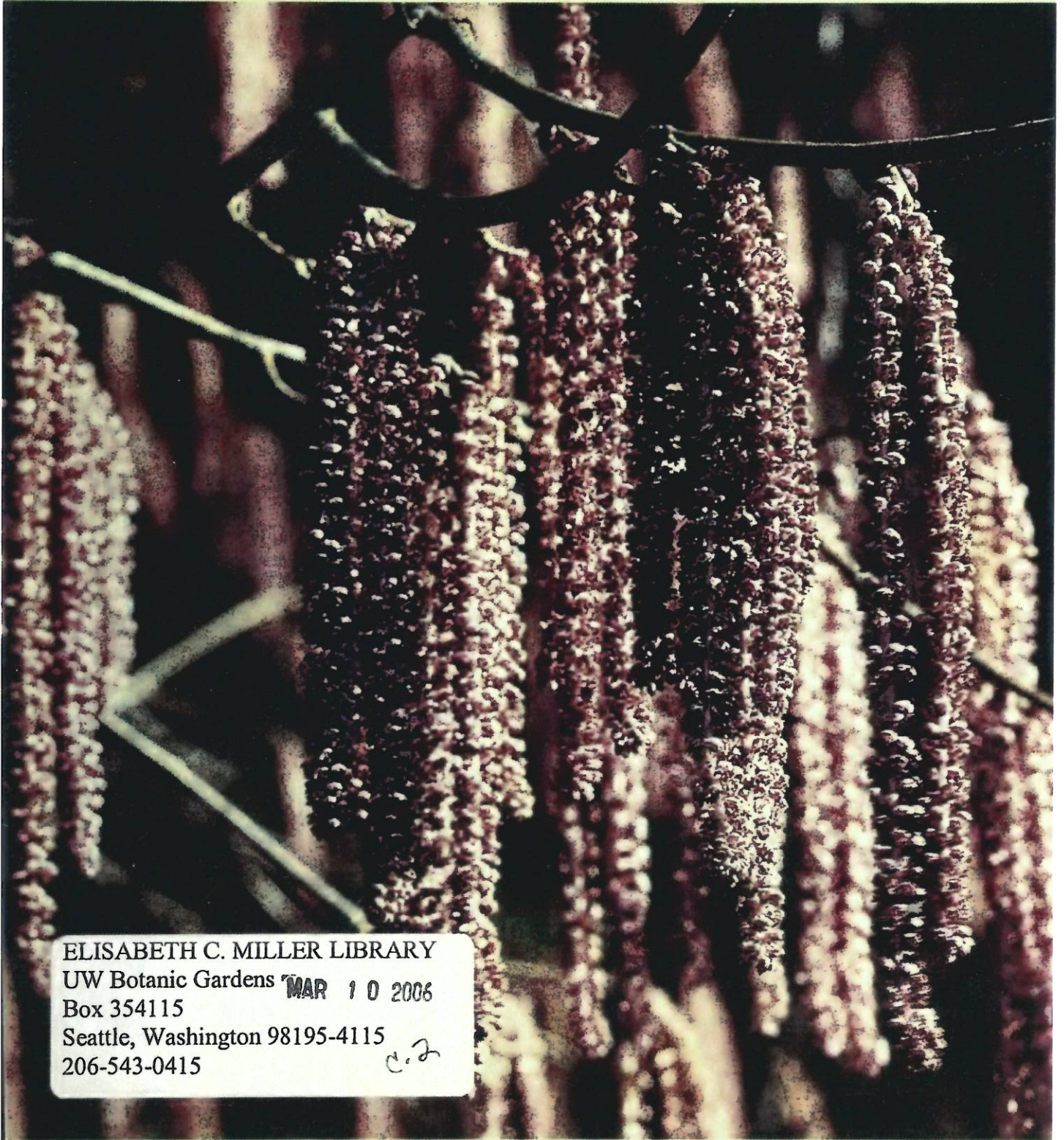


Washington Park Arboretum

BULLETIN



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A Pacific Northwest Forest— In Switzerland?

