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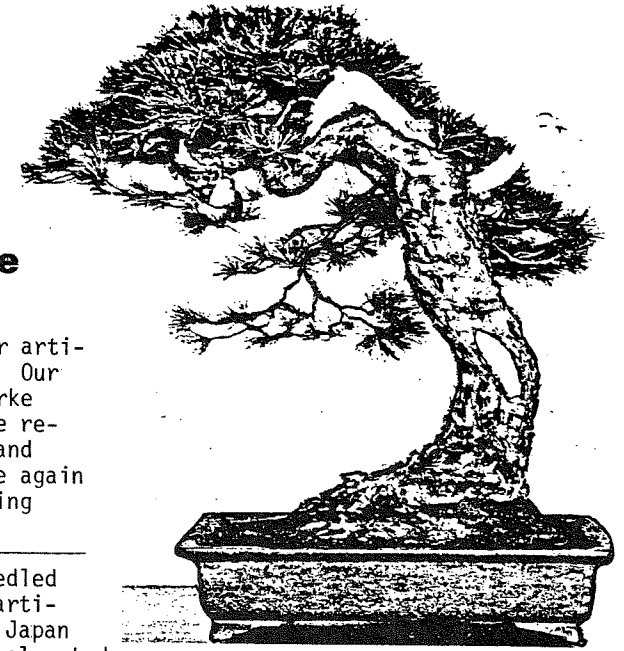


PINUS PARVIFLORA

by Joseph Burke

This is the last of the four articles authorized by Joseph Burke. Our sincere thanks goes to Joseph Burke for permitting PBA to publish the results of his scholarly research and hands on experience. Thanks once again goes to Dave Dambowic for obtaining Joseph Burke's permission.

Of the varieties of five needled pine mentioned in the following article, the current "in" species in Japan is zuisho. The desirability has elevated the price and the demand has sharply cut into it's availability on the Japanese market. However, kokonoe still comes in as a close second to zuisho in desirability, is more plentiful, and hence, less expensive. The five-needle-bundles of zuisho are smaller and more compact than those of kokonoe.



Japanese five needle pine (Pinus parviflora) driftwood slanting style. Created from a natural tree, probably 100 years old and trained into bonsai about 50 years. Approximately 28" high.

Reddish unglazed rectangular Chinese container.

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This material is the result of personal interest, study, and instruction from experts with diverse background; graduate school and the apprentice bench all with opinions and skills which developed from years of first hand experience.

The material is oftentimes speculative; perhaps it will evoke further evaluation and discussion.

In the mountains of Japanese islands - where the sun drives the reluctant frost toward the peaks in late spring - is a place where the ancient pines grow. Sun-constructed, they are bitter microcosmic conifers with thickened trunk. It is said that these dwarf pines are the dwelling place of the eternal spirit.

Highly prized for bonsai training, this native five-needle pine called Goyo-Matsu, was hunted with campaign strategy and dug with utmost care, often from some precipitous cliff perch at great personal risk.

Nurtured and trained for a century past, they establish the standard of excellence for bonsai and are revered as national art treasures.

Aesthetic Drama in Wind Tempo Eternal Survival Spirit

The fusion of an artistic reverent people, together with a fortuitous ecology, created bonsai as an art form. Bonsai as an art form - formalized and stylized by tradition, revitalized by innovation and the creative spirit - an art form with the final value a result of total aesthetic impact, and as symbol - keyhole to nature.

Goyo-Matsu, with its centuries old reputation of superiority for bonsai, available as a native tree in Japan, is aesthetically suited and horticulturally amenable to bonsai training. Goyo-Matsu is also a classic example of confusion in bonsai classification.

In the United States, this pine is traditionally referred to as *Pinus parviflora*, while in Japan, after intensive study by expert contemporary botanists, is classified as two distinct species, and named *Pinus Pentaphylla* and *Pinus Himekomatsu*. To further compound the confusion, the two pines overlap geographically (see map) in central Honshu, and most certainly hybridize. Obviously, intelligible discussion of this pine will be impossible until we reach common agreement in classification and nomenclature.

Pinus pentaphylla is the northern-most pine of this "*Pinus parviflora-strobi* group" which extends from northern Japan to Viet Nam. A five needle pine of Formosa called *Pinus Morrisonicola* is closely related to *Pinus Himekomatsu* of Japan. *Pinus Fenzeliana* of Hainan Island and *Pinus Kwangtungensis* of southern Hunan and Kwangsi are also considered to be closely related to the Japanese pines.

Another difficulty in assigning an exact geographic locale for a pine species is their widespread capacity to hybridize. Some pines maintain their specific status quite persistently, while others intercross widely and unexpectedly. The nomenclature problems resulting from varietal seedlings, mutations, bud sports, and witches'-brooms must also be considered since the multitude in these categories grows annually, and are increasingly important.

Perhaps, consideration of some additional factors regarding botanic classification problems might help in understanding the present confusion with *Pinus Parviflora*. Pines have been examined, classified, reexamined, and reclassified since they were used by the Aztecs and Romans in religious ceremonies.

Theophrastus (370-285 B.C.) established the identity of the Genus *Pinus* two thousand years ago in his "Enquiry Into Plants". Although he could differentiate only two species of the genus, contemporary botanists have been able to classify over one hundred species. The eminent botanist, Carolus Linnaeus in 1753, systematized botanic classification with a binomial nomenclature which theoretically made plant discussions between all botanists possible because the genus and species identified exactly the plant to be discussed. Some few hundred recognized botanic experts, together with a probable few thousand unsung contributors, augmented the accumulating scientific competency.

A mass of botanic evidence, books of expert opinion, and scientific courtesies appeared. In short, a tradition developed. Few people tamper with scientific tradition; it's considered unsportsmanlike, and has on occasion, proven hazardous.

Hundreds of years ago, or as we frequently say, historically, it was difficult or impossible to obtain an accurate plant sampling because of inaccessibility, language problems, transportation schedules, or plain lack of knowledge. Botanists trudged the land of the far-away places, searching between the rocks and the hard spots for new botanic specimens. The discover, by gentlemen's agreement, got to name the new plant. Inaccurate classification and differences of opinion were commonplace. Errors tend to remain uncorrected, and personal rivalries inhibited the exchange of information.

Scientific skill improved, and objective procedures were developed for plant identification and classification. Botanic evidence came to be used in international conference to establish rules for nomenclature. (International Code, 1866.)

George Russell Shaw, botanic monographer, published his classic reference, "The Genus *Pinus*" in 1914 (Arnold Arboretum Pub. No. 5), and his organization of the pine species into related groups synthesized generations of previous botanic research. He divided the genus into two subgenus: *Haploxyton* (one fibrovascular bundle in each needle) and *Diploxyton* (two fibrovascular bundles in each needle). The *Haploxyton* group are mostly five needle bundle, soft pines, and the *Diploxyton* group are mostly two or three needle bundle, hard pines. His classification of *Parviflora* is - subgenus - *Haploxyton*; subsection - *cembra*; group - *strobi*; species - *parviflora*.

THE ANALYTICAL KEY

A methodology for plant identification and classification in the form of an analytical key, was developed. The analytical key for plant classification is the most important tool the botanist has in the physical identification and classification of new flora. The key provides the technical plant descriptions and systemized procedure which guide the botanist through the maze that is plant identification. Analytical keys are included in many botanic references; one excellent source is what the botanist refers to as the "Rehder Manual".

Alfred Rehder, curator of the Arnold Arboretum Herbarium, Harvard University, author "Manual of Cultivated Trees", 1927, commented essentially as follows: *Pinus parviflora*, a small tree, usually grafted, with wide-spreading branches. The short, usually twisted needles form brush-like tufts at the end of the branchlets - profusely produced small ovoid cones. The wild form has been classified as variety *pentaphylla* by Henry. Variety *glauca* has bluish green needles.

Theoretically, misunderstanding, inaccuracy and human error are eliminated by the orderly, precise scientific identification procedure which the analytical key provides.

LUMPS AND SPLITTERS

In practice problems persist, for we are dealing with people, with problems of judgement and decision, and with matters of opinion. In the final analysis, the opinion determines the classification. The classic story is told of four people submitting four cuttings from the same tree to an expert botanist for classification, with the result being reports on four different varieties.

The problem of plant classification has three parts: an accurate plant sampling, a complete sample analysis, and a human expert. The experts on flora, even the botanical monographers, traditionally are designated as lumpers or splitters. The lumper sees the similarities, while the splitter always sees

the differences. Plants frequently straddle their classification pigeonhole, and in botanic classification, there are no absolutes.

CLASSIFICATION PATTERN

Pinus parviflora was originally classified by Phillip Siebold and Joseph Zuccarini in 1842. In 1890, Heinrich Mayr classified a pine specimen from northern Japan as *Pinus pentaphylla*. The botanic lumpers said both specimens were similar - one species. The splitters said the specimens were dissimilar - two species were evident. So began an honest difference of scientific opinion.

Henry, 1909, classified the northern pine as *Pinus parviflora* variety *pentaphylla*, and Beissner, also in 1909, identified two varieties of *Pinus parviflora* as *Pinus parviflora* variety *glauca* (a form with glaucous bluish needles) and *Pinus parviflora* variety *nana* (a less vigorous form with short needles).

In 1920, Miyabe and Kudo reclassified *Pinus parviflora* as *Pinus Himekomatsu*, and thereby it was suggested that the epithet, *parviflora*, represented a group of pines in east Asia.

Yasaka Hayashi, botanic monographer, has conducted extensive investigations, which resulted in the publication of two references, both entitled "The Natural Distribution of Important Trees Indigenous to Japan", and numbered No. 2, 1952 and No. 3, 1954 (See excerpt map).

N. T. Mirov, botanic monographer, biologist, geographer and author, "The Genus *Pinus*", 1967 comments incisively on the problems of classification and nomenclature which now exist in eastern Asia. He notes that the reclassification of *Pinus parviflora* as *Pinus Himekomatsu* is a valid opinion, and the result of intensive study by contemporary expert botanists. He further notes that the entire "*Pinus parviflora* complex" should be carefully reexamined.

The reality in botanic classification is that new flora, new evidence, new mutations, new hybrids, and periodic review, make revision and change the rule, rather than the exception. The objective of the contemporary botanist is the development of improved techniques for plant identification and classification, i.e., a "more complete" specimen analysis. A review of the "*Pinus parviflora* problem" would necessitate familiarity with all aspects of the species, and would include physiological, genetic, morphological, geographic, paleobotanical, ecological, and chemical evidence. As scientific evidence becomes increasingly definitive, the personal subjective opinion becomes less deterministic.

Perhaps this "*Pinus parviflora* problem" will be on the agenda for review at the next meeting of the committee of International Rules of Botanical Nomenclature. Resolution of this nomenclature problem is increasingly important economically to both the American and Japanese nurseryman. Plant sales of dwarf and slow conifers are increasing in the American market. The Japanese nurseryman has the merchandise. He could supply the American nurseryman's needs, if the problem of nomenclature could be clarified.

THE AMERICAN NURSERYMAN

Americans frequently equate large size with greater value and, this same attitude, when applied to plant purchases, controls the nursery business. The American nurseryman propagates to meet the demands of the marketplace, and fast, if he wants to stay competitive. Customer demand, rapid plant growth and ease of propagation determine commercial nursery plant material. The nurseryman is always interested in the new variety which grows faster, has more customer appeal, or is easier to propagate. These demands affect the plant merchandise offered for sale, including the *parviflora* pine.

Pinus parviflora has been a commercial nursery item for perhaps seventy-five years, propagated by grafting, and sold for ornamental garden planting. It has never been "a good seller", but was available if you shopped around. About a dozen clonal varieties have been used commercially over the years. The change occurs when a plant with more eye appeal or faster growth becomes

available, usually from Japan via the Holland propagators to the United States wholesale propagators, and finally to the retail nursery.

Americans like blue trees, and blue trees are propagated to meet the market demand. They also like fast growing trees, so fast growing trees are propagated. The commercial *Pinus parviflora* propagated at the present time is the most vigorous grower available, with the longest blue needles. The needle is also twisted, and because the twist shows the bloom on the lateral needle face more dramatically, with more "eye appeal", the twisted needle increases sales; it looks "bright blue".

As luck would have it, this commercial clonal variety is not good for bonsai; the needles are twisted, too long, and the plant has a tremendous internodal distance. Importation of the bonsai clones from Japan is the best source, but one comment seems appropriate. The scions are "quarantine treated" at port or entry in a gas chamber. After treatment the scions look green and healthy outside, but inside, something happened (personal opinion). They must be mortally wounded, because the graft fatality is discouragingly high.

GRAFTING

Standard commercial grafting practice is to graft five needle pine on five needle understock. The *Pinus parviflora* available commercially is grafted by the large wholesale nurseries, and the understock has proven to be admirably suited to the grafting bench, is readily available, inexpensive, makes good roots, and transplants easily. It is best suited to the needs of the American nursery propagator. Grafting five needle *Pinus parviflora* on two needle *Pinus thunbergii* understock is unheard of commercially in the United States, while in Japan it is standard practice.

THE JAPANESE NURSERYMAN

The Japanese nurseryman propagates for a different market. The *thunbergii* understock tends to inhibit the winter yellowing of the scion needles, is readily available, inexpensive, and makes good roots - roots which are best suited to the rapid drying of the bonsai pot, and bonsai is a major plant market in Japan. The commercial bonsai nursery grafts the five needle pine to meet customer demand, and the clonal varieties are selected specifically for sales appeal. At present, the dwarf varieties are increasing in customer demand (See *yatsubusa* list).

Most Americans are unaware of the degree of refinement in Japan's bonsai plant material over a period of ten decades, the professional Goyo-Matsu bonsai growers have selected from bud sports, witches'-brooms, mutations, hybrids and varietal seedlings, those with the special characteristics desirable for bonsai. These distinguishing qualities would include multiple bud breaks; short internodal distance; thick trunk (rapid accumulation of cellulose); root formation; needlecolor; needle shape, size and persistence; bark pattern, and ease of propagation. These select pines are grown as nursery stock plants and are propagated vegetatively from cuttings, layering and primarily by grafting.

VARIETY CLONAL FORMS

These pines also establish the clonal forms which are identified by colloquial name (see clonal varieties lists). The Japanese varietal forms of the Goyo-Matsu represent about a century of horticultural dedication by the bonsai growers, and in the genus *Pinus* they are unique in the world of horticulture. These varietal forms, which are listed elsewhere in this resume, are the result of local popular demand - a varietal form which was grown to meet the demand in the local marketplace. The first group are the older commercial bonsai clones, long used, and still in demand. The second group - about two dozen dwarf forms which give the general impression of witches'-broom - is referred to collectively as *Yatsubusa* (eight buds), and is rather new commercially.

The two clone lists are used by permission of Mr. Yuji Yoshimura, who catalogued these varietal forms of the Goyo-Matsu in his article, "Study of the Five Needle Pine in Japan", 1969. The descriptive comments are based on information obtained from these two lists, and is incomplete because the information is presently not available; some nurseries have closed or relocated, people have moved or died, or are impossible to locate, etc.

These bonsai clone lists represent an extraordinary cooperative effort by Mr. Yuji Yoshimura, and the professional bonsai men, Mr. Motosuke Hamano, Mr. Hiromi Hamano, and Mr. Toshihiko Aoki of Omiya Bonsai Town, Japan.

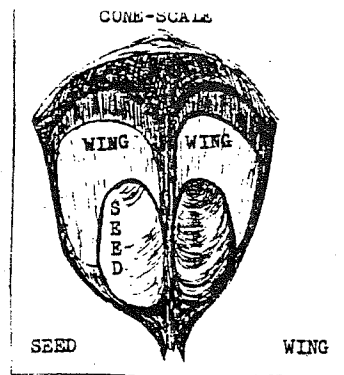
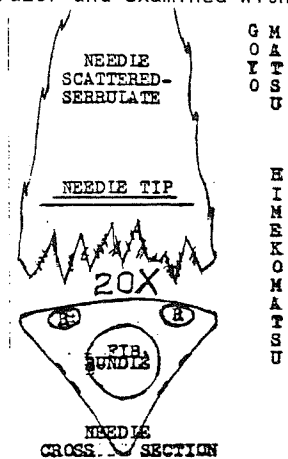
NEEDLES

Haploxyton - One fibrovascular bundle, (the vein in the center of the needle with sieve tubes and tracheids), Two marginal resin ducts (wound healing), Five needles in one fascicle, sheath deciduous.

Needle serrulate (minute saw teeth), Dorsal face of needle bright green; ateral slightly concave with stoma lines. The stoma lines are something coated with a powdery waxy substance, (Bloom, as on a beach, graph, or blue spruce), blue gray or silver grey in color. The color effect of this blue grey bloom, coating the lateral faces of the needle gives the entire tree a blue or silver blue color. We call this blue color variety - "Glauca" - and the Japanese call it "Gin-Sho", (silver form).

The needle bloom is easily damaged, the most common offender is a dormant oil spray. The bloom also rubs off easily; rub a needle between your fingers.

Needle character, (thick, thin, twisted, straight, bent, dark or light green, silver blue, yellow, gold, persistence, etc.) is a corollary of varietal form, varies from one quarter inch to three inches and can sometimes be modified by cultural conditions. Cross-sections cut from the middle of the needle with a sharp razor and examined with a 14x to 20x triplet lens will show structure.



CONE-SCALES

The two most important physical characters in the grouping of the various pine species are needle structure and the shape of the cone scales.

The cones are ovoid to oblong ovoid (egg shape), with practically no stalk, (nearly sessile). The scales are abruptly convex near the apex, bulging and irregularly warped. The overall cone effect is egg shaped, bright green, no stalk, resinous, bulging cone scales with a purpleish scale tip. The dry cone scales are woody and hard. The seed is from three-eighths to one-half inch long.

PINUS PENTAPHYLLA AND PINUS HIMEKOMATSU DWARF CLONAL VARIETIES "YATSUBUSA" USED IN JAPAN FOR GRAFTING BONSAI

1. Fukumusume -- Needles thin, yellow green, large number of buds, slow growing, suitable for miniature bonsai.
2. Fukunokami
3. Gyokkan
4. Gyokkasen -- Needles thick, produces new shoots from trunk easily, buds not numerous, new shoot several times a year.
5. Gyokusui -- Needles medium thick, dark green, slight twist, fast growing, popular variety.
6. Hakko -- (Kaneko) Needles short thick, slight twist when young, dark green, numerous buds, new shoots from trunk easily.
7. Hoki
8. Jyujisei -- Needles thin, new shoots grow slowly.
9. Jyurokurakan
10. Kaneko -- (Hakko) see #6 - same plant has two names.
11. Kinkaku -- Very similar to #12, needles are slightly thicker.
12. Kokonoe -- Needles thin, dark green, slight twist, fast growing, popular variety, suitable for miniature bonsai.
13. Koraku -- Very similar to #12.
14. Momoyama -- Needles thick, dark green, fast grower.
15. Okan
16. Sadaijin -- Needles are thin, very slight twist, white stoma line. See #20.
17. Senko
18. Setsugekka -- Needles thick, dark green, new needles pale green, one of the best varieties for bonsai.
19. Shikishima -- Needles are thick tip is very sharp and pointed.
20. Udaijin -- Needles thin, very slight twist, white stoma line, see #16.
21. Yakumo -- Needles thin, yellow green, buds not numerous, does not produce new shoots from trunk.
22. Zuisho -- Needles short and thick. New grafts grow very slowly. Winter care very difficult.

PINUS PENTAPHYLLA (PP) AND PINUS HIMEKOMATSU (PH)
CLONAL VARIETIES
USED IN JAPAN FOR GRAFTING BONSAI

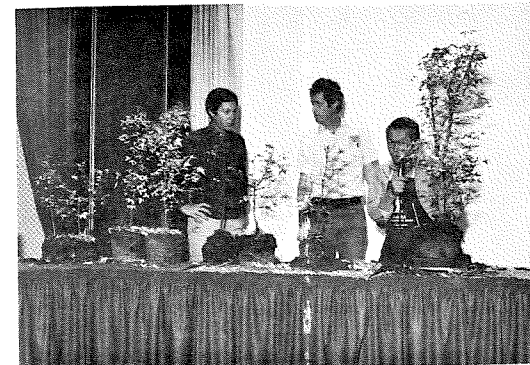
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|------------------|----|---|---------------------------------------|
| 1. Aizugoyo | -- | Thick needles, pale green, white stoma line, thick brittle branches, slow growing. | Fukushima
Prefecture |
| 2. Asamagoyo | PP | Thick needles, dark green, longer needles than others in list, rough bark. | Nagano
Prefecture |
| 3. Azumagoyo | PP | | Fukushima &
Yamagata
Prefecture |
| 4. Chichibugoyo | PP | | Tochigi
Prefecture |
| 5. Fukushimagoyo | PP | | Fukushima
Prefecture |
| 6. Hyugagoyo | PP | | Miyagi
Prefecture |
| 7. Joyetsugoyo | PP | | Fukushima &
Tochigi
Prefecture |
| 8. Miyajimagoyo | PH | Thick needles, short, white stoma line, slightly twisted, slow growing, many branches, used for 100 years. | Hiroshima
Prefecture |
| 9. Miyamagoyo | -- | | Nagano
Fukushima
Tochigi |
| 10. Mizukamigoyo | PP | Thin needles, yellow green, long, see number 2. | Nagano
Prefecture |
| 11. Negishigoyo | PH | Similar to Miyajimagoyo number 8. | Tokyo |
| 12. Shikokugoyo | PH | Needles short, two types, Gin-sho and Kin-sho, silver blue and yellow, green, rough bark, excellent bonsai. | Shikoku |
| 13. Shiobaragoyo | PP | Needles short, thin, light green, roots easily from trunk, good for sinuous style bonsai. | Tochigi
Prefecture |
| 14. Taihogoyo | PH | | Wakayama
Prefecture |
| 15. Taiwangoyo | -- | | Formosa |
| 16. Takanegoyo | -- | | Nagano
Tochigi
Fukushima |
| 17. Yamatogoyo | PH | Needles are long and thin. | Nara
Prefecture |
| 18. Zaogoyo | PP | | Miyagi &
Yamagata
Prefecture |

The Making of a Forest

A forest is a lovely thing to watch grow, and when it "grows" into a bonsai forest under a master's hand, it is not only lovely but fascinating. That is exactly what happened at the 1981 PBA Symposium when California master Ben Oki created a forest planting of trident maples.

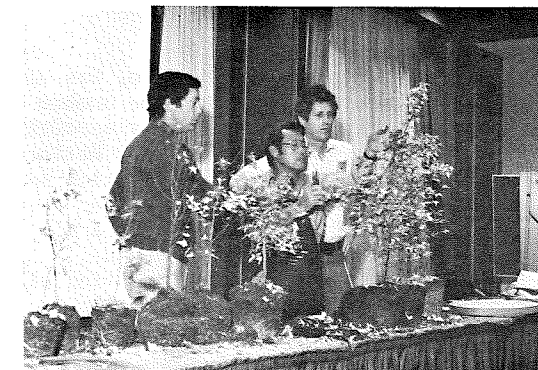
Working with trident maples in 5 gallon containers, Ben's first task was to study the trees for shape and size. The trees already had a fibrous root system, as can be seen in the photographs, so that reduction of the rootballs was no problem. After determining number 1 and number 2 trees (the dominant "monarchs" of the forest), Ben determines the new height for these trees and shapes a new apex accordingly.

*Photos by
Howard Clark*



The number 1 tree is then studied for eventual height and selection of a new leader is made. From there branch selection is done.

Aided by symposium chairmen Felix Laughlin and Bob Sitnick, Ben studies the trees and selects the most dominant ones.



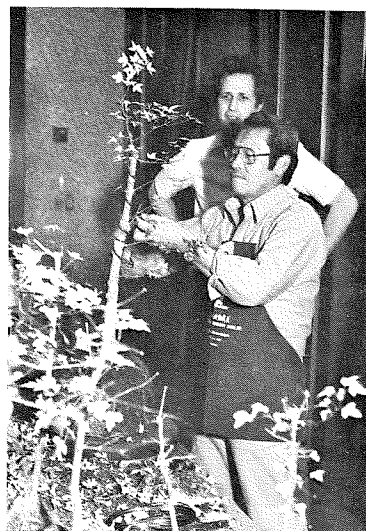


The process now begins of pruning and wiring the smaller trees to be placed in the forest. Ben must keep in mind where each tree is in the numbering (size) sequence, so branches are pruned and shaped at the correct height for the finished forest.

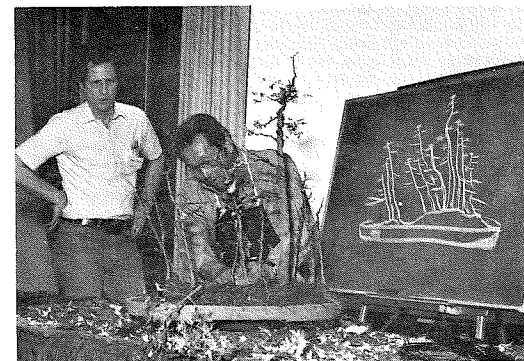


The forest now begins to take shape. Number 1 tree has been placed in the container and smaller ones are being arranged around it. The trees in place have been wired in and Felix is adding soil.

The number 1 tree, having acquired a new leader, is now pruned and wired to fit in with the rest of the forest.



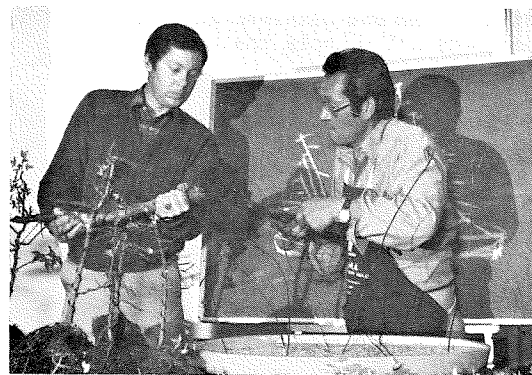
*Photos by
Howard Clark*



Reaching completion, the forest now begins to look like the drawing on the blackboard. Ben is placing the eleventh and last tree as Bob looks on.

Assisted by Felix Laughlin, Ben now trims the roots of the number one tree, being especially careful to remove all large roots. Notice the compact rootball with which he has to work. We see also, for the first time, that Ben has done a blackboard drawing of how he envisions the finished creation will look.

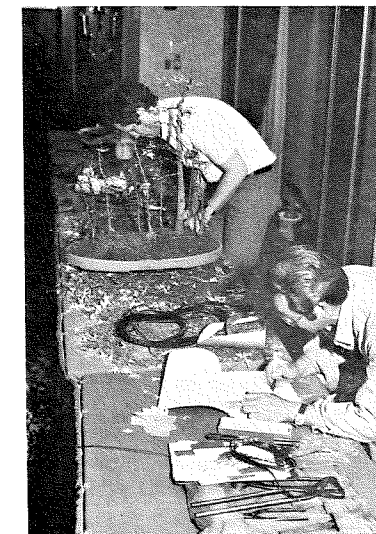
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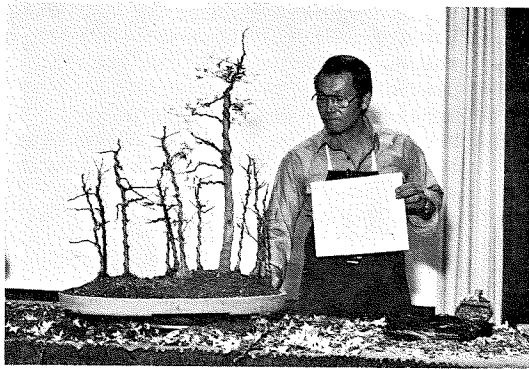


All finished. Bob cleans up some of the inevitable debris while Ben makes another drawing of this forest, which will go to the winner of the raffle to keep as guide for further development.

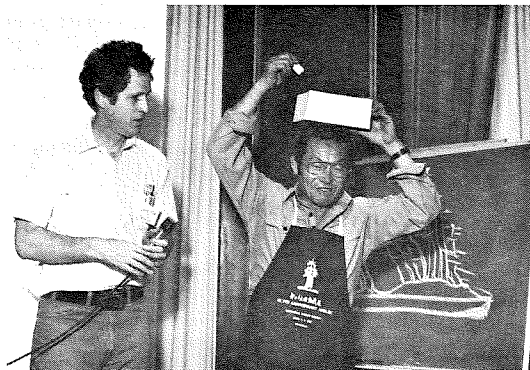
*Photos by
Howard Clark*

11





Ben is justifiably proud of this new creation. Seen here where it shows off against a light background, we can see how this forest will grow into a lovely thing.



And the winner is

*Photos by
Howard Clark*

... Sylvia Darnet of New York.

Sylvia and her husband Manny have been attending PBA symposia for several years now, and she sure looks like she was glad she came this time too.



Exclusive to New Orleans Bonsai

Grafting the Pine

By Shinji Ogasawara



**Bonsai Master
Shinji Ogasawara**

This article by Mr. Ogasawara was written for New Orleans Bonsai, translated by GNOBS member Mitsuko Tanner and edited by GNOBS member Robin Tanner.

The Bantings met Japanese Bonsai Master, Shinji Ogasawara, in the Spring of 1981 in Omiya at his Seifu-en Bonsai Nursery. Mr. Ogasawara's pines are very impressive, many of which he has applied the pine grafting technique described in the following article. Mr. Ogasawara will be the "star" of California Bonsai Society's Silver Anniversary, April 1-4, 1982, in Los Angeles. Mr. Ogasawara was an apprentice at Mansai-en Bonsai Nursery under Tomekichi Kato, father of the renown Saburo Kato, and has grown Bonsai for fifty years. He is currently President of the Japan Bonsai Nurserymen's Association, and Director of both the Japan Bonsai Society and the Japan Suiseki Society.

The following grafting technique can work for most species of pine including black, red, and five-needle pine. Early spring, when the temperature is about 20 degrees Centigrade, is the best time for doing the grafting.

SUPPLIES:

- 1 - Sharp knife
- 2 - Angle chisel
- 3 - Pruning shears
- 4 - Plastic bag (.03mm thick; 170mm - 200mm long; and 90mm - 100mm wide)
- 5 - Plastic tape
- 6 - Sphagnum moss
- 7 - Copper wire (No.24 - No.25, .5mm - .4mm thick)
- 8 - Grafting tape

PROCEDURE:

- 1 - For the scion, it is better to use new growth from the main trunk where there are about three new candles coming out, see Fig. 1. Cut a strong branch, leaving 16-20 needles, see Fig. 2.
- 2 - Whittle the cut end of the scion into a wedge shape, see Fig. 3.
- 3 - Cut a notch with the angle chisel as shown, then raise up on the chisel to enlarge the opening and insert the scion, see Fig. 4.
- 4 - Remove the chisel after inserting the scion and bind the graft by making six or seven wraps with grafting tape as shown, see Fig. 5. Wrap the tape tight enough so the scion

Fig.1

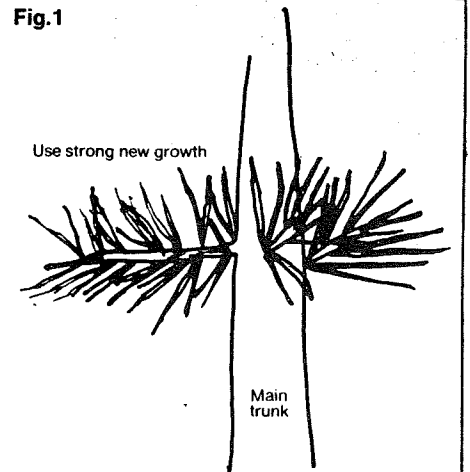


Fig.2

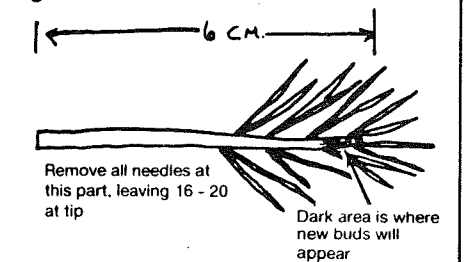
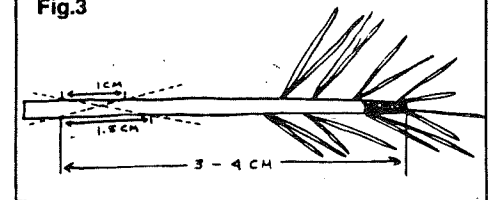


Fig.3

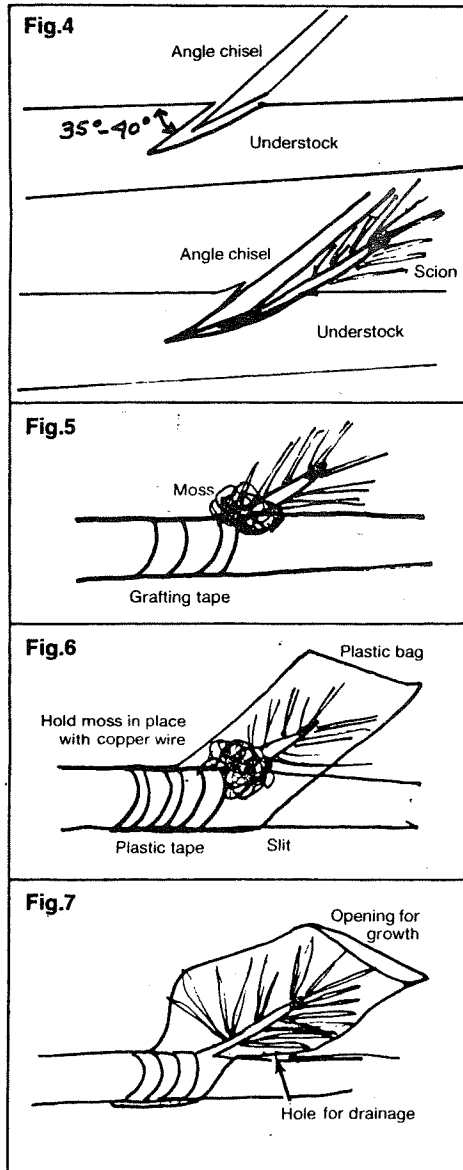


doesn't move. The tape should be left on for at least three months. Put wet sphagnum around the bottom of the needles where the scion extends from the graft, see Fig. 5.

5 - Cut a 3-4 centimeter slit in the side of the plastic bag by the opening. Cover the graft with the plastic bag. CAUTION: DO NOT DAMAGE SCION NEEDLES. Use several wraps of the plastic tape around the main trunk to hold the bag in place. Use copper wire wrapped around the outside of the bag to hold the moss in place, see Fig. 6.

6 - After completing this work, keep the tree in the shade where it cannot receive direct sunlight. After 2-3 weeks put it in direct sun every other week for 6-7 weeks. Then you can put it on the bench for 8-10 weeks. If the growing sprout begins to touch the side of the plastic bag, cut an opening in the bag through which it can extend. Make a hole at low point of the bag to let water drain out, see Fig. 7.

7 - When the sprout's growth fills up the plastic bag (usually about the beginning of summer), remove the bag. If you feel the scion's growth is too long, cut off the tip.



The above article is reprinted with permission of the Greater New Orleans Bonsai Society. For those of us lucky enough to have gone with John Naka to Japan and China last Spring, we visited Mr. Ogasawara's nursery with the Bantings. The above article describes how a scion can be grafted to a pine branch to induce branch ramification. Ramification appears to spell the difference between our bonsai and Japanese bonsai, their's are more compacted - in needles and branching.

Mr. Ogasawara indicated that an essential element in his successful grafting technique is the plastic tape that he uses. This tape has no sticky side and is used for grafting. Indeed, it must work, since Mr. Ogasawara had at his nursery some pines with at least ten plastic bags on each tree covering grafts. His grafts are so successful that they are indistinguishable.

Note that steps 2 and 3 of the procedure must be done swiftly. Everything should be prepared and rehearsed to insure speed. The scion should be cut first and then placed in one's mouth being careful to keep it dry and not moisten it with saliva. The union of scion and branch should be made swiftly once the branch has been notched.

On the previous 1977 John Naka tour to Japan, we visited the Myoji temple, Kino-kimono Cho, Minokano City, Gifu, Japan. The resident monk, Gensui Sasaki, has been successfully grafting black pine using a technique that is yet to be thoroughly explained. He claims that he can tell if a graft is taking in 30 days after making the graft. One thing he did do was use pieces of mylar, one-way, light transparent plastic sheet which he attached so that it shielded the scion/union et al, from the light and sun. The plastic is placed with the one way visibility out from, not into the scion. This permits the plant to be placed into full sunlight immediately after the grafting operation rather than putting it in the shade for 2 to 3 weeks.

Julie Haga has diagnosed the above process as follows: The mylar plastic reflects light, thereby discouraging photosynthesis in the leaves or needles which then reduces their requirement for water. By minimizing the requirement for water, the ability of the cells to divide is enhanced thereby hastening completion of the union between the scion and branch. This is further abetted by the mylar allowing heat not light to reach the graft.

Julie also reports that another approach from Japan is not to use sphagnum moss in the graft because it can decompose. Instead a mixture of vermiculite (not perlite) with red clay and water to form a paste is applied to the union. The red clay can be dug locally, but must be sifted to provide the fine silt to be used in the mix. The clay can then be treated to eliminate fungus and insect eggs either by spreading it out and exposing it for a day or two to the rays of the sun or by wetting it down and placing it in a covered container in an oven set at

250°-350° Fahrenheit for two to three hours. The final mix of clay and vermiculite has a tendency to absorb heat - thereby increasing the rate of cell division.

Mr. Osagawara has described in the above article a technique for grafting onto a branch. Grafting a scion to the trunk of a tree is described in "Japanese Black Pine Branch Grafting Techniques" by Yoshihara Takeshita and Kyosuke Gun, which appeared in International Bonsai Winter/1979. Now that I have instructions for techniques which will enable me to graft branches to both trunk and branches of a black pine, I'm going to try them out as soon as the weather reaches the 20° Centigrade (68° Fahrenheit). Then maybe I can get branches on bonsai where they ought to be, but for some reason never are because they have died or never grow in those locations. Hope that my results are more positive than the experience of one PBA member whose past grafting attempts have yielded nought but trees with holes where grafts did not take.

Seneca Falls Nursery.

Seneca Falls Nursery at the intersection of Routes 7 and 606 in Virginia is holding a Foliage Fantasy starting 6 February and running for two weeks. A wide variety of plants will be on display including bonsai, orchids, bromeliads, cacti, and many flowering and foliage material. First day's proceeds will go to Children's Hospital. Seneca Falls Nursery has been in business for about eight years, but in their new greenhouses since April 18, 1981.

ERRATA:

Corrections to the article Nishiki-Matsu (Corticata Pine) in January 1982 issue (page 3) are as follows:

Third paragraph: "nishiki-aka-matsu - Japanese red pine" vice "nishiki-goyu-matsu". ("Goyu" means five needled and "aka" means red.)

Fourth paragraph: "barberry, megi-nishiki-sho," vice "Berberry meg-nishiki-sho".

[Thanks goes to Julie Haga for pointing out the above errors.]

TAMAHI

Last month, Snips and Slips reported on fertilizer dumplings. The editor has been using Tamahi and it is more effective than homemade fertilizer dumplings. Although Tamahi is expensive, it appears to be worth the investment, especially for my more advanced bonsai creations. On the younger trees, I use the homemade fertilizer dumplings as a cost-savings measure.

Those of us who attended last Fall's PBA Symposium banquet, received packages marked in Japanese as "Humble Gift" and wrapped Japanese style. These were made by Shoen Bonsai and Japanese Garden, 601 E. Gude Drive, Rockville, Maryland 20850, (301) 762-0878. Julie Haga of Shoen Bonsai obtained permission for the following reprint of the instruction sheet for those who had not attended the banquet. (Tamahi is available at Shoen Bonsai). Julie Haga passed along these additional pointers:

There is no need to apply Tamahi during the Winter. Tamahi won't release nutrients if the temperature is below 50 Fahrenheit. It is suggested that Tamahi applications begin around the middle of February even for deciduous trees. This will especially strengthen trees due for Spring repotting and pruning.

For trees due for Spring repotting, start applying Tamahi a month or two before the repotting and increase the amount of Tamahi by 20 to 30 percent over the normal rate.

To determine the amount of Tamahi to apply to a bonsai, first estimate the volume of the root ball. Then subtract it from the total volume of the pot to obtain the volume of the soil. The amount of Tamahi to apply is 5 percent by volume of the volume of the soil.

The reason for placing Tamahi at the edge of the bonsai pot instead of close-in to the trunk, is so that the hair roots get fed.

Don't bury the Tamahi, otherwise fungus grows and the Tamahi does not surrender any of it's nutrients.

If there are maggots or bugs on the Tamahi, it is too old and should be changed immediately. The reason for stipulating a useful period of 40 to 50 days before replacing the Tamahi is because it is difficult for water to penetrate into the core of the Tamahi and release the remaining nutrients at a rate beneficial to the bonsai. The Tamahi removed from the bonsai can be placed around garden plants to use up the last amount of nutrients.

JIU-SAN BONSAI

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TAMAHI®

SPECIAL FEATURES

Fertilizer has been playing an important role in the development and maintenance of Bonsai trees. The specific fertilizer for the Bonsai has traditionally been TAMAHI (fertilizer ball), which is made by fermenting the rape seed residue (aburakasu) after the oil has been extracted from the seeds.

TAMAHI is the more advantageous form for Bonsai over the other forms of rape seed residue fertilizer, because if the powder or water-based paste form is used, they will become spongy and dissolve immediately after watering. These small pieces of residue will accumulate at the inside bottom of the pots and could easily become the cause of root-rotting. On the other hand, TAMAHI, being in the form of a hard ball, resists dissolving when watered.

TAMAHI will not cause any damage to your Bonsai trees because hardening catalysts, gluing agents, fermenting agents, or any other chemical agents are not used in the TAMAHI manufacturing process.

TYPES OF TAMAHI

There are two types of TAMAHI available: The green labeled TAMAHI is made of 100% pure rape seed residue for evergreens (e.g. Japanese Black Pine, Five-Needle Pine, Juniper, Cork-barked Black Pine, Spruce, Cypress, etc.) and deciduous trees (e.g. Elm, Zelkova, Maple, Oak, Beech, Hornbeam, etc.). The pink labeled TAMAHI is made of 20% bone meal and 80% pure rape seed residue for the flowering and fruit-bearing trees (e.g. Pomegranate, Satsuki, Azalea, Cherry, Japanese Ume, Apricot, Crabapple, Quince, Persimmon, Wisteria, Orchid, etc.)

DIRECTIONS FOR USE

1. Effective Period

Since TAMAHI is a unique fertilizer made by fermenting rape seed residue (aburakasu), when the Bonsai is watered as usual, the tree's required nutrients are released into the soil at a constant rate. The effective period of a TAMAHI ball for the potted plant is about 50 days. As for the Bonsai trees, we recommend replacement with a new TAMAHI every 40-50 days.

If the surface of TAMAHI is damaged or dissolves prematurely, remove these broken pieces and replace with a new TAMAHI as soon as possible. (Those broken pieces of TAMAHI can be applied to your garden plants.) The growth of molds on TAMAHI is common and does not alter the performance of TAMAHI as a fertilizer. In fact, the TAMAHI's effectiveness is enhanced by the molds.

2. Location of TAMAHI in the Pot

TAMAHI is most effective when placed on the soil near the rim of the pot. Do not bury or push the balls into the soil. Whenever a TAMAHI ball is replaced with a new one, move the new location slightly from the old one. In doing so, you can fertilize the tree eventually all the way around the pot.

3. Amount of TAMAHI per Pot

The following is a general guide which will assist you in the application of TAMAHI.

Evergreen and Deciduous Trees

Spring and Summer

Evergreen: The amount of TAMAHI to be placed should be approximately 5% by volume of the pot soil.

For example:

Small pot (6" x 4" x 1½") 1 - 2 Tamahi balls
Medium pot (11" x 7" x 3") 6 - 8 Tamahi balls
Large pot (15" x 9" x 4") 10 - 15 Tamahi balls

Deciduous: Half the amount given to Evergreens.

Fall

Evergreen: Same as Spring and Summer.

Deciduous: Same amount as Evergreens:

Winter

Evergreen: 1/3 to 1/2 of the amount given during Spring and Summer.

Deciduous: After the leaves fall, fertilizers are not necessary until Spring.

Flowering and Fruit-Bearing Trees

Their needs may vary from species to species, but generally, the amount of TAMAHI applied is about the same as the Deciduous trees. After the flowers have fallen and/or when the fruits have ripened, replace the old TAMAHI with a new one.

Contents: (Evergreen/Deciduous) Nitrogen 5.30%, Phosphorus 2.0%, Potassium 1.30%.
(Flowering/Fruitbearing) Nitrogen 5.04%, Phosphorus 5.80%, Potassium 1.04%.

Caution: When repotting a Bonsai tree, do not use TAMAHI until 20 days later.

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MADE IN JAPAN

CLUB CALENDAR

February 11: 7:30 p.m., Annapolis Library, West Street. Bill Merritt, PBA
Thursday Vice President, will be with us to demonstrate techniques for
bending thick branches and trunks, using jacks, armatures,
levers, etcetera.
ANNAPOLIS (301) 263-3995

February 13: 10:00 a.m. Vincent Covello will present a slide/lecture on the
Saturday subject of suiseki and viewing stones. Mr. Covello is currently
authoring a book on the subject with Yuji Yoshimura. Members
are encouraged to bring stones since Mr. Covello is willing to comment on the
stones.
NORTHERN VIRGINIA BONSAI SOCIETY (202) 383-7832

February 18: 7:30 p.m. "A Tour of China and Japan with John Naka", a slide
Thursday presentation by Bob Sitnick. Bob will particularly emphasize
his experiences in China and expose us to the present status of
bonsai on the Chinese mainland. NOTE: We will be meeting at our new location
at Colonel E. Brooks Lee Jr. High School, Monticello Avenue, Silver Spring.
Raffle: BROOKSIDE (301) 299-6194

February 20: 2:00 p.m. National Arboretum. Back to Basics! This is the first
Saturday in a series of five monthly sessions. Good for newcomers and
those who have had some experience and wish to review. This
course will emphasize the philosophy as well as the techniques of bonsai. Bill
Merritt is the instructor. See page 7 of January 1982 PBA Newsletter for appli-
cation blank. Telephone following number for more details.
WASHINGTON (202) 583-2676

February 21: 2:00 p.m. Workshop and Tree Critique. 3:00 p.m. a slide show -
Sunday A Trip to Japan. Bob Sitnick of the Northern Virginia Bonsai Society
will show slides of his recent trip to Japan. Cylburn Park - bring
raffle materials.
BALTIMORE (301) 922-9310

February 28: 2:00 p.m. 5117 Yorkville Road, Camp Springs, Maryland. Mixing
Sunday soil - mix it, take it home for Spring repotting. If it snows,
date will be switched to March 7th.
KIYOMIZU (301) 423-8230

BEGINNER'S COURSE. . .IT'S NOT TOO LATE!!!

Events have a way of working out for those of us who are procrastinated.
So, for any of you who missed the deadline for learning, the Living Art of
Bonsai Course being sponsored by the Washington Club, it's not too late to sign
up. The new deadline for registration is February 15th (see December 1981 or
January 1982 PBA Newsletter for application). The January meeting was canceled
because of weather. The first class will be February 20th at 2:00 p.m. at the
National Arboretum.

If you plan to attend a meeting other than your parent club's meeting, it is recom-
mended to telephone the number listed above to confirm the arrangements. Because
of any of a number of reasons, the schedule above can be changed. To be further on
the safe side, you can telephone as early as possible to let the club know that you
expect to attend and then request that you be advised of any schedule changes.

Walter SCHMIDT

Bonsaiist Eternal

Sorting through the paper work for last month's PBA Newsletter, I came upon the sheet of yellow notepaper on which Walter Schmidt had penned his article "Winter Blooming Bonsai". The handwriting was as firm and legible as if done by a person many years younger than Walter whose 85th birthday will be in March 1982. What kept Walter eternally young was his keen interest in trying something new. Some people consider 50 or even 35 as too old an age to start on bonsai. Not Walter, he started bonsai around the age of 70 and was a founder of the Potomac Bonsai Association. His interests included exploring all phases of bonsai from growing anything associated with the propagation of bonsai to making pots and even rocks and rock formations. The rewards of his efforts were passed on to others in his articles which appeared not only a number of times in the PBA Newsletter, but also in other publications including Bonsai Clubs International. Walter was known for his "green thumb", anything seemed to grow under his care.

A few weeks ago, Walter was visiting friends in Arizona, came into the house from looking at their garden, complained about not feeling well, and laid down to rest. He quietly passed away in his sleep leaving us memories of a very special person and also a living legacy in the many trees now in the bonsai collections of others, trees that Walter started on the road to being bonsai. And that may be what bonsai is mainly about - living on in the spirit of the bonsai trees that one had created or developed which go on to provide beauty and joy to others and in turn reflect in some way the gentle, considerate, warm and friendly nature that was Walter Schmidt.