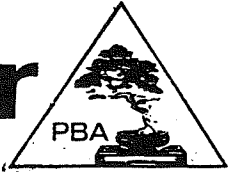


POTOMAC
BONSAI
ASSOCIATION

Newsletter

ISSN 0160-9521



CALENDAR OF EVENTS

APOLOGIA: Please accept my sincere apology for being so tardy in getting out these last issues of the PBA Newsletter. I will make every attempt to get out the next issues so that the future issues will be delivered before the month on the masthead. You may have noticed that the Calendar of Events has listed events so that the information would reach the readers in a timely fashion and in spite of the issue date appearing on the Newsletter.

So I ask you to please do not think that you have missed any issues.

The Editor, 21 April, 1991.

+++++

7 May Tuesday

U.S. NATIONAL ARBORETUM (202) 475-4857. 6:30 to 9:00 p.m. Yoshimura Center. Fee \$12/FONA members \$10.

BONSAI REFINEMENT WORKSHOP by Dan Chiplis, Assistant to the Curator of the National Bonsai Collection. This workshop is designed for individuals who need assistance with a bonsai and have had some experience with growing them. If you need personal attention with repotting or refining your plant, this is the workshop for you. Materials are not provided. *PREREQUISITE - Beginners Bonsai Class. Registration required.

NOTICE: The PBA Newsletter will be printed on recycled paper. The PBA Newsletter will be printed on recycled paper.

PBA NEWSLETTER Published by the Potomac Bonsai Association, Inc. (PBA), a non-profit organization, in the interests of its affiliate memberclubs and societies. Issued monthly with a circulation of over 500.

SUBSCRIPTIONS PBA Member Clubs/Societies: Annual subscription is included in the membership dues paid to the PBA Club or Society of your choice. Telephone numbers of points of contact for information about the member clubs/societies and annual dues are listed under the "Calendar of Events" section of this Newsletter.

Corresponding Members: Annual subscription for 12 issues of the PBA Newsletter is \$12.00 which should be made payable to "Potomac Bonsai Association" and sent to Cy Mill, 9229 Arlington Blvd. Apt. 160, Fairfax, VA 22031.

ADVERTISING RATES Monthly rates: 1/4 page - \$6.00; 1/2 page - \$12.00; full-page - \$19.00 20% rate reduction for advertisements that run 3 or more months.

ADVERTISEMENTS and/or ARTICLES Please send to the editor.

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Chris Yeapanis; SECRETARY: Julie Walker; TREASURER: Jerry Antel, Jr.; PUBLIC

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**TIME
CRITICAL
INFO**

9, 14, 16, 21 May Tuesdays and Thursdays

U.S. NATIONAL ARBORETUM (202) 475-4857. 10:00 a.m. to 12:30 p.m. Yoshimura Center. Fee \$75/FONA members \$70. INTERMEDIATE BONSAI by Robert Drechsler, Curator of the National Bonsai Collection. This four session class is for those who have had an introductory bonsai class and would like specialized instructions on a variety of group plantings. It will cover several styles and the illusions each style attempts to create. Students' personal bonsai will be critiqued by the class. Materials are included. Students should bring their own bonsai tools. REGISTRATION REQUIRED.

11 May Saturday

NORTHERN VIRGINIA (703) 765-7223. 10:00 a.m. at Green Spring Horticulture Center. JAPANESE MAPLES by Dave Dambowic and Fred Eiland.

14 May Tuesday

CHESAPEAKE Mr. Steve Choi will conduct a beginner level workshop - "TRIMMING - material: Cork Bark Elm." For further information contact Mr. Steve Choi at (301) 266-7336 or (202) 261-8131.

16 May Thursday

BROOKSIDE (301) 365-7621. 7:30 p.m. at the North Chevy Chase Recreation Center. AZALEA BONSAI and the HANDLING of WHIPS by Janet Lanman, longtime bonsai expert.