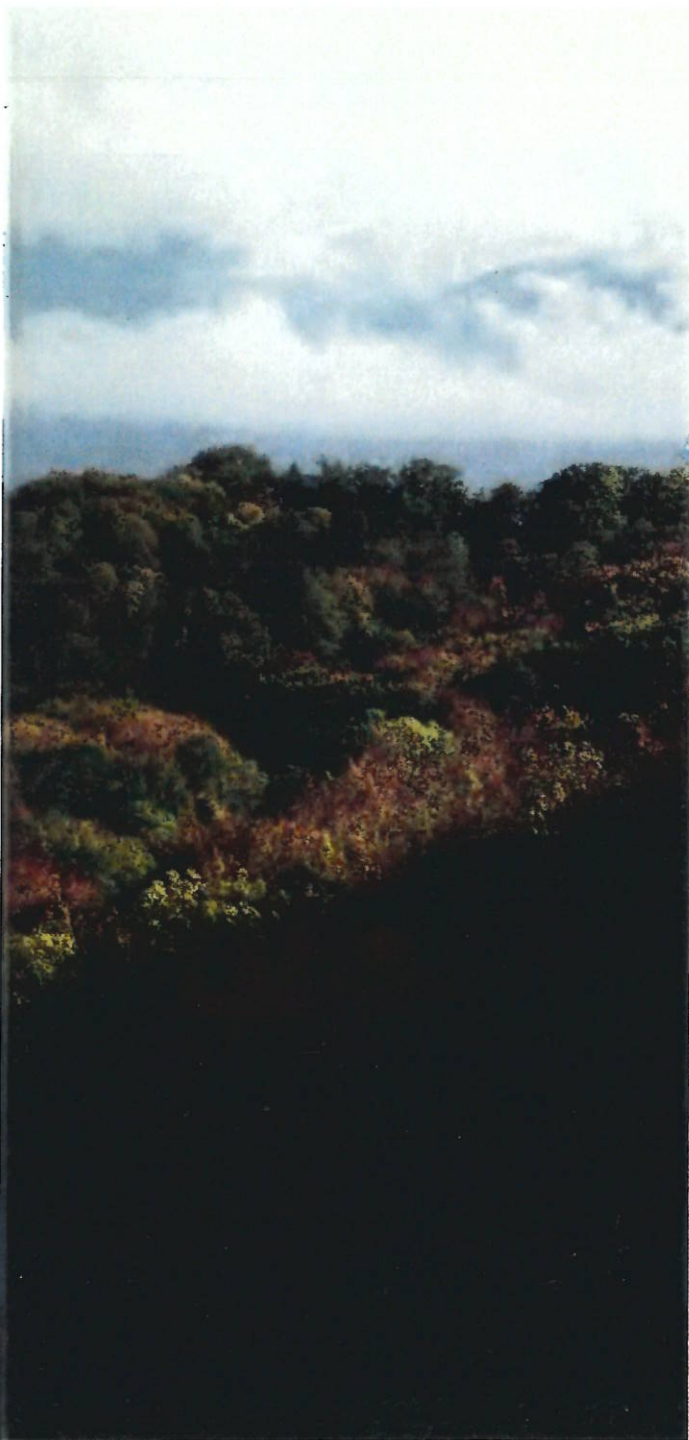


STORY AND PHOTOS BY SYLVAIN MEIER

Yes, believe it or not, the Swiss National Arboretum really does include a Pacific Northwest forest. Located between Geneva and Lausanne, not far from Lake Geneva, on almost 200 hectares (500 acres) of the Aubonne River valley, the arboretum is situated in an unexpectedly mild climate, equivalent to USDA zones 8a and 7b. The Pacific Northwest Forest—a project begun in the mid-1970s—occupies about 2 hectares (5 acres) of this large arboretum. With the support and

