off to a good start on your planting.
Climbing plants add interest and beauty.

ARBoretums & Botanical Gardens for Study of vines AND Ground Covers

Beal-Garfield Botanic Garden
Michigan State University
East Lansing, Mich.

Strybing Arboretum
Golden Gate Park
San Francisco, Calif.

Arnold Arboretum
Case Estates
Weston, Mass.

Brooklyn Botanic Gardens
Brooklyn, N.Y.

Longwood Gardens
Kennett Square, Pa.

Missouri Botanical Gardens
St. Louis, Mo.

Morton Arboretum
Lisle, Ill.

National Arboretum
Washington, D.C.

Our arboretums and botanical gardens contribute immeasurably to the advancement and dissemination of horticultural knowledge; they exhibit the best plants for ornamental and functional use under local conditions. Fortunately many of these institutions are located within easy daytime, week-end or holiday travel distance for most, thus permitting great pleasure in the pursuit of horticultural information.

The opportunity to see and study ornamentals in well-designed and cared-for landscaped settings aids greatly in learning how ground covers and vines are used, why they are used, and in determining the potential value and adaptability these special purpose plants will have in your own home landscape improvement program.

For further reading:


University of Illinois. Ground Covers and Their Uses, Vocational Agriculture Service, College of Agriculture, 434 Mumford Hall, Urbana, Ill. 61801.

Ohio State University. Ground Covers in the Landscape, Ext. Spec. Landscape Horticulture, 2001 Fyffe Court, Columbus, Ohio 43210.