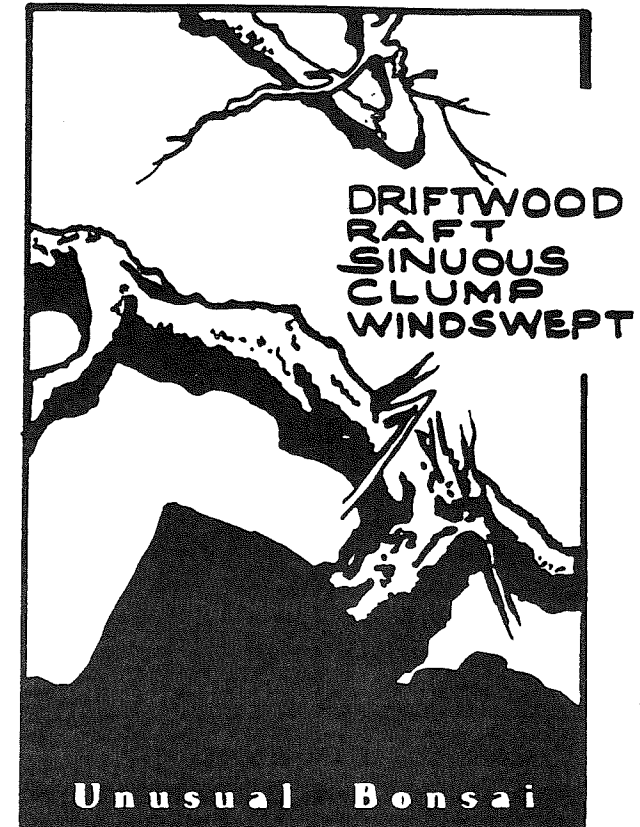
18 May Saturday

KIYOMIZU (301) 423-8230. COLLECTING TRIP. Contact Chuck Bird (301) 292-3167 or Joan Stephens (301) 423-8230 for details.

18 May Saturday

WASHINGTON (202)583-2676. 2:00 p.m. at the U.S. National Arboretum. INDOOR BONSAI. Martha Meehan, Meehan's Miniatures, will be the beginning event in our series of workshops on indoor bonsai. Plant material will be available for sale.

Potomac Bonsai Association



Fall Symposium '91
US National Arboretum
Sept. 28-29

Marion Gyllenswan ● Larry Jackel ● Roy Nagatoshi ● Steve Pilacik

Registration Info: PBA Symposium
T Holden 4337 Stream Bed Way Alexandria VA 22306

19 May Sunday

BALTIMORE (301) 823-0863. Contact telephone number for more information on a FIELD TRIP. There are many wonderful bonsai nurseries in the Baltimore/Washington, D.C., area. Those interested are asked to join us on a field trip to some of them. Be prepared to leave the parking lot of the Loch Raven library early. We hope to make a day of it.

19 May Sunday

MEI-HWA (301) 390-6687. 2:00 to 4:00 p.m. at the White Oak Intermediate School, New Hampshire Ave., Silver Spring. BUNJIN BONSAI by Chris Yeapanis.

21 May Tuesday

CHESAPEAKE Mr. Steve Choi will conduct an intermediate level workshop - PROPAGATION by AIR LAYERING material obtained from the field. For further information contact Mr. Steve Choi at (301) 266-7336 or (202) 261-8131

P B A A N N U A L A U C T I O N

Saturday 25 May, 1991

10:00 a.m. until ? (when nothings left)

where - Behnke Nurseries (Details in this
Dawn Rose Building newsletter.)
11300 Baltimore Ave.
Beltsville, MD
2 miles north of exit 25A Capital Beltway

8 June Saturday

NORTHERN VIRGINIA (703) 765-7223. 10:00 a.m. to 2:00 p.m. at the residence of John Simpson, 3617 Ridgeway Terrace, Lake Barcroft. ALL MEMBERS WORKSHOP - outdoors - Bring Trees to Work On. Also bring what you will need to work on your plant - i.e. tools, soil wire, pot. Bring your lunch - refreshments will be on the house. In case the

weather is threatening on that day, telephone (703) 256-4615.

9 June Sunday

U.S. NATIONAL ARBORETUM (202) 475-4857. Slide lecture at 1:30 p.m. in the Administration Building Auditorium. Fee \$4.00. Dr. Sidney Waxman, The University of Connecticut, will lecture on WITCHES BROOMS - SOURCE of NEW DWARF CONIFERS (Grace Wilson Lecture Series). Witches brooms have been a source for bonsai material, - i.e. the famous Zuishō white pine.

Join the Arboretum for a special lecture by Dr. Waxman who has been growing rare dwarf conifers for many years. In addition to his teaching career, he operates an extensive dwarf conifer nursery. He will discuss collections and origins of newer forms of dwarf conifers. Registration required.