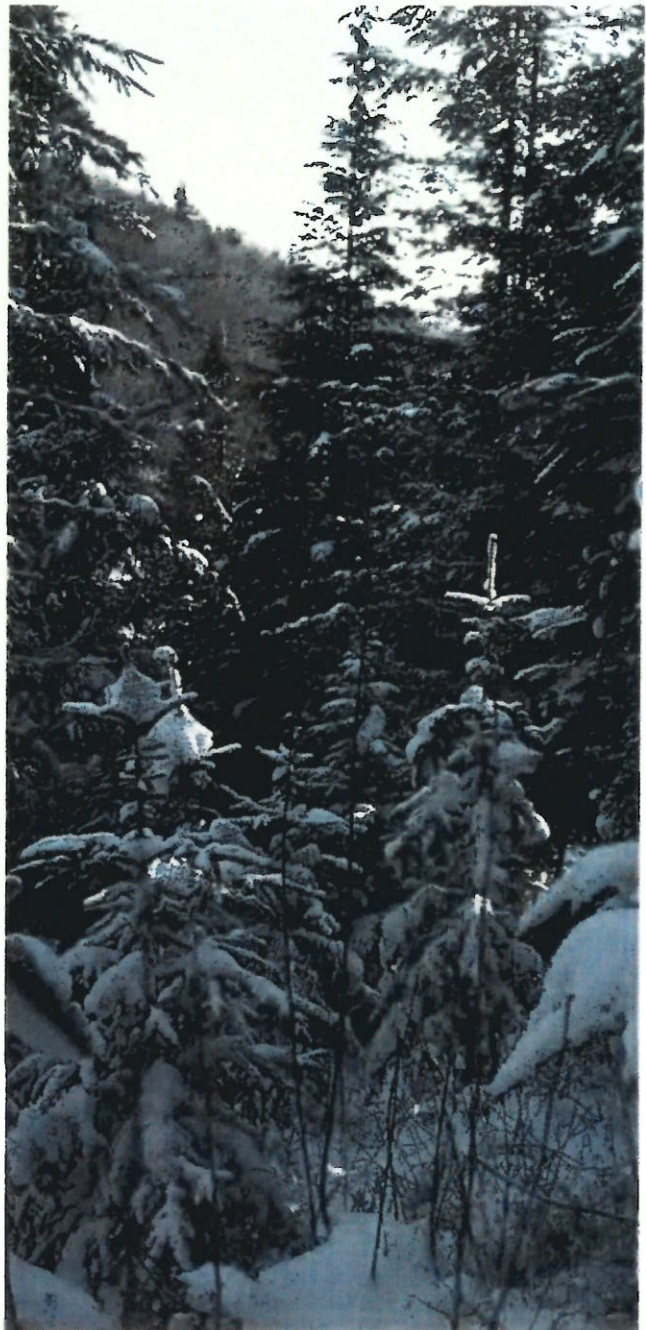
contributions of the Washington Park Arboretum (WPA), the University of California Botanical Garden at Berkeley (UCBG) and other institutions, the Swiss National Arboretum continues to enrich its Pacific Northwest collection.

Prior to the arboretum's existence, about 36 hectares (90 acres) were occupied by three farm estates without real development opportunities. Thanks to the wisdom of these farm owners, the estates were sold to the arboretum, although their inhabitants chose to live in their



homes as long as they could, until death in several instances. The last resident, Mrs. Heidi Wüthrich, moved from her old home to a more convenient and comfortable flat at the entrance of the arboretum a few years ago.

The rest of the arboretum's over 160 hectares (400 acres) consists of beech and ash forests, some of which are still in private hands. The arboretum tries to purchase every piece of nearby land for sale, sometimes buying outside its perimeter to have land to offer when



LEFT: An autumn view of the Pacific Northwest forest and the lower Aubonne Valley from the entrance of the arboretum with Aubonne Castle, Lake Geneva and the Alps in the background.

ABOVE: This snowy scene in Switzerland features Pacific Northwest trees: a young Sitka spruce group with older Port Orford cedar and Douglas fir.

an exchange appears mutually advantageous.

Like Arboretum Foundation support of Washington Park Arboretum, the Swiss National Arboretum is supported by an association of approximately 1,800 members. In fact, its grounds and buildings actually belong to the supporting foundation. The Canton de Vaud—one of the 26 states of Switzerland, and the location of the arboretum—supports it both financially and with the management expertise of the local Forest Service.

Phytosociology

Thirty-five years ago, the Dendrology Commission of the Geneva Horticultural Society contributed plantings of both Port Orford cedar (*Chamaecyparis lawsoniana*) and Western hemlock (*Tsuga heterophylla*) to an area of the arboretum's native beech forest. The Pacific Northwest forest model germinated at that very moment, as a consequence of my participation in planting those trees. Forest phytosociology—the branch of botany focused on plant communities and the way they are structured and distributed across the landscape—has provided the guidance we have used in developing the forest model. As a young forest engineer—with a particular interest in dendrology and phytosociology—I had traveled twice to explore the forests of the North American West Coast, a forester's dreamland. These trips and the Geneva Horticultural Society's gift combined to inspire the goal of building in Switzerland a forest model of this beautiful region.

While other collections of trees at the arboretum were primarily grouped taxonomically by genus, this kind of organization was not entirely satisfying, since the eco-geographic connections between the plants and their homelands were lost. I realized that if we tried to create eco-geographic displays of a few typical Pacific Northwest forest communities, we could provide new experiences for visitors and help them discover new aspects of these

magnificent forests. A forest model would also make it possible to discover and explain how native peoples, in this case American Indians and their followers, used and "managed" West Coast forests.

Plant Sources

Thanks to the United States Department of Agriculture (USDA) National Seed Laboratory, we were able to import small lots of seed to test tree species from different American origins. The limitation of this source was the availability of timber species only, whereas the Pacific Northwest forest model aims to display plant communities including minor tree species and shrubs. As a result, exchanges with WPA's Index Seminum and others with UCBG offered us excellent opportunities to complete our collection.

Young plants were produced in both the arboretum's small nursery and in my private garden. So far, about 240 accessions have been planted; many are still to come.

Our Pacific Northwest forest model is primarily planted with Douglas fir (*Pseudotsuga menziesii*) from more than 15 different origins. We chose the Douglas fir as our primary species, because it is an important or dominant species in many of the forest communities across the Pacific Northwest. Interestingly, this species is also an exotic timber tree in Switzerland and across Europe and one of the many species thought to have disappeared from European forests with the cataclysm of the last ice age.

As much as possible, we try to introduce plants grown from seed collected in the wild—plants that will recall memories of their original place, for visitors lucky enough to have visited Western North America, or that will stimulate the curiosity of others. Since they represent the actual evolution of that plant at a certain spot, plants collected from the wild are interesting for many reasons. They can be used to illustrate either the variability or, on the contrary, the homogeneity of the species.

Among the trees of our model, Douglas fir is highly variable in comparison to Western red cedar, which is surprisingly homogenous.

Pacific Northwest Forest Model

The arboretum's Pacific Northwest forest is located on the lower and middle slope of the Aubonne river valley; its northern limit runs along La Sandoleyre Creek, which ends in the small Aubonne dam. A ridge marks the limit of the forest's two main aspects, a northern one with a slightly more mountainous climate and an east-southeast exposure that is a little milder. Altitude varies from 550 to 620 meters (1,800 to 2,030 feet), and annual precipitation is slightly less than a meter (40 inches).

The species composition of the Pacific Northwest forest model varies from one area to another, reflecting some of the diversity found in the natural forest. In general, the lower elevation areas of the site are planted with lowland and coastal species, while montane species occupy higher parts.

The primary phytosociological reference that has been used in the development of the Pacific Northwest forest model is "Forest Cover Type of the United States and Canada," F. H. Eyre, editor, Society of American Foresters, 1980. The different sector compositions and type numbers below refer to this publication. (Latin names accompany each species' first listing.)

North Pacific

■ **SECTOR A**, the southeastern area, is primarily dedicated to the coastal forests of northern California and Oregon and will display typical species such as **Port Orford cedar** (*Chamaecyparis lawsoniana*) (type 231), western hemlock (*Tsuga heterophylla*), Sitka spruce (*Picea sitchensis*), grand fir (*Abies grandis*), western red cedar (*Thuja plicata*), redwood (*Sequoia sempervirens*), tanbark oak (*Lithocarpus densiflora*), red alder (*Alnus rubra*), bigleaf maple (*Acer macrophyllum*), California laurel (*Umbellularia californica*), vine maple (*Acer circinatum*), salal (*Gaultheria sballon*), Pacific rhododendron (*Rhododendron macrophyllum*),

Oregon grape (*Mabonia aquifolium*) and salmonberry (*Rubus spectabilis*).

■ **SECTOR B** is primarily a **Pacific Douglas fir** (*Pseudotsuga menziesii*) forest (type 229).

■ **SECTOR F** is a **western red cedar**-dominated forest (type 228) with Sitka spruce, western hemlock, Douglas fir and grand fir as major species.

■ **SECTOR G** occupies the north aspect of the northernmost portion of the site, which is well suited to the display of plants from Washington and British Columbia. It includes the **Douglas fir-western hemlock** forest (type 230), a mixed species forest type with the following species: Douglas fir, western hemlock, grand fir, Sitka spruce, western white pine (*Pinus monticola*), lodgepole pine (*Pinus contorta*), Alaska cedar (*Xanthocyparis nootkatensis*, syn. *Chamaecyparis nootkatensis*), Pacific silver fir (*Abies amabilis*), Pacific yew (*Taxus brevifolia*) plus several hardwood species such as red alder, bigleaf maple, black cottonwood (*Populus trichocarpa*) and vine maple; and the **hemlock** forest (type 224), featuring a grove of grand fir, and a few Pacific silver fir and noble fir (*Abies procera*) in addition to Sitka spruce, western red cedar and Douglas fir. The higher part of the sector includes species found at higher elevations in the Cascade, Sierra Nevada and Rocky Mountain ranges as well.

■ **SECTOR H**, a new extension of lower elevation areas along the Aubonne River features type 233, a **Garry oak** (*Quercus garryana*) forest.

