George Landis Arboretum NEWSLETTER

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SEED EXCHANGE

"Just what does your arboretum get out of this seed exchange?" someone once asked me. Fortunately I had a practical answer. I showed him the young seedlings in the sunpit, waiting to be set out as new plants in the arboretum, and the excess to be sold at the yearly Rare Plant Sale.

But what I wanted to say was, "Do you have to get something out of everything you do? Is the humanitarian desire dead in this war-torn world?"

I think that anybody who has worked for a long time with a large arboretum or botanical garden comes to feel that he is working not only for the arboretum and for its local patrons, but that it, along with similar institutions all over the world, is working, in the end, for the joy of humanity. The production of new cultivars suitable to various climates, the information on successes and failures, the giving of educational programs, all go further than local communities.

Of all of these, it seems to me that perhaps the seed exchange is the most valuable. To share seed from our White Oak, one of the fine species of the world, that will likely produce a similar tree on the other side of the globe, to be enjoyed there as our White Oak has been enjoyed here, is, to use an almost forgotten word, a noble act.

When I climb a mountain in Mexico, looking for seeds for our yearly supplemental Mexican seed list, I often think when I have found a tree or shrub that would be beautiful in any garden of the world, "I hope it will flourish in Australia or around the Black Sea, or that someone there will enjoy it as much as I enjoy seeing it here." -Fred Lape

Common as our trees, shrubs, and flowers are to us, they are rare and strange to those people in other parts of the world, and their trees, shrubs, and flowers are rare to us. The George Landis Arboretum plays an important role not only in obtaining specimens and seeds from around the world for trial here in this state, but in sending specimens and seeds of our native trees, shrubs, and flowers to other arboretums and botanical experimental stations all over the world.

From very small beginnings some twenty years ago, the Arboretum's seed exchange has grown year by year as requests come in from all around the world. In turn, as these other arboretums request seeds from the Landis Arboretum, they send their lists of seeds available for exchange. All seeds are offered free of charge by all arboretums.

The seed harvest at the Landis Arboretum begins about the middle of June, continues through the autumn, but reaches its peak in mid-August.

Although most of the seeds collected at the Arboretum come from trees and shrubs, seeds are also collected from some unusual flowers, such as allium, early grape hyacinths, and tiny species tulips, among others.

Of course, the seed harvest varies from year to year depending on many factors, but once the crop is harvested, a listing of the available seeds is prepared and sent to botanical gardens and arboretums in the U.S.S.R., China, Japan, Australia, and throughout Europe and South America as well as to other arboretums around the United States. The arboretums and botanical gardens around the world have established an international directory which makes contact between them easily possible, and encourages the constant interchange of information, studies, and research data as well as the exchange of seeds. In order to participate in this worldwide network, the Landis Arboretum is licensed annually by the New York State Department of Agriculture and Markets to ship seeds around the world.

In the early years of the seed exchange, foreign arboretums were most interested in obtaining the seeds of the more rare or exotic species found at the Arboretum. But later on the demand changed, and foreign arboretums began requesting seed from common trees and shrubs native to New York State. More recently, the demand has changed once again as more foreign arboretums are establishing seed banks so they can start the widest range of trees and shrubs as insurance against a day when some calamity might destroy a particular species in one area of the world.

And it should be noted, too, that the Arboretum's annual seed list has been expanded significantly with the addition of seeds from trees and shrubs native to Mexico. Fred Lape, the Arboretum's founder and director, winters in Mexico and collects seeds during his stay there each year. The addition of Mexican seeds to the Arboretum's list has met with a tremendous response from arboretums all over the world and has led to a many-fold increase in both the number of requests received and the amount of seeds actually sent out.

Of course, seeds are sought for purposes other than just the starting of new specimens. Some are used for chemical analysis or to test various methods of germination because many seeds are extremely difficult to start. And, the Moscow Scientific Medical Society of Homeopathy requests seeds from which it grows plants for medicinal use.

Each year seed collection is subject to many problems. Seeds are more or less plentiful year to year depending on both the nature of the species and weather conditions. Many seeds are taken avidly by birds, often well before they are ripe enough to be collected. Not only do squirrels take pine cones before they are ready to be collected, but warm weather can cause pine cones to open and scatter their seeds. If the weather then again turns cold, the cones will close and fool the collector into thinking they are still full of seeds.

In some species, pine cones must be subjected to a heat treatment after collection in order to get them to open and give up their seeds; in the wild these pine cones actually require the heat of a forest fire before they will open. Some seeds, such as those from willows, poplars, and several maples, are not collected at all because they will not keep long enough to be used in an international seed exchange. On the other hand, the seeds from locust, wisteria, and the Kentucky Coffee tree will keep about 10 years, and some seeds collected in the Nile Valley and in India have kept for centuries.

In the international exchange of seeds language is not the problem one might expect because seeds are identified by their Latin names all over the world. However, seed orders often lead to correspondence, and the correspondents at both ends may be hard-pressed to translate each other's letters.

Of course, the international seed exchange works in both directions, and so, while sending seeds all over the world, the Landis Arboretum has obtained many seeds from other parts of the world, particularly from those areas which have climatic and weather conditions similar to those here in New York State. As a result, the Landis Arboretum has what may be the only specimen of Regel's Cutleaf Pear tree in the United States, started from seed obtained from Aschkhabad in Central Asia. And, too, the Arboretum has such local oddities as a rhododendron from Nepal, moss cypress trees from Japan, and a number of Oriental maples.

Naturally, the seed exchange also covers all of the United States. As a result, there are arboretums around the nation with specimens of native New York State trees and shrubs while, in turn, the Landis Arboretum has such rarities for this area of the country as the Bristle-cone Pine which is native to Colorado, Utah, and Nevada and which has a much longer life than the better-known sequoias and redwoods. In fact, the Bristle-cone Pine may live to an older age than any other living thing, for one cut down, foolishly, not long ago was found to have been at least 4,800 years old.

And so, even as the George Landis Arboretum offers its visitors the opportunity to see and know trees and shrubs native to other parts of the nation and the world, it is at the same time helping others to see and know the trees and shrubs of New York State. - Agnes and Kenneth DeKay

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"Meet Me Under the Old Oak" tee-shirts are available for Holiday gift giving, sizes S, M, L, XL, $7.00. Phone Nancy or Don Rexford, 864-5812 after 6 p.m. or on weekends.

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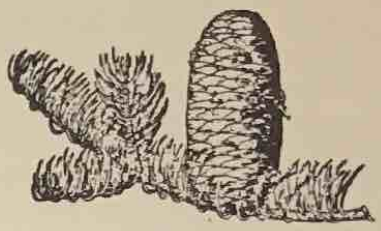

THE AMERICAN FIRS

Beautiful, lovely, magnificent, noble, lofty - each adjective latinized has been applied by botanists to particular western North American silver firs. Conifers, especially the spirelike ones - the firs - inspired deeply reverential feelings in those who beheld them for the first time in the American West a century and a half ago. Here in the East, century-old firs on large estates and in arboretums still do so in spite of less favorable environmental conditions, such as lower elevations and prolonged droughts.

I am not well acquainted with the George Landis Arboretum fir collection, nevertheless I have for a long time admired the stately firs, and I grow many of them at my place in central New Hampshire.

Firs are distinct from other conifers in two ways: 1) their cones are erect, the scales of which, upon ripening, become deciduous leaving a persistent axis, and 2) the individual needles are flattened, usually with a pair of whitish bands or stripes underneath, and, when shed, the needles leave circular scars on the smooth branchlets. Firs in the landscape are recognized by their narrow, conical form with whorled branches, the lowermost sweeping the ground. Our western firs are classed as silver firs owing to the somewhat bluish cast to their foliage. In contrast, eastern firs, the balsams, are greenish. The Douglas-fir, not a true fir, bears cones which are pendent and have conspicuous three-pointed bracts between the scales, the needles leave a raised scar, and the buds are large and sharp-pointed.

Of American firs two species occur in the East, *Abies balsamea* and *A. Fraseri*, neither of which is much cultivated. Seven western species and two varieties plus a natural hybrid are restricted generally to high elevations; one near relative, *Pseudotsuga Menziesii*, the Douglas-fir, also is widespread in the Rocky Mountains.

In our northeastern region, the fir tree seen most often in yards and parks is the Colorado white fir, *A. concolor*, with its symmetrical conical outline and its deep green or silvery gray foliage. The needles are long, up to two inches in length, and emit a decidedly tangerine fragrance when crushed. In nature this fir ranges widely through the Rocky Mountains, growing where snows are deep and heavy and summer rains infrequent. Under cultivation it tolerates light or partial shade. The bluer forms are highly prized, rivaling, or in my estimation excelling in beauty the Colorado blue spruce, *Picea pungens* var. *glauca*. In twenty years this fir attains a height of twenty feet.

The subalpine fir, *A lasiocarpa*, also is wide-ranging and reaches its best development on the flanks of the major volcanic cones of the Cascade Mountains where it grows in dramatic splendor and incredible symmetry with mastlike rigidity, according to Donald Culross Peattie (*Natural History of Western Trees*, Boston 1953). He adds, its "perfectly horizontal branches are too short and stiff to bend...(The needles) of this fir are at once stiff and all brushed upward...so the foliage ...is a spiky bed on which the snowfall is speared and held in cottony tufts... the sturdy needles refusing to yield to it and spill it". The corkbark fir, var. *arizonica*, occurs in the southern sector of its range, and grows to a lesser stature, to 50-75 feet, and is much cultivated in the East. Tips of the new foliage are gleaming silver like that of the popular Colorado blue spruce mentioned above.

The silver or lovely fir, *A. amabilis*, from southern Alaska to Crater Lake, Oregon, reaches its greatest development on the Olympic peninsula where it appears as shining angels on the steep slopes above Puget Sound. Under cultivation in Europe it is indeed lovely, but in age it fails to develop the straight slim boles its native Olympic flanks.

John Muir used to make his great outdoor's bed from boughs of the California red fir, *A. magnifica*, on his visits to the snow flats where the thirty-foot deep melting snow sinks into the ground instead of running off. This magnificent tree produces grand trunks clothed in thick, deeply furrowed rusty-red bark. Its foliage is dark bluish-green and fragrant. It bears purplish cones six to eight inches long. Alas, in cultivation in the East the plants are too tender, never reaching the magnificence they achieve in their 7,000 to 8,000 foot California tablelands.

In the lowlands of the Olympic peninsula's rain forest grows *A. grandis*, 160 to 200 feet tall. The Latin adjective alludes to its loftiness, but under cultivation this fir does not prosper. Its foliage is dark, glossy green above, almost silvery white beneath, and emits a sweet balsamic aroma if crushed.

In the Cascade Mountains of Washington and Oregon stands the noble fir, *A. procera*, in mast-straight boles, 100 to 200 feet tall. But again alas, in our stressful eastern climate this majestic fir does not succeed owing to bitter cold winters and drought-ridden summers from time to time.

I mention the seventh fir, the beautiful Santa Lucia fir, *A. bracteata*, which David Douglas sent to Kew Gardens in 1832 from Monterey, California. Its perfect spirelike symmetry is distinct as well as its long rigid brown bracts springing from between the thin purplish scales. Since its native habitat is similar to that of the famed redwood, *Sequoia sempervirens*, we Easterners cannot hope to grow it successfully.

Lastly, we come to the Douglas-fir which, since the exhaustion of the

great pine forests of the Northeast, has replaced the Eastern white pine, *Pinus Strobus*, as America's timber tree. This handsome conifer is recognized by its dense, compact crown, its dark blue-green foliage, its deeply furrowed bark, its straight boles, and the down-sweeping branches. In the West, seedlings are cut for Christmas trees, its needles seemingly glued to the upswept twigs. It makes a fine landscape specimen, but it needs plenty of sunshine to develop beautifully. - Robert B. Clark, Meredith, New Hampshire

A BRONZE BIRCH BORER PREDATOR?

For the past four or five years, all of our specimens of *Betula pendula*, the common European White birch, have gone down to the bronze birch borer. The collection was large, including trees from Norway, Poland, and Germany. They were large trees, with trunks a foot-and-a-half in diameter, and thirty feet tall. When the first sign of dying back appeared at the top of the tree, the whole tree would usually be dead within six months. Sometimes when cut down, they sprouted from the base, sometimes not.

By the end of 1982, we were reduced to just one fairly large and untouched specimen and one younger tree which had died two-thirds back and had been cut off, leaving a live stub about head high.

Now the summer of 1983 is past, and that one tree and the one stub are still standing. The stub has even sent out new branches from its cut-off top, and is growing healthily. Something here, this summer, has checked the bronze birch borer. Whether this is chance, or is just local here, we don't know. We would like to hear from other arboretums, particularly in the central United States, if anything of the sort has happened there. It may be possible that the borer has met a predator, which will, if not eradicate it, at least keep it in a cyclic advance of destruction, as the *ichneumon* wasp has checked the tent caterpiller. - Fred Lape

- CUT -

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SPECIAL THANKS

The Arboretum is grateful to the Adirondack Chapter of the American Rock Garden Society for plants for the reconditioned Quarry Rock Garden.... to Sayla Ruscitto for many volunteer hours weeding in the Van Loveland Gardens.....to Doroyth Clark for young primula plants for the Van Loveland Gardens.....to Peg Brown for planting an herb garden, for caring for it throughout the summer, and making labels to identify the plants....and to Robert Clark for donating *Hortus III* and the ten volume Everett *Encyclopedia of Horticulture.*

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The cost of duplicating and mailing this issue of the Landis Arboretum Newsletter was donated by the Friends Steering Committee.

CONFERENCE CENTER

Arboretum Trustees are happy to announce the receipt of a grant of $53,000 from the State of New York to construct a conference center to accommodate about 100 people. The conference center will be used by garden clubs, for scientific meetings, and for educational programs conducted for students. A committee of trustees was established, including Dale Morgan, Chairman, James Bates, Paul Blair, Forest Corbin, and H. Gilbert Harlow, an architect was hired, and bids have gone out for construction with completion projected for Spring 1984. The building will be rustic in appearance, blending in with the other buildings on the grounds, and will be located between the Lape house and the barn near the Beale Peony Gardens overlooking the scenic Schoharie Valley. Look for a sketch and more information in the next newsletter. - Dale Morgan

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