12 June Wednesday

U.S. NATIONAL ARBORETUM - BONSAI REFINEMENT WORKSHOP
See May 7th entry - same details apply.

15 June Saturday

WASHINGTON (202) 583-2676. 2:00 p.m. at the National Arboretum. Arschel Morrell from the Baltimore Bonsai Club will be returning to continue helping us increase our knowledge about growing and styling azaleas. Members who participated in last year's workshop on azaleas are encouraged to bring last year's tree to this meeting.

20 June Thursday

BROOKSIDE (301) 365-7621. 7:30 p.m. at the North Chevy Chase Recreation Fenter. 3 - RING CIRCUS -- 3 old-timers, each assisted by one newcomer will be assigned similar plant material to create into a bonsai. Audience suggestions are encouraged.

22 June Saturday

CHESAPEAKE Steve Choi at (301) 266-7336 or (202) 261-8131. JUNIORS' WORKSHOP SERIES -- Subject: INTRODUCTION to BONSAI. Material will be Serissa foetida. Time & place: 10:00 - 11:30 a.m. at Eastwood's Bonsai.

23 June Sunday
KIYOMIZU (301) 423-8230. 2:00 p.m. at the Clearwater
Nature Center.

BONSAI CLASSES

25 May and 29 June at Wolftrap Nurseries. See the
advertisement in this Newsletter.

FUTURE EVENTS

5 thru 8 June

AMERICAN BONSAI SOCIETY ABS '91, Park City, Utah.
It's the annual ABS bonsai symposium. For more information
contact The Bonsai Club of Utah, P.O. Box 58975, Salt
Lake City, UT 84158.

24 thru 29 July

BONSAI CLUBS INTERNATIONAL IBC '91, Birmingham, England.
It's the annual BCI symposium. Flyers were included in the
January 1991 PBA Newsletter or contact your club officers
for information.

28 and 29 September

PBA ANNUAL SYMPOSIUM See page 3 in this Newsletter.

ANNUAL PBA AUCTION

SATURDAY, 25 MAY, 1991, 10:00 A.M.

It's once a year that one has the opportunity to get
some real bargains and rare finds. Yes, it's the Annual
PBA Auction. Here's your chance to get such items as:

Trained bonsai Starter stock Pots

Wire Tools Books Etcetera

Not only is it an event where you can obtain items but also
one where you can unload no longer needed or wanted articles,
only bonsai or penjing or suiseki related. For example:
trees in any stages of development for bonsai/penjing ranging
from starter material to fully developed ones; pots of any
kind from the display parts, through the starter or common
clay or plastic pots; soil, wire;

from bonsai/penjing starter material to fully developed
ones; pots of all kinds - from bonsai display pots to
clay pots, starter pots, plastic bonsai pots; wire - copper
or aluminum; bonsai tools; bonsai related books and
magazines; and so forth.

In addition, those attending the auction will have a
chance to shop at the Behnke Nurseries where the auction
will take place. The Behnke Nurseries are not only a long
standing organization in the Washington, D.C., area, but
also can boast of offering an outstanding selection of
nursery stock and gardening items. A reduced version of one
of the Behnke Nurseries' advertisement taken from the
"Washington Home Section" of the Thursday Washington Post
appears on the next page.

PBA is once again grateful for the generosity of the
Behnke Nurseries in offering free of charge, the room in
the Dawn Rose Building for the auction.

SPECIAL! A large number of trees from the
collections of Bob Coates and Dennis R. Hamel
will be auctioned off.

AUCTION DETAILS

Note: THIS IS A COMBINED AUCTION AND SALES

Persons can either offer items for auction or for
sales at fixed prices.

Are you getting crowded out by too many plants,
pots that you do not know what to do with? Too many
tools, wire, books, etc.?

HERE'S YOUR OPPORTUNITY TO TURN THEM INTO HARD CASH!

The auction will be held rain or shine - it's indoors.
It will be in the Dawn Rose Building. Guide signs will be
posted. This is the Behnke Nursery located at 11300 Balti-
more Avenue which is also highway U.S. 1. Take the Capital
Beltway to Exit 25A which is between the exit for I-95 and
the Baltimore Washington Parkway - all exits leading north.
The nursery is 2 miles north of Exit 25A.