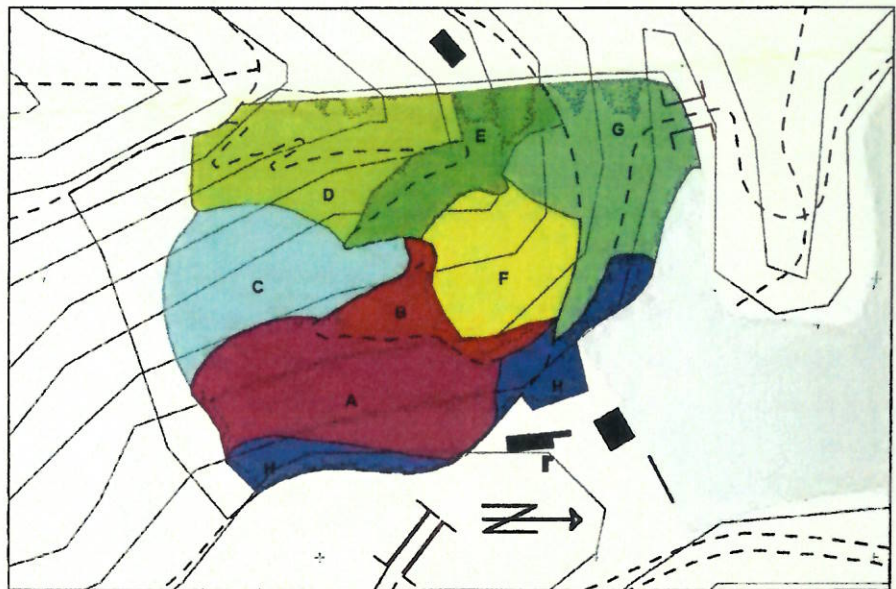
Thanks to the Garry Oak Restoration Project and the best mast in 30 years, we were lucky to receive in November 2005, a few hundred acorns from Vancouver Island, the far north of Garry oak's natural range. We also have a few plants from Napa County, California and Polk, Oregon.

High Elevations

■ **SECTOR E** corresponds to the middle elevations of the interior West with **quaking aspen** (*Populus tremuloides*) (217), **lodgepole pine** (218) and **western larch** (*Larix occidentalis*) (212) forest types.

■ **SECTOR D** Recent seed received from both Oregon and British Columbia will help us to

The Pacific Northwest Forest includes the following sectors: A) Coastal forests of northern California and Oregon, B) Lower elevation mountain forests of Oregon and Washington, C) Southern rocky mountain forests, D) Higher elevation coniferous forests, E) Middle elevation forests of the interior West, F) Western red cedar forests, G) Coastal forests of Washington and British Columbia, and H) Garry oak forest.



install communities at both higher and lower elevations of this sector. The upper part of Sector D will host the higher elevation communities, such as type 206, **Engelmann spruce** (*Picea engelmannii*) and **subalpine fir** (*Abies lasiocarpa*) mixed with Alaska cedar, western larch, subalpine larch (*Larix lyallii*), mountain hemlock (*Tsuga mertensiana*) and lodgepole pine; and type 205, **mountain hemlock**.

Just below, we already have a sector of **mixed conifer forest** featuring ponderosa pine (*Pinus ponderosa*), western white pine and Pacific silver fir.

■ **SECTOR C** corresponds to the central and southern Rocky Mountains with an **interior Douglas fir** (*Pseudotsuga menziesii* var. *glauca*) forest (type 210), growing with limber pine (*Pinus flexilis*), aspen and cork-bark fir (*Abies lasiocarpa* var. *arizonica*), illustrating the adaptation of tree species to special environments.

Future Developments

Among the species we hope to grow one day is the American West's quaking aspen (*Populus tremuloides*), which has, so far, eluded us. Thanks to Randall Hitchin, Washington Park Arboretum's Registrar & Collections Manager, we hope soon to receive root cuttings of *Populus tremuloides* var. *vancouveriana*, a variety that is reported to be more adaptable to our conditions. Currently,

we maintain a few of our native *Populus tremula*, similar to *Populus tremuloides*—which definitely has a straighter and whiter bole and legendary golden fall color.

We are also working on practicalities, such as completing labeling, rebuilding the main path and producing a guidebook. A fence to prevent browsing by deer also has to be reestablished. These and many other projects depend upon the contributions of both regular and occasional volunteers and sponsors. We thank all who continue to make such a cooperative project possible.

The goal of this forest model is to encourage visitors to discover and appreciate the impressive forests of Western North America, especially the Pacific Northwest. This project should also be of special interest to some of the 50,000 Americans living in Switzerland. It offers a good opportunity for both adults and children to discover the most important elements of the Western forest. Please pay us a visit. ∞

SYLVAIN MEIER is a free-lance forest engineer, volunteer and project leader of the Swiss National Arboretum's Pacific Northwest Forest. To learn more about the arboretum, visit www.arboretum.ch. The author may be reached at smeier@arboretum.ch.