The membership of the University of Washington Arboretum Foundation and its Board of Directors are pleased to welcome the delegates and their families of the XI International Botanical Congress. We hope that the Pacific Northwest, Seattle, and in particular the University of Washington Arboretum will help make your Botanical Congress a truly outstanding event. We invite you to take some time out of your busy schedule to view and study if possible the Arboretum which is close at hand to the University of Washington campus.

[Signature]

President
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Cover photo:
Western Dogwood (Cornus Nuttalii) Flowering in Arboretum, April 25, 1969.

Photo by William Inc
Fire was the causative agent here, back in those dimly remembered days of the mid-sixteenth century, perhaps a hundred years before the colonization of the New World. It may have been a blinding, tree-shattering lightning bolt. Or the feeble warming fire of an Indian, pausing to rest beneath the protective branches of an old cedar.

Whatever its source, the resultant forest fire ranged unchecked through the primeval forest. Searing wall of orange flame, trees exploding with thunderous force, glowing embers sucked skyward by fire generated winds. Black, grotesquely-sculptured snags against a background of dead, gray ash. Thus does a forest die.

Renewal is a dominant theme in the natural world. The fire which killed the old forest nurtured its progeny. Fire destroyed the thick layer of forest litter, exposing the bare mineral soil required for proper germination of wind carried Douglas fir seed. The tiny seedlings were warmed by the first direct sunlight the area had known for centuries. Growing conditions were favorable, and an almost pure stand of Douglas fir saplings soon healed the old fire scars.

Nothing stands still in the forest. Even as the 100-year-old saplings stretched skyward with long, straight stems, the seeds of their downfall were sown. Many seeds fell in the cool shadowy depths of the young forest. But the few Douglas fir seedlings which did manage to germinate in the ever-deepening duff soon died from lack of sunlight. They were quickly replaced by a whole new generation of shade-loving trees: western hemlock, western red cedar, white fir, silver fir and countless smaller species.

More years pass and the twentieth century begins. Our fire-generated Douglas-fir seedlings are now forest monarchs with 30 foot girths. Their gnarled dark green crowns are supported by stately, rough-barked columns rising 200 feet above the quiet forest floor. The stand has a special demeanor of maturity; maturity that comes from four centuries of continued exposure to weather, insects, disease and other natural elements. Even in their advanced age, the Douglas fir monarchs must share the upper canopy with vigorous, younger cedar, hemlock and true fir pushing upward through the multi-level forest. As the giants topple, one by one, felled by winter winds or the vagaries of old age, each leaves behind its legacy of space and light and nourishment. Countless lichen, mosses, ferns and fragile saprophytes thrive on the rich banquet of decay. Dozens of species of small flowering plants spray the sun-dappled forest floor with magentas, oranges, yellows, whites and pale pinks. Each season offers its own delights. Slowly, irreversibly, the forest changes.

Man is a relatively recent arrival on the scene. The rude trapper's trail, primitive wagon road, many-trestled railroad and modern freeway are compressed into a hundred years, less than a fourth of the annual growth rings in the larger trees. Despite recent encroachment by the highway (Interstate 90) and a powerline, the grove remains essentially in its natural state, because some men were foresighted enough to make sure it didn't go the same way as most of the old growth stands in the Snoqualmie River drainage. The Asahel Curtis Recreation Area is managed for the use and enjoyment of the American public by the Snoqualmie National Forest. Near-

(Continued on Page 44)

Asahel Curtis Interpretive Trail on the Snoqualmie National Forest.
Fig. 4—U.S. Forest Service Photo
Cold Damage in the Arboretum
1950; 1955; 1964; and now 1968-69

J. A. Witt

We who garden in the Seattle area tend to feel smug about our winter weather, wet and cloudy though it may be, especially when we read of the devasting cold spells that tend to move in on more eastern areas. Yet we do get jarred out of our complacency about every five to ten years when a mass of arctic air moves in on us and drops the temperature to near zero. Fortunately these periods last for a few days only and are seldom repeated during the winter. This winter was different! As Mr. B. O. Mulligan reported in the spring issue of the Bulletin (pp. 18-19) we had two distinct and separate cold periods; the first lasted four days, December 27, through the 30th, 1968, during which the minimum was close to 7° F. and the maximum on December 29 was only 18° F. The cold weather broke with a storm which piled up about nine inches of snow, then moderated somewhat with a period of rain, snow and temperatures above freezing for about three weeks. This was followed by another onslaught of cold. Temperatures dropped to the mid twenties on January 21 and for the next eight days the maximum did not rise above freezing, although the minimum was not as low as the earlier cold; 13° F. on January 23 being the lowest.

Low temperatures alone are normally not the only factor in plant damage from these cold periods. Desiccating wind often is the worst culprit, especially when accompanied by bright sunshine; also the length of time that temperatures remain below a certain minimum is critical in the survival of some plants. Of course, the condition of the plants going into the cold, that is the state of their “hardening off” is equally important, and a freeze of lesser extent in early winter or early spring will cause more damage than one more severe when it occurs in the middle of winter.

When one considers these factors the freezes of last December and January were not as hard on our plants as might have been expected. We did not have the brilliant sun and strong north wind that has often characterized these periods in the past. There was an adequate snow cover for many small plants; there was ample soil moisture both before and after the freeze, and plants had had an adequate time to harden off.

Even so, the list of killed, badly damaged, and defoliated plants is quite extensive. Naturally those species which we knew as tender suffered the most, those from California, Australia, New Zealand, Chile, southwestern Asia and areas with similar climatic conditions. Certain genera were essentially wiped out, at least those plants growing outside. These include Acacia—eight species all killed; Leptospermum—four species, although L. humifusum from Tasmania may survive; Cassia tomentosa; Cordyline australis, large plants that had survived since summer, 1966; Grevillea rosmarinifolia; Pittosporum species, Puya alpestris, and other similar plants that were put out as a calculated risk, knowing that eventually they would succumb to a cold winter.

Another group of genera might be classed as half-hardy. Hopefully there would be some species or forms among these that would survive a really severe winter. These include: Eucalyptus—24 species, all of which were injured to some extent. Three species appear to have survived, although with some damage; E. niphophila, snow gum, E. Gumii, cider gum, and E. parvifolia, small leaved gum. At the present time, late April, the snow gums appear to be in the best condition of the three. All other species were either killed outright or cut to the ground.
Ceanothus—the entire collection with the exception of C. velutinus, tobacco bush, and C. integerrimus, deer brush and C. incanus, coast white thorn, at the least were defoliated, or had severe leaf burning. Most now seem to be making some recovery but a final assessment can’t be made until late summer. Probably we shall lose some of the more tender forms. Our C. ‘Olympic Lake’ was badly defoliated except in a few areas where it had overhead protection, but is recovering. The beautiful C. impressus ‘Puget Blue’ was again severely mauled although one old plant against the greenhouse wall may survive.

Escallonia—the entire collection of twelve species and clones was defoliated and suffered considerable shoot loss. Most now seem likely to recover.

Arctostaphylos, manzanitas—it is doubtful if any were killed outright but most show very severe leaf burning and some wood damage. There seems to be a great similarity in damage between the manzanitas and their close relative, the madrona Arbutus Menziesii. Both suffered leaf damage on the lower portions of the plant while the tops seem to be less injured.

Cistus—rock roses; fully three quarters of the cistus collection was killed outright and of the remaining plants only C. lauri-folius appears undamaged. A number of other genera requiring similar conditions to the rock roses were growing with them and many of these were either killed or badly burned. Teucrium fruticans Halimium species, Rosmarinus forms, a number of Helianthemum species and clones, Arbutus Unedo ‘Compacta,’ and Albizia Kalkora were among those killed.

Another group of genera had certain members hurt while the majority of the species were relatively undamaged.

Rhododendron—again as in the past cold periods, it was the large leaved species that suffered the greatest damage. R. arizelum, R. eximium, R. Macabeanum, R. Falconeri on an exposed bank had moderate to severe leaf burning and most suffered some shoot damage although it is too early to tell if any were killed outright. In the lath house RR. praestans, magnificum, sino-grande and Mollyanum seedlings suffered leaf burning and some bud damage. Rhododendron rex appears untouched. Other species of rhododendrons also show varying degrees of burning and wood injury. Those that are most severe include R. Griersonianum, R. lacteum, R. hypophae-um, and R. anthosphaerum. Many rhodo-
dendrons of the Azalea series, particularly those with evergreen foliage, were burned badly. Most have made a successful recovery but R. indicum, Azalea ‘Prudence’ and ‘Red Bird’ among others have had a good deal of wood damage. However, the majority of the evergreen types are flowering now and show few signs of their earlier damage.

Erica—as might be expected, the tree heaths took the brunt of the cold; E. lusitanica, E. australis ‘Mr. Robert,’ both of which stood up in the 1964 freeze, were badly hurt, primarily with split stems. Erica arborea var. alpina was less damaged. Even a few of the tough lower growing sorts had their problems. The entire bed of Erica hibernica ‘W. T. Rackliff’ had to be taken out and the majority of the Daboecia cantabrica were browed.

Below is a list of some miscellaneous plants that were damaged or killed:

Killed to base or killed outright
Aristotelia maqui
Azara dentata
Bursaria spinosa
Copsrosma Cunninghamii
Cornus capitata
Crinodendron pataqua
Drimys lanceolata
Drimys Winteri
Eugenia chequen
Hebe Astonii
Laurus nobilis
Ligustrum sempervirens
Mahonia lomariifolia
Pinus leiophylla
P. Montezumae
P. patula (certain plants only)
P. pseudostrobus

Moderate to severe foliage and/or shoot damage

Azara microphylla
Berberis species (evergreen)
Clematis Armandii
Cotoneaster buxifolia var. vellacea
Fatshedera Lizei
Hoheria glabrata
Ilex Franchetiana
Itea ilicifolia
Leucothoe populifolia
Lomatia longifolia
Mahonia Fortunei
Maytenus Boaria
Nothofagus cliffortioides
Olea europaea
Osmanthus suavis
Persea borbonia
Pieris formosa
Quercus agrifolia
Q. suber
Sarcococca species (except S. humilis)
Viburnum cinnamomeum
V. cylindraceum
V. Tinus and varieties

To close on a positive note, there was much less injury from this cold than might be expected. The cold-hardiness of some flower buds became evident in the spring especially on the early flowering Asiatic magnolias, Magnolia Sargentiana ‘Robusta’, M. Campbellii, M. Dawsoniana and the hybrid M. Campbells x mollicomata. There was only the least trace of any injury that might have been attributed to cold on any flowers from these fine trees.

As mentioned above, many azaleas had foliage damaged but not flower buds. Very few deciduous plants, even tender ones, were injured and when spring finally came about three weeks late it was nearly as if the winter cold had not happened—until you saw the brown and sear foliage of some poor frost victim rising above a surf of flowers.

Hoyt Arboretum Damage
Winter 1968-69

Ernest E. Fischer,
Curator, Hoyt Arboretum

While the total number of trees lost during the past winter at the Hoyt Arboretum, Portland, Oregon, will not be equal that of the early freeze of November, 1955, or the “big wind” of Columbus Day of 1962, the partially damaged number will more than total those of the two aforementioned unusual weather catastrophes. During the 1955 freeze, all trees lost were due to very low temperatures and during the ‘62 “big blow” all tree destruction was caused by high winds. However, during the past winter, destruction of arborescent material was caused by low temperatures, high winds, heavy snowfall, iced limbs and a long period of freezing weather, lasting from prior to Christmas to the middle of February, unheard of in the Portland area. On March 14 there was still evidence of snow on the east and north slopes of the arboretum.

Although it will be some time before actual “freeze-outs” can be determined (some possibly will sprout from the roots or snow protected trunks), the following groups are definitely doomed: the azaras, the windmill palms (Chamaerops Fortunei), the eucalyptus, the spice bushes (Lindera obtusiloba), some of the magnolias, the crape myrtles (Lagerstroemia), the Chilean wineberry trees (Aristotelia chilensis), the sweet bays (Laurus nobilis) and the live oaks (Quercus agrifolia), cork oaks (Q. suber) and blue oaks (Q. Douglasii).

Gymnosperms destroyed by the heavy snow and ice and broken off or uprooted included Atlas cedars (Cedrus atlantica), Canadian and western hemlocks (Tsuga), Taiwan pines (Pinus taiwanaensis), Koster blue spruces, incense cedars (Libocedrus decurrens), and various larches. Angiosperms in the same category were alders, Styrax, willows, poplars, Caucasian wing-
nut trees (Pterocarya fraxinifolia), persimmons (Diospyros), mountain ashes, flowering cherries, pea trees (Caragana arborescens), hop trees (Ptelea trifoliata), yellow-berried hollies (Ilex Aquifolium ‘Bacciflava’), golden-rain trees, (Koelreuteria), bamboos, fire-bush trees (Embothrium), magnolias and the albizias.

A number of trees which froze out during the freeze of 1955 and which were presumed “goners” during the past winter gave us a pleasant surprise by coming through in excellent condition. Among these were the Monterey pines (Pinus radiata), the loblolly pines (Pinus taeda), the Mexican firs (Abies religiosa), the Santa Lucia firs (Abies bracteata), the Himalayan spruces (Picea Smithiana), the Monterey cypress (Cupressus macrocarpa), the podocarpus (Podocarpus andina), the Italian stone pine (Pinus Pinea), and the Himalayan pines (Pinus Griffithii).

A large slide containing hundreds of yards of soil dammed up our largest creek, thus creating a lake. Water pressure behind the dam forced this huge slide to move down the canyon, burying both native and planted trees and uprooting everything in its path for a distance of about 1/8 mile. It formed a new channel for the creek and created what might be called a landscaper’s nightmare.

Looming ahead for many weeks, aside from cleaning up the resultant debris from over 200 acres, are the essential projects of tying and staking trees, removing fallen trees, pruning broken limbs, straightening leaning trees, repairing trails and roads and a thousand and one other chores resulting from the aftermath of Portland’s worst winter in “many a moon.”

**Victoria, B.C. - 1969 Winter Damage**

**W. H. Wahren, Parks Administrator and Alan I. Smith**

The temperature dropped to 3.8 degrees on December 29, an all time low in Victoria, B.C., but there was a good cover of snow on the ground which protected low growing material. Subsequently, low temperatures, when the snow melted or blew away, caused damage at ground level. There were five days in late December and twelve during the last half of January when the maximum temperature did not rise above 32°F. Blossom damage was severe on many varieties of rhododendrons and camellias. Flowering plums seemed to suffer more severely than the cherries. Many old trees of Prunus Blireiana were severely injured.

Strong winds and low humidity caused severe desiccation of evergreens. Salt spray damage was noticeable a couple of miles inland on Arbutus Menziesii, Sequoiadendron giganteum and many other conifers and evergreens. Foliage of Sequoia sempervirens, 80 years old, was completely burned and all last year’s terminal growth was killed. Following are others which suffered severe leaf scorch:

- Prunus Laurocerasus
- Prunus lusitanica
- Viburnum Davidii
- Viburnum Tinus
- Ilex Aquifolium
- Quercus Ilex
- Cotoneaster species
- Mahonia species
- Laurus nobilis
- Bamboo species
- Tsuga canadensis
- Cedrus Deodara
- Chamaecyparis species
  - Golden foliaged forms—severe
  - Cupressus macrocarpa—severe
- Aucuba japonica
- Elaeagnus
- Stranvaesia Davidiana
- Skimmia japonica

Terminal growth of Liquidambar styraciflua was cut back; Pyracantha suffered varying degrees of injury, to outright death. Escallonia, Ceanothus and Nothofagus species were cut to the ground or killed. Garrya elliptica was badly injured and had to be cut to the ground.

(Continued on Page 35)
Myths and Legends about Trees and Shrubs

Part I

Mary Pinkham

This informal discussion about superstitions related to plant life was presented to one of our Units in November, 1968. In addition to Mrs. Pinkham’s own knowledge of the subject, information was drawn from the sources given in the bibliography. The essay will be published in two parts.

Man and plants have been inseparable throughout the ages. Plants have furnished man with food, shelter, clothing, and medicines, and from time immemorial man has credited vegetation with supernatural powers or religious significance. The tree in Eden is an important symbol in the Christian and Jewish faiths; Mahomet commanded worship of the date tree; the Acacia was used for the Ark of the Covenant because it was incorruptible wood and for the same reason the Buddhists used it for altars and the Hindus burned it sacrificially.

As there is a plethora of myths, superstitions and folklore about trees and shrubs, it would be impractical to try to survey the whole subject in this article. Instead I have elected to take you on an imaginary walk through our own Arboretum and discuss the legendary attributes of some of my favorites there.

I will begin with a few herbaceous plants because of their importance to the new Nature Trail along the Arboretum waterfront. The story of Moses being hidden in the bullrushes to escape notice of Pharoah refers to "payrus," but the Biblical bullrushes would have looked much the same as our swampy thickets of cattails. It is said that the yellow pollen of cattails is a good flour substitute, so I tried it and now consider that a myth. Another name for cattails is Siberian asparagus, and the Russians are welcome to it as a vegetable.

Two roles are attributed to the blackberry, both of which have questionable authenticity. The Crown of Thorns was thought by some to have been made of blackberry, and the burning bush is sometimes referred to as a blackberry. (Later we shall find competition for both of these ideas.) But we’re lucky to have blackberries here (aside from pie) for the Indians thought they cured loose teeth, pop eyes, snake bite, and that the leaves cured rheumatism. Wild blackberries were hated by the devil, perhaps because in the Bible the blackberry had volunteered to be King when all other trees and shrubs had avoided the duty and work involved. Because the devil hated them, he made them thorny and limited their time of ripening from June 7th to October 28th. It is said that on October 28th he stamps over the bushes, hits them with his cloak and forbids them to come again until the next summer. I walked through our blackberry areas on October 28th and did not run into him, but apparently in our mild climate we are allowed a few extra weeks grace, because by December our bushes looked "stamped upon." No mention of blackberry thickets is complete without reference to Brer Rabbit, who, by the way, is still hiding there in the Arboretum.

One more herbaceous plant is worthy of mention here, the nettle which thrives all through the Arboretum much to the discouragement of the employees and guests. Country folk made tea of nettle leaves to cure practically everything. Nettle is one of the five bitter herbs that Jews are commanded to eat at Passover. When Caesar’s Roman army was encamped and freezing in the unaccustomed chill of Britain, they made a very inventive use of nettles. They

*Mrs. (Roland) Pinkham is an Honorary Director of The Arboretum Foundation.
rubbed the leaves briskly on their legs making them burn for the rest of the day. If you accidently brush against nettles, you can remove the sting by rubbing crushed brake ferns over the welts. (I think this works, but maybe it's mental). I came across a little ditty about nettles and was surprised to hear the same thing quoted at the Repertory’s “Juno and the Paycock”:

Tender handed grasp the nettle
And it stings you for your pains.
Grasp it like a man of mettle
And it as soft as silk remains.

In Denmark the alder is a favorite of the elves. If you stand beneath an alder at midnight on midsummer eve, you will see the king of elves and his retinue march by. May I say that at great inconvenience and in the interest of science, I tried this on June 21st and didn’t see even one elf, but then I wasn’t in Denmark. The alder has real feelings and even weeps blood if it hears you planning to cut it down. Alder and Willow used to be fishermen who refused to quit fishing long enough to worship the goddess Pales. So she turned them into trees, willow and alder. To this day they stand at the edge of banks along streams looking for fish, and willow even lets its lines dip into the water. This is particularly noticeable at the shore edge of the Arboretum where there are so many fishermen and where the willow joins right in the fun. The willow doesn’t care how many branches you cut; it still flourishes. It is a symbol of the Gospel of Christ, intact though distributed among people all over the world. There is only one thing willows do not like and that is a traitor. It is said that Benedict Arnold looked back to where a willow was standing and it died instantly.

Once upon a time the poplar trees stole some silver spoons from the gods. They hid them in their branches and when they raised their branches all the spoons dropped out. Now they are condemned to stand forever with their “hands up” as punishment. Poplar trees were so named because they usually were planted along roads and at gathering places of the people, populi.

Poplars, like the aspens discussed below, are especially important in Christian legends. Joseph and Mary are supposed to have hidden in a poplar grove during their flight into Egypt, although this distinction is claimed for many trees. French Canadians won’t cut poplar because Christ Himself had to fashion His own cross of that wood. Poplars are said to shudder both because they feel so badly about letting the cross be made from their wood, and because Judas is supposed to have hanged himself from a poplar.

The aspen is also credited with being the tree of the Cross and for that reason is still quaking. Another legend has it that all other trees bowed in shame for the Crucifixion except for the aspen. Because of that sinfulness, it was doomed to perpetual trembling. But because it trembles uncontrollably, it is said to have the power to cure people with palsy.

Birch trees are really important. They are a safeguard against lightning, wounds, barrenness, evil eye, and caterpillars. They are, in addition, an expression of authority in teachers. Long ago in mythological times a man being tried for a crime would be flogged with birch rods until he worked up a real sweat. Then young birch trees would be cut to form a circle around him, and genies of the woods would enter the circle to bargain for his soul. Favors were granted to any who would sell out. Christ was beaten by rods of birch and the type used is still stunted in shame. The Yule log was traditionally birch with all its bark stripped off and had to be kept alight from one Christmas to the next. The Russians believed birch was a symbol of health because it is tall and virile. The Indians thought the sap cured consumption, the oil was a lubricant, and the bark made wonderful torches, paper, canoes, lodges, baskets, and you name it.

The beech tree was used for Jason's Argo; Bacchus quaffed his grape juice from
bowls made from beech; the Indians buried their dead in and under beech trees so wild animals would not bother them. Beech trees must have some special property not belonging to other trees.

And now we are at the Polonia tree, ready to ascend into the Arboretum proper. Heathen gods had favorite flowers just as we do, and they say the first garland ever known was made of blossoms from the tree of Heaven for Cri, the Indian counterpart of Venus. She put them around the neck of Indra’s elephant who became maddened by their odor and flung the wreath to the ground. This action so angered Siva that he cursed Indra for permitting this sacrilege to occur and punished him by throwing him to the earth, thereby causing him to lose eternal life. It also caused plants to lose immortality.

In the Bible a burning bush which did not consume itself spoke to Moses and encouraged him to lead his people out of bondage from Egypt. As far as botanists and historians can tell, this bush could have been an Euonymus because of its possible existence in Egypt, its flaming leaves and its flaming berries. It is a veritable burning bush, much more likely a candidate than the blackberry that some folklore credits with being the Biblical bush. Coincidentally, last year when the clubhouse burned to the ground, our euonymus stood bravely there, practically the last outpost of material which did not burn. And it certainly resembled a flame again this October. This plant is also the spindle tree which provided spindles throughout Europe, including those in “Sleeping Beauty.”

The maple anciently was an emblem of reserve because of its unimportant blossoms. Maple must have been one of the important trees in Italy as Pliny sings its virtue as a curer of liver ailments, and Cicero had a maple table worth its weight in gold. Drinking cups were made of hard maple when gold and silver were scarce.

There is a lovely Hungarian legend of a blond daughter of a king who was killed and buried under a maple tree by jealous brunette maidens. The branch which grew out above her grave was made into a flute which sang and talked of its own accord. The wicked girls were apprehended, but this did not bring back the lovely blonde maiden.

I like the tale told of the sugar maples, about the discovery of maple syrup. Some tales credit Hiawatha with this discovery but others say it was a young squaw who cooked moose meat in sap from the nearest tree when she could find no water handy. Seeing the mess it made while cooking, she fled fearing her brave’s wrath. When she crept home later he was still licking his hands in utter luxury and he embraced her, promising she should be his forever for making such a discovery.

The history of the fir is full of legend both pagan and Christian. Pagan girls danced in circles around fir trees, in Germany’s Hartz mountains, after they had decorated them with eggs, baubles, and lights. By so doing, they prevented the escape of the imp who was imprisoned within the fir branches. The imp had to give them whatever they wanted or stay imprisoned forever. Somehow this imp became St. Nicholas.

When you light up your Christmas tree, if it is fir, and you are brave, look at your shadow on the wall. If it is without a head, you will die within the year. If you cut off a fir branch and lay it across your bed, you will fend off nightmares. If you are worried about lightning, just put a partly burned branch outside your door and no lightning can possibly strike. If you are afraid of a burglar in your barn, put a branch outside the door and no harm will come to the contents.

Legend has it that a miner became ill and his wife went into the forest to pick up cones for seed to sell. A little old man with a white beard told her to get fir cones only. As she walked home her basket became so heavy that she could hardly carry it, and when she looked the cones had all turned to silver. That is why today we
spray cones with gold or silver paint.

Fir was the symbol of the elect in Heaven, and it was used for the ceiling of the Temple of Jerusalem. It had also been the choice of Zeus, and so had been used in the construction of Greek temples. In the 4th century a large pagan temple in France was being converted for Catholic use. When it came to ripping out the fir beams, public opinion forced St. Martin not to touch them.

Cedar trees are renowned for beauty, stateliness and majesty. Solomon's Temple was of Cedar of Lebanon. Cedar was supposed to be a tree of good fortune, and so it was much in demand for idols and god figures. There is an oil in cedar which keeps insects away so the tree was credited with supernatural power to fend off insects and was much used by ancient Egyptians for mummy cases, some of which have withstood the ravages of several thousand years.

There is a Chinese legend of the eternal triangle, the villain in this version being the Emperor who imprisoned and then killed a faithful servant so he could have his wife. The wife flung herself from a great height to avoid the Emperor's attentions. The Emperor would not let the husband and wife be buried together but a cedar tree sprang from each of their graves and grew large enough so that the roots and branches intermingled.

The poisonous drink which killed Socrates, and many other political foes of ancient Greece, was hemlock, but not the tree. We still have water hemlock as a dangerous weed right here in the Arboretum. The plant is quite beautiful but should be avoided. The Quinault Indians used to believe in magical properties of the hemlock tree. They hollowed out hemlock logs, filled them with small objects and caused storms by dancing around them and incanting. There is a common, but wrong, belief that the tip of a hemlock always bends to the north. The tip always does bend, but cannot be used as a compass.

(to be continued in the fall issue)

Winter Damage -- Victoria

(Continued from Page 31)

We lost a 70 year old specimen of Trachycarpus Fortunei in a rather wet site. Eucalyptus species were killed outright or to the ground except E. parvifolia and E. Perriniana, leaves only burned. Some are now breaking at ground level. Erica arborea, E. mediterranea and some of its varieties were killed outright, but generally speaking, injury varied according to age, site and species. Specimens of the English selection Quercus coccinea 'Splendens' up to 5 inches to 6 inch D.B.H. were killed outright. This is hard to explain.

Splitting of trunks was noted on Prunus yedoensis, Sorbus aucuparia, S. Wilsoniana and Malus species. On the cherries, splits were worse on older trees. Trunks and scaffold branches were split for five or six inches. These were immediately treated and no permanent damage is apparent at this date.
Cassiope and Phyllodoce

Sallie D. Allen*

The climate and naturally acid soil of the Pacific Northwest have provided ideal conditions for growing most members of the Ericaceae family. The rhododendrons, heathers, kalmias, gaultherias and pernettyas, to name but a few, are beloved by our gardeners not only for their natural beauty and year around interest, but because they thrive here with a minimum of care.

There are many genera of this large family, not nearly as well known as they should be, Cassiope and Phyllodoce among them. A few species have been grown, mainly by alpine gardening specialists, but horticulturally speaking they have been somewhat overlooked in this country. Unfortunately they have gained the reputation of being difficult to grow, perhaps stemming from the fact that they have not been offered in the nursery trade, and only collected native material has been attempted.

The name Phyllodoce (pronounced fi-loh'-doh-see) comes from Greek mythology, meaning sea-nymph. It is a genus of charming small evergreen shrubs native to alpine areas of the Northern Hemisphere. The needle-like foliage closely resembles the European and South African ericas. They are difficult to tell apart by the foliage, although there is some variation in the size, shape and color of the leaves.

There is considerable difference in the flower shape, ranging from saucer to urn shape, and in color there are white, yellowish, and all shades of pink to purple. The flowers appear at the tips of the foliage in loose umbels or racemes.

Cassiope (Cas-si'-o-pee) in Greek mythology was the mother of Andromeda. Andromeda was the genus into which all diffi-

*Mrs. Allen has grown and studied these fascinating small shrubs for some years, in her suburban garden north of Seattle.
and are light to dark purple in color. Of three plants in the garden, two are semi-procumbent to about 3” in height, the third collected in the mountains of Japan is upright to 5”. It is not as easy going in the garden as the other species.

P. empetrifor misuse is native to the mountains of the northwest United States, British Columbia and Alaska. Under cultivation it is stiffly upright, to 12”, and as large across. It is proving an excellent garden subject, freely producing the attractive rosy purple, campanulate blossoms at the tips of the branches.

P. glanduliflora, native to the western United States, British Columbia and Alaska, has grown to 15” in height and 24” across. In nature the urn shaped flowers can be a greenish yellow or a good rich cream color. The foliage is lighter green than the other phyllodoces. It is a strong grower and a good garden subject.

P. nipponica, confined to the mountains of northern Japan, is an extremely variable species in height (3-10”) and the size of the pure white bell-shaped flowers. Curiously, the 3” plant now (mid April) is covered with bells twice the size of the larger plants.

P. n. var. amabilis, about 6” in height, differs from the species only in that the bells are pink tinged.

P. n. var. oblong-ovata (formerly P. tsugafolia) is so similar to the above that further research is required to determine its correct identification. Typical of P. nipponica is its shiny needle-like foliage, giving it a lacquered appearance. They are easy-going garden subjects, flowering well.

P. intermedia “Fred Stoker” (empetrifor misuse x glanduliflora) is a named natural hybrid intermediate between its two parents, the flowers shaped much like P. caerulea but a soft pink color.

CASSIOPE—13 known species.

Cassiope ericoides is native to northeast Siberia. Of five collected plants received from a Russian geologist in Magadan, Siberia, five years ago, only one struggling plant remains. Upon arrival in November, they bloomed profusely. The flowers were small but quite charming. The long, reddish cilia is apparent to the naked eye and to the touch, the foliage is soft and downy. It has defied propagation, regardless of the time of year cuttings have been taken. This is perhaps the only plant of C. ericoides in cultivation.

C. fastigiata, native to the Himalayas, grows from 6-10” in height. Each closely packed leaf is grooved on the back and edge with a white membrane, giving a silvery appearance. The large white flowers are framed by a red calyx. It is rather difficult to keep neat in the garden. This is how it grows in its native habitat, however, according to a friend from Sikkim who visited the garden several years ago.

C. f. (L. & S. 17451) is a smaller edition of the above, growing only to 3” in height. The flowers are as large as the species, however, and it is an excellent, easy going garden plant.

C. hypnoides (Harrimanella hypnoides) is a tiny prostrate little shrub which could easily be confused with a moss when not in flower. It is native to N.E. United States, Norway and USSR. The minute foliage does not overlap as in most other species, but spreads out from the branches. The campanulate flowers appear at the tips of the foliage, the corolla lobes do not recurve. It is extremely difficult to keep in the garden.

C. lycopodioides is perhaps the best known and most widely grown of all Cassiope species. Those in cultivation are of Japanese origin. It forms a mound of slender branches and freely produces its elfin bells that can almost completely hide the foliage. The white membrane edging the tiny leaves is much more prominent in the Alaskan form because the foliage is a much darker green. This form does not have the dense mounding habit, but grows flat to the ground and does not flower nearly so freely.

C. l. var. rigida (major) is more robust growing, but does not flower as well as the species.
C. Mertensiana, whose native habitat is the northwestern United States, British Columbia and Alaska is a variable species which can grow 6-10" in height. The leaves are loosely imbricated and keeled on the back. In our mountains plants may be found with varying sized flowers, and calyx color may be greenish, red or mahogany. This is not one of the better cassiopes for garden culture.

C. M. var. californica, restricted to the Sierras in California, is more upright in growth and the branches are more slender. It has a curious suckering habit. Collected plants have not as yet flowered, although it is an attractive foliage plant.

C. M. var. ciliolata, reported only from the Mt. Shasta, Mt. Eddy areas of California differs from the species by the fine cilia edging each leaf. This may prove to be of garden merit.

C. M. var. gracilis, from the Wallowas in Oregon, and only a few stations in Idaho and Montana, is more slender than the type, of excellent foliage and habit. The flowers are large and freely produced. This may well prove to be the best of all cassiopes in attractiveness and ease of culture.

C. selaginoides, native to the Himalayas, grows stiffly upright from 5-10" in height. The leaves are distinctly grooved on the back and bristle tipped. The large bells appear toward the tips of each branch. It is one of the most satisfactory species in the garden and of easy culture.

C. selaginoides (L. S. 13284) is a miniature of the above in foliage habit and size, although the flowers are every bit as large as the type.

C. Stelleriana (Harrimanella Stelleriana), may be found in northern Japan, Kamchatka, Alaska, British Columbia and as far south in Washington as Mt. Rainier. Similar to C. hypnoides, it has spreading rather than imbricated foliage, and is prostrate growing. Red buds appear at the tips of the branches, opening to comparatively large creamy white campanulate deeply cleft flowers. It grows well in cultivation but seldom blooms.

C. tetragona is circumpolar in distribution, the southernmost limit in the United States is probably Juneau, Alaska. The foliage is dark green with a deep groove up the back of the leaves. So far it has been impossible to keep for long in the garden.

C. t. var. saximontana is much more amenable to cultivation. It has slight botanical differences from C. tetragona but for all practical purposes they are alike. The flowers are small, but attractive in contrast to the dark foliage. It has been reported in western British Columbia and just three mountain tops in Okanogan County in Washington. It needs further study before it could be considered anything but a collector's plant.

C. Wardii, from S.E. Tibet, is perhaps the most unusual of all cassiopes because its foliage is so hairy that it is often mistaken for a little cactus when seen in the garden. The foliage is distinctly 4-ranked; the leaves are grooved up the back and tightly packed along the stiffly upright branches. So far it is very slow growing.

In recent years a number of amazing hybrid cassiopes have been discovered in private and botanical gardens in England and Scotland. They retain the natural charm of cassiope species, but have that hybrid vigor in ease of cultivation and profusion of bloom. The following are those selected and named hybrids that the author has grown and finds outstanding in every way.

Cassiope 'Muirhead' (Wardii X lycopodioides) named after Winsome Muirhead, associated with the Royal Botanic Garden in Edinburgh, was one of the first to be distributed. It is a much branched shrub to about 12" at maturity.

C. 'Edinburgh' (fastigiata x tetragona), is more upright, open in habit and taller.

C. 'Randle Cooke' (fastigiata x lycopodioides), C. 'Beardsden' (a Wardii hybrid), and C. 'Badenoch' (fastigiata x lycopodioides) are too new here to determine eventual size or habit. Each has its own personality, and at this time of writing is completely covered with flowers.
It must be realized that in the past it has been difficult to obtain *Cassiope* and *Phyllodoce* species in this country. U.S. natives had to be sought out and all plants are a result of material collected in the wild in the form of small plants, cuttings or seed. Japanese representatives were also collected, by an alpine enthusiast in that country. The Himalayan *Cassiope* species and hybrids were obtained through people in England and Scotland who share the interest in these fascinating little shrubs. Plants from foreign countries must be sent bare rooted, and undergo fumigation at the port of entry. For these reasons it takes a long time to establish them and sometimes years before they flower. This is why it is difficult to make positive determinations of ultimate size of plants under cultivation or true value of some of the more recent acquisitions.

Whether plants come from 15,000 ft. in the Himalayas, the Japanese Alps, the mountains of western North America or elsewhere, they all come into flower within a few weeks of one another in the garden, beginning in mid-April. It is interesting to note that after the past long cold winter, never have the cassiopes and phyllodoces bloomed so profusely, nor has the foliage been as beautiful. Needless to say they are completely hardy.

They enjoy the same growing conditions, an acid, peaty, well drained soil, and in our Pacific Northwest gardens full sun or light shade. Like so many members of the *Ericaceae* family, they must have sufficient moisture, but never be allowed to dry out. Do not use commercial fertilizers. Rotted wood and leaf mold incorporated into the soil will provide all the nourishment necessary.

Cuttings may be taken any time during the growing season although late June and early July are considered preferable. Insert 1-3” pieces of unflowered branches into a peat and sand mixture and keep damp and shaded. Cuttings root readily but when transplanted into a more nourishing soil, there usually is no noticeable growth the first year. They may also be propagated by layers or seed. Prune plants after flowering, if ungainly branches occur, but do not destroy the natural irregular habit by too much pruning.

Plant material is being distributed as fast as propagations can be made. Specialist nurseries have been encouraged to take cuttings, so look for available plants in the near future.

The Foundation is happy to announce to its members that the Special Spring Plant Sale held at Southcenter May 9th and 10th netted approximately $5,000.00. All proceeds go toward the construction of new office buildings in the Arboretum. Featuring blooming spring plants, the sale aroused Arboretum interest in a new area. The support of our many friends and dedicated workers, under the able leadership of Mrs. John D. Sundberg, chairman, and Mrs. Leon Phillips, co-chairman, made possible the success of the sale.
Flowers of the Brazilian Forests

In 1967 and 1968 the University of Washington Arboretum received two monetary bequests from the estate of the late Otto E. Holmdahl, for many years a well-known landscape architect in Seattle; together they totalled almost $1,000.00.

In July 1968 a review of a new and highly unusual book was noted in the Journal of the Royal Horticultural Society (London, England). This book, Flowers of the Brazilian Forests, by Margaret Mee, was so highly praised by a critical and most competent reviewer, Wilfrid Blunt, author of The Art of Botanical Illustration (Collins, London, 1950), that a decision was made to obtain a copy for the Arboretum library, despite its exceptionally high price ($252), as a permanent and fitting memorial to Mr. Holmdahl, who certainly enjoyed and appreciated the Arboretum and its plants during his lifetime and had been responsible for the first plantings of rhododendrons there (the Tenny collection). So in October the volume was ordered for us by the University Purchasing Department from a bookseller in London with whom we have been doing business for many years and duly received at the end of December.

On even a superficial examination the work unquestionably lives up to the high praise given it by Mr. Blunt. Published in London by the Tryon Gallery and designed by George Rainbird, but printed in Amsterdam by L. van Lear & Co., it comprises thirty one plates measuring 20⅜ by 15⅛ inches, reproduced from watercolors made in the Brazilian jungles by Mrs. Mee, frequently under conditions of the greatest difficulty and with considerable risk to life and limb from a variety of dangers. That she was able to accomplish work of such outstanding quality of drawing and coloring and bring the paintings safely home speaks highly both for her enterprise and courage as well as her artistic capabilities.

On the page facing each plate are first, a botanical description of the plant in English by a recognized authority such as Dr. Bassett Maguire of the New York Botanical Garden, or Dr. Lyman B. Smith of the Smithsonian Institution; second, an account by Mrs. Mee of the conditions under which she found, obtained and painted the particular specimen. This, as can well be imagined, often provides astonishing or exciting reading, although Mrs. Mee is not given to enlarging upon her own share in this undertaking.

Amongst the plants thus illustrated are nine orchids, six members of the pineapple family (Bromeliaceae), a begonia, a passion flower, one of the famous water lilies of the Amazon, Victoria cruziana, and a very remarkable and handsome epiphytic Hippeastrum with green flowers (H. calyptratum). The addition of a double page map showing the localities in Brazil where the plants were found is another valuable feature indicative of the care and thought which went into the production of this superb book, which will probably rank among the best of its kind produced in the 20th century and be able to stand honorably alongside the cream of those published in Europe towards the end of the 18th and early in the 19th centuries.

We feel privileged to have obtained one of the limited number of copies available and believe that Otto Holmdahl will be worthily commemorated by it. Plans for another kind of memorial to him in the Arboretum are now being formulated, to use the balance of this bequest. For the present this valuable book is in the Rare Books section of the University library, in the charge of Mr. Robert Monroe, Curator.

B.O.M.
A Tribute to Gene Webb

It is with regret the executive board announces the retirement of Gene Webb, who has served the Arboretum Foundation as a dedicated and loyal executive secretary for twenty-two years. Her competence, cooperative attitude and her special attention to details, together with her completely honorable and trustworthy nature made her an outstanding member of the foundation organization. Much of the credit for the growth of the foundation through Miss Webb’s tenure in office must be attributed to her efforts in our behalf.

Despite the fact that foundation membership more than doubled during this period, Miss Webb was thoroughly acquainted with the entire membership. She knew and recognized everyone by name. Her friendliness attracted people and held them. Her telephone voice, often the initial contact for prospective members, was one of cordiality and lilt.

Gene Webb was more than an executive secretary. Her efforts in regard to the Bulletin are an illustration of this. She helped procure articles, did the layout, supervised and solicited advertising, and was constantly on the alert for suitable illustrations, maintaining a special file for such purposes. The Bulletin editorial board will miss her greatly.

Nor can her efforts in connection with the units go unnoticed. Her great enthusiasm and interest in all programs—plant sales, educational projects, greenhouse endeavors—gave cohesion and continuity to what could have been a totally unwieldy operation. She constantly gave backing, support and assistance in the odd chores that 2000 women can find to do.

A special notice must be made of her artistic talent of which she gave so freely.
The Bulletin, the distinctive and unique covers of the unit council yearbooks, the beautifully hand lettered memorial acknowledgement cards, special commendations, name tags for various occasions, all testify to a talent shared generously and graciously.

While we regret her loss, and shall miss her sorely, we wish her much happiness in her newly acquired status. She has earned the respect and admiration of all foundation members. To her, in expressing our official thanks for twenty-two years of loyal service, we say additionally “goodbye, good health, and godspeed!”

ROBERT J. BEHNKE, President

Mr. Behnke has asked Mr. Donald Graham, one of the founders of the Arboretum Foundation, to comment on Miss Webb’s long dedicated years of service to the Foundation. Mr. Graham’s comments follow:

Gene Webb, executive secretary of the Arboretum Foundation, has resigned. Her service continuing over a period of 22 years has been an important contributing factor in the growth and importance of the Arboretum Foundation. In fact, without Gene Webb it is questionable whether the Foundation could have survived. Miss Webb was more than a clerical employee; she exercised important administrative functions.

There have been many instances over the years of Miss Webb’s inestimable value not only in originating ideas for strengthening the Arboretum Foundation but also in carrying out its functions. In addition to her work on the plant sales and membership, Miss Webb worked closely with the Bulletin editorial board in putting out the Bulletin. She was continuously on the job when something had to be done or a deadline had to be met.

The University owes a debt of gratitude to Miss Webb. The outstanding record that the Arboretum Foundation achieved during Miss Webb’s tenure was due, in an important part, to Miss Webb’s efficient administrative functioning as executive secretary.

It is with a sense of sorrow and loss that the members of the Arboretum Foundation, especially those of us who have had close contact with Miss Webb over the years, realize that she is no longer available and working. She is entitled to the gratitude and respect of all of the members of the Foundation.

DONALD G. GRAHAM

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This is your Arboretum, kept alive by your support

We are pleased to welcome the following new members (March 2, through May 31, 1969): Contributing—Mrs. Ben J. Lehman. Sustaining—Mrs. Fred J. Czerniiski, Jay Wilbur Helm, Claudia L. Miller. Annual—Mrs. Gerald S. Allbright, Mrs. John Aydolette, Mrs. Gwen Bell, Mrs. Rodney E. Boone, Mrs. T. J. Bowles, Mrs. Dean H. Brockaw, Mrs. Charles S. Burdell, Mrs. Kenneth Chaney, Mrs. D. Colasurdo, Mrs. Norman R. Cole, Mrs. Maurice H. Evans, Mrs. E. Robert Farrell, Mrs. K. L. Ford, Mrs. John Gotshall, Mr. & Mrs. Donald W. Hamilton, Mrs. John W. Harder, Mr. & Mrs. Harry H. Howell, Mrs. Dale Huggins, Mrs. Sylvester J. Huse, Mrs. Kathleen A. Huston, Mrs. Charles E. Johnson, Mrs. Vickie Kessler, Mrs. George A. Kirsch, Jr., Mrs. Joseph R. Marshall, Marlies H. McKibbin, Mrs. Clifford N. Middle-


We are also most grateful to the following members who have increased their dues to: Contributing—Mrs. Leo S. Black, Mrs. Whaley Patterson, Mrs. R. J. Richardson, Mrs. Howard S. Wright. Sustaining—Henry Anderson, Cdr. & Mrs. Norman C. Harvey, Forrest Sainsbury, Mrs. W. J. Wood.
by facilities include winter sports areas, an information center, campgrounds, picnic areas, forest trail, and the Snoqualmie Valley Wagon Road.

This recreation area is dedicated to the memory of a great naturalist, photographer and conservation leader who helped to awaken national interest in the scenic beauty of the Pacific Northwest. Born in Le Sueur County, Minnesota, Asahel Curtis came to Washington in 1887 and later established his own photographic studio. He specialized in outdoor subjects. His exhibits appeared at the Golden Gate International Exposition and the New York World's Fair. He helped found The Mountaineers, worked for the establishment of the Olympic National Park and served on the Mount Rainier Advisory Committee.

In 1964 the Asahel Curtis Interpretive Trail was completed, culminating three years of cooperative effort between the Forest Service and the East Lake Washington District, Washington State Federation of Garden Clubs. Some 50 plant species have been labeled for the enjoyment of visitors who walk the half-mile loop trail. Interpretive signs describe the forces of nature that are at work in this ever-changing forest community. Rustic benches tempt those who feel that rest and contemplation are part of the adventure.

Just 50 miles east of Seattle, a small parking area on the right-hand side of U.S. Highway 10 marks the entrance to the Asahel Curtis Interpretive Trail. It is always cool and quiet within the grove, and is a welcome change from the sights and sounds of the city. Somehow even the noises of the nearby freeway are buffered, and the visitor is caught up in the natural-ness of the area. Little wonder that this has become a favorite spot for thousands of local residents, students and international guests from many countries.

As part of the modernization of Interstate 90, the State Highway Department plans to improve public access to the Asahel Curtis Recreation Area. The Forest Service will relocate the trail entrance and provide a larger parking area. The Garden Clubs have selected a quiet spot just off the main trail to be developed as a rest area in memory of Mrs. Page (Pat) Ballard, an active Arboretum member who helped identify many of the plants along the interpretive trail. Thus man continues to plan confidently for the future of a fascinating stand of trees already a century old when our nation was born.

**PRINCIPAL BOOKS ACQUIRED BY ARBORETUM LIBRARY, 1968**

- Sertum Anglicum (1788), Charles-Louis L'Héritier de Brutelle; Hunt Botanical Library, Pittsburgh, Penn. 1963, (reprint) Gift of Arboretum Unit #66
- A Supplement to Elwes' Monograph of the Genus Lilium, Parts VIII and IX (1960-1962); W. B. Turrill; illustrated by Margaret Stones. Purchased from memorial funds.
- A Description of the Genus Pinus, Aylmer Bourke Lambert, Esq.; Messrs. Weddell, London, 1832; Vol. 1, 2; gift of Arboretum Unit Council.
- Trees of the Australian Bush, Eric Worrell and Lois Sourvinou-Ingrao; Angus & Robertson 1967, Halstead Press, Sydney, Australia. (Gift of Lord Talbot de Malahide, Dublin, Ireland.)


Illustrations of Flowering Plants of the Falkland Islands, Mrs. E. F. Vallentin; L. Reeve & Co., Ltd., 1921.


"The Golden Age of Plant Hunters" is an enthralling, amazing, and best-of-all, true story of the crucial seventy-four years of plant collecting from 1788 to 1842 by the Scotch gardeners sent out to all the world by the Royal Botanical Society and the King of England. These years were chosen by the author because of the tremendous harvest of plants which were for the first time seen in England, and because of the exciting story of the men who did the collecting and their incredible achievements in spite of extreme hardship, extreme heat, extreme cold, extreme danger, and extreme lengths of time it took to transport specimens home to Kew Garden or to the private "stoves" (conservatories) of the wealthy estate owners of England who financed some of the expeditions. In 1842 the Ward case for carrying specimens was invented by Dr. Nathaniel Ward, and the transportation from then on was a comparatively simple thing. Also by that time over 13,000 different plants were growing in English gardens, almost one fourth of the estimated flora of the world.

The book starts with a brief rundown of earliest plant collecting and gardens, including the coven men who planted useful shrubs near their caves, and Queen Hatshpsut who sent an expedition to the Gulf of Aden 5,000 years ago to secure Cassia and Cinnamon for her Nile gardens at Luxor.

In 1768 Sir Joseph Banks partly financed an expedition (Captain Cook's first voyage around the world), with an expenditure of £10,000 of his personal fortune. His own brave and resourceful conduct on this expedition and his great success in bringing home seeds, plants, drawings and biological specimens, made him well-qualified later to select his successors for the Royal Horticultural Society and Kew Gardens. Sir Joseph's book on the expedition was not published until 1896, and then not completely. Parts of it were used without credit by Hawkesworth in his "Cook's Voyages" published in 1773. In 1900 Joseph Britten published the British Museum's catalog of the Discoveries, including in it 742 copper plates made from some of the 955 drawings of the Banks expedition.

Each chapter of the book is concerned with a particular plant hunter, and they wandered from "Dan to Beersheba"—Africa, Asia, South America, North America, India, and assorted various islands, including the Sandwich Islands (present-day Hawaii), Majorca, the West Indies, Macao, etc.

Francis Masson was selected by Sir Joseph Banks as Kew's first hunter, and his African exploration brought geraniums and heathers to England in prodigious numbers. Not small among the hardships suffered by the hunters was the directive of Kew to keep a daily diary in duplicate of all findings, along with comments on soils, climate and pertinent details of the day. In Africa Masson endured perils from hungry lions and hostile natives, and also drove a 12-oxen wagon on a 400 mile collecting trip.

David Nelson sailed in the "Discovery" on Captain Cook's last voyage. Nelson saw the murder of Captain Cook by natives in the Sandwich Islands, and on his next hazardous trip, was with Captain Bligh on the "Bounty" and lived through the famous mutiny. Of course, all his collections and records were lost when the mutineers took over. Nelson lived to reach the Dutch East Indies after enduring the dreadful voyage of the "Bounty" survivors, only to die of fever in the Dutch East Indies.

William Kerr was sent to China, but was heavily handicapped by lack of funds. However, his collections include Cunninghamia lanceolata, Juniperus chinensis, and as a lasting tribute to himself Kerria japonica.

George Donn collected in Africa and South America, with his special concern to garner new species of fruit trees. But the greatest tree collector of all was David Douglas who has given the most to forestry and to the forests of England and who is of such special interest to the Northwest and the Pacific Coast. The hair-raising story of the hardships he was subjected to is well worth reading, and reminds us of the debt the world owes to him. He was killed in Hilo after only ten years of collecting activities, but the work he accomplished could not conceivably equal his actual achievements during those dangerous, disastrous, disease-filled years of successful collecting.

John Gibson's successful garnering of orchids in India and also bringing home to England the first specimen of the "most beautiful tree in the world," Amherstia nobilis, is a thrilling tale of devotion and success of a modest man who worked for the Duke of Devonshire and was truly worthy of his hire.

The whole book is an exciting tale of who-dun-its, and of men who really did do it. If you start reading it, you will be reluctant to put it down until it is finished, and then you may want to reread it!

Mrs. Bernice F. Smith
Forest Resources Librarian

Trees for Architecture and the Landscape, by Robert L. Zion; Reinhold Book Corp. (New York, N.Y., 1968), price $25.00

Mr. Zion, an established landscape architect with an extensive practice in New York City, has produced a beautiful book for the coffee table, drafting board and the conference table. The price might suggest the coffee table as the best spot for the display of elegant photographs that are the book's strong points; however, on closer examination one may find a wealth of information which could be useful at the drafting board or conference table of the architect or landscape architect. The general reader will find a fascinating book which, besides presenting a handsome series of tree portraits delves into practical considerations of tree planting, characteristics (or design data) of a select list of trees and an
intriguing list of trees recommended for use in each one of 48 states (Hawaii and Alaska were not included).

As a decorative book with a great deal of valuable information this has a place on many shelves and tables; however, it is less a scholarly than a practical textbook of arboriculture. The large type and fine photos make the book extremely readable but an inadequate index removes some of its value as a textbook.

To me the most interesting section is that on practical considerations, which are really personal comments on the use of trees derived from Mr. Zion's extensive experience in which he has seen trees as "furniture with which an outdoor room can be enhanced." Other persons might see trees as potential columns, walls and roofs for outdoor rooms as well as furniture, sculpture or wallpaper, but Mr. Zion's comments are well worth study and he does illustrate instances of the architectural use of trees. The chapters on protection of trees during changes of ground levels, planting of trees including the moving of large specimens, and rooftop planting describe many contemporary design problems of which both professional and amateur landscape designers should be aware.

It has been said that the finest landscape design is that which one does not notice, perhaps because it seems as if it was always there. Mr. Zion poses this problem in another way by a perceptive discussion of the choice of the appropriate tree as only one unit in the total landscape. Eric Hoyte

CLARKE, Robin

We all fall down; the prospect of biological and chemical warfare, London, Penguin Press, 1968.

An account of "the only weapons that have ever been invented for the single purpose of decimating civilian populations." Interesting especially for accounts of defoliation and chemical effects on ecology.

VERMES, Jean C., editor.

The wilderness sampler; a tonic of great writings about the moods and majesty of nature. Stackpole, Harrison, Pen., 1968. $5.95.

Thirty-two prose and poetry samples of Nature's "various language—for his gayer hours... a voice of gladness and a smile" from the works of such different authors as Shakespeare, Theodore Roosevelt, Robert Louis Stevenson, Charles Dickens, Jack London and George Bernard Shaw. In truth and faction, man the hunter and man the hunted are seen—pursuit, escape, exploration—offer excitement and refreshment.

Mrs. Bernice F. Smith
Forest Resources Librarian

Our members will be interested in learning that: Mr. B. O. Mulligan has been elected to the Board of Directors of the American Horticultural Society for a three year term, 1969-71, filling one of three new vacancies approved by the members at the annual meeting held at San Francisco, Sept. 1968.

Keep Washington Green

Ed Loners

Not the least of our natural resource blessings in the State of Washington are the vast green forests. To the recreationist the forest is a cool, comfortable, tall, green community of trees—a thing of beauty and spiritual fulfillment. To the forester, the forest harvester, the forest products manufacturer, the forests are their bread and butter, profession, and business. They operate the forests as tree farms, harvesting the volume they can grow annually.

Minimizing man-made wild fires in the forests of the State of Washington has been a continuing objective of the Keep Washington Green Association. Organized in 1940 for that specific purpose, it was the first "Keep Green" agency in the United States. The occurrence of man-made fires since the inception of Keep Washington Green Association has been halved. Losses from wild fires in the forests have been materially reduced, and their air has been essentially cleared of smoke from wild fires in the forests.

Promoting fire prevention has been and continues to be accomplished in many ways. The Annual Spring Governor's Banquet is the kick-off for the new fire prevention season which commences with the Governor's blessing. Annually, the Keep Washington Green Fire Prevention Poster Contest is held in the schools throughout the state with almost twenty thousand students participating. Highway signs "KEEP WASHINGTON GREEN" and "USE YOUR ASHTRAY" are repainted at strategic points on the state's highways each year. Thousands of fire prevention posters are posted on roads and trails annually. Many other approaches to "sell" fire prevention are also used. Of great importance are the excellent fire prevention messages carried on the State's television and radio stations as well as those carried in the daily and weekly newspapers of the State as a public service.

In total, FIRE PREVENTION helps keep Washington green, and keeping Washington green is everyone's business in the state—whether resident or visitor.

Man-caused forest fires can be prevented! Be sure that all matches, smokes, camp and trash-burning fires are dead out before leaving them.

Help prevent forest fires and help KEEP WASHINGTON GREEN.

Ed Loners, Director
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