Behnke Nurseries

Plants Just Right for This Area

Special

Shade • Flowering & Fruit Trees

The finest selection to choose from
Regular prices start at \$24.95 and up

**25%
OFF**
Reg. Prices

**PLANT A TREE
CELEBRATE EARTH DAY**

Azaleas & Rhododendrons

No Doubt the Largest Selection in the Area
Over 150 varieties, many new introductions.
Choose while they are coming into bloom.
Azaleas \$2.95 & up • Rhodos \$6.95 & up

Japanese Maples

Beautiful accents
'Bloodgood' • 'Aconitifolium' • 'Laceleaf'
'Garnett' • 'Crimson Queen' • 'Everred' • 'Viridis'

Roses

Over 325 varieties to choose from.
All are potted, #1 plants, not packaged, \$10.95 & up
Hybrid teas • Floribundas • Grandifloras • Climbers
Meidilands • Miniature & "Baby" Tree Roses

55 varieties of "Old Fashioned Roses"
This should please many collectors.

Evergreens

Broadleaf and Needle Varieties
Looking for something different?

Exciting selection of unusual and dwarf evergreens. For foundation planting and in rock gardens; or as accent plants, there are no finer evergreens to plant than the dwarfs - Don't hide your home behind unsuitable evergreens - very little trimming, years of enjoyment.

PERENNIALS - 1800 varieties - in pots
SPECIALISTS in the newest varieties and old favorites

25% OFF PERENNIALS OF THE WEEK 25% OFF
DICTAMNUS (Gas Plant) • LAMIUM (Dead Nettle)
A GOOD BUY!

HOUSEPLANTS

African Violets • We're known for our violets'
10,000 sq. ft. GREENHOUSE filled with Tropicals, Cacti,
Bonsai, Pottery, Baskets, Fountains, Statuary,
Garden Ornaments and much more.

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BEHNKE
NURSERIES CO.
Since 1930

SCHEDULE Date: 25 May, 1991 Saturday

8:00 a.m. Behnke Nursery opens.

9:00 a.m. All persons wishing to auction or sell items should have brought them to the Behnke Nursery by this time. This will facilitate arranging the items on the consignment table, determining the initial sequence for auctioning the items and mainly to have the items listed.

ALL ITEMS MUST BE LISTED!

Please have a written description accompanying each item for auction which the auctioneer can read when presenting an item for auction.

The following minimum amount of information, in so far as possible, should be given:

1. Where and when obtained.
2. For plant material: the common name, the scientific name if known, and the age if known.
3. Minimum starting bid if desired.

10:00 a.m. AUCTION and SALES BEGIN

End Time: This is contingent on the amount of material to be auctioned coupled with the audience participation. The event will terminate when there is no more interest shown in bidding but no later than 7:00 p.m. when the Behnke Nursery closes

There is a 15% Commission on all sales which goes into the PBA Treasury.

PROPAGATION *by* CUTTINGS

Now's the time of year when pruning bonsai is a must activity. Do you get concerned about all that healthy material going to waste? Cuttings always afford one an opportunity to propagate more trees of precisely the same variety as the plant from which the cutting came. It assures one that when the mother plant dies, there's a replacement for it. This always seems to happen in my case. Also if one does this for a succession of three to five to five years, you'll have the desired mix of trees of varying trunk diameters for that forest planting you've always wanted.

Over 10 years ago the February 1981 issue of the Newsletter contained a number of articles on how to propagate cuttings. Recently "PLANTS & GARDEN NEWS" published by the Brooklyn Botanic Garden published two articles on propagation by cuttings. These two articles, - "A New-Old Method for Rooting Cuttings of Woody Plants" and "Antitranspirants for Rooting Cuttings" are given in what follows along with reprints of what appeared in the February 1981 issue of the Newsletter.

A "NEW OLD" METHOD for ROOTING CUTTINGS of WOODY PLANTS.

Plant propagators discovered many years ago that etiolation of cuttings - that is, keeping the cuttings in darkness for a period of time - can aid their rootings. Recently, Cornell University researchers Nina Bassuk and Brian Maynard have improved on older etiolation techniques, and they report successful rooting of several woody plant species which are otherwise extremely difficult to propagate. As a wrap to exclude light from plant stems, Bassuk and Maynard use "high tech" (but widely available) Velcro fabric, a material with tiny loops on the other side, commonly used as an alternative to buttons and zippers on clothing. Several steps are involved in the Bassuk-Maynard propagation method, as outlined below. Timings are somewhat flexible, and some experimentation may be necessary.

1. The mother plant can be grown indoors (for early Rooting) or outdoors. At bud swell, cover part or all of the plant (70% or more shade is best). Watch out for poor ventilation and overheating! New growth will be pale: this is normal. (Note: "Nolite" photoperiod cloth, recently developed to provide total darkness while allowing water penetration and air flow, appears ideal for this use. Its outer surface reflects heat and insulates covered plants. For information on "Nolite" availability and pricing, contact PAK Unlimited, Inc., 3300 Holcomb Bridge Rd., Suite 215, Norcross, GA 30092.)

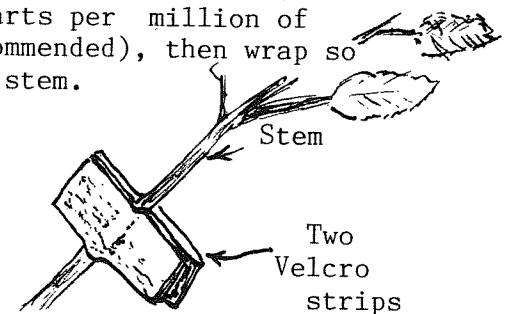
2. When new shoots are long enough to make cuttings (typically 3 to 6 inches), put Velcro bands around them just above where they will be cut off. The bands should be about 1/2 to 3/4 inches wide. Alternatives to Velcro bands are black paper, aluminum foil, and electrical tape, but Velcro works best because it "stays stuck," "gives" a little with stem growth. A single piece of Velcro can be wrapped around a stem or two pieces can be stuck to each other at the ends, with the stem sandwiched between. The Velcro hooks can be used to facilitate application of rooting hormones to the stems: press a band, hook side down, onto a layer of hormone powder (8000 parts per million of indolebutyric acid in talc is recommended), then wrap so the hooks press slightly into the stem.

3. Expose the plant to light very gradually - "burning" of the pale growth is likely unless shading is removed slowly, over a week or two.

4. After two to six weeks (or possibly longer, depending on the species - again, experimentation is necessary, cut off the shoots just below the bands and remove the bands.

The bases of the cuttings might swollen; some roots might have formed under the bands.

5. Treat the cuttings again with 3000 to 8000 parts per million of indolebutyric acid in talc, and stick



Two strips instead of one enable complete contact to be made with a thin stem.

them in an appropriate rooting mix (Bassuk and Maynard use equal parts of perlite, peat and sand). Root under mist, with 77°F (25°C) bottom heat and 16-hour lighting for best results. Good root systems should develop within a month or so.

Woody plants rooted successfully (at least 50% "takes") by the method described above include *Acer griseum* (paper-bark maple), *Acer saccharum* (sugar maple), *Betula papyrifera* (paper birch), *Castanea mollissima* (Chinese chestnut), *Pinus sylvestris* (Scots pine), *Quercus coccinea* (scarlet oak), *Quercus palustris* (pin oak), *Syringa vulgaris* 'Charles Joly', 'Charles X', 'Michel Buchner', and 'Mme Lemoine' (lilacs, and *Taxus x media*. Some species don't need shading prior to banding for successful rooting; these can just be banded when their shoots reach the appropriate size (again, wait for two to six weeks, or longer, before removing the bands and sticking the cuttings). Woody plants rooted by banding without etiolation include *Acer platanoides* (Norway maple), *Acer rubrum* (red maple), *Carpinus betulus* (European hornbeam), *Chionanthus virginicus* (old-man's beard), *Corylus americana* (American filbert), *Pinus mugo* (mountain pine), *Pinus strobus* (white pine), *Pinus thunbergiana* (Japanese black pine), *Pyrus calleryana* (Callery pear), *Quercus robur* (English oak), *Quercus rubra* (red oak), and *Syringa vulgaris* 'Belle de Nancy' and 'Pres. Grevy' (lilacs). Some species don't even need treatment with rooting hormones.

If you try this "new-old" method, its developers would appreciate hearing about your successes and failures. Write to Professor Nina Bassuk, Department of Floriculture and Ornamental Horticulture, Cornell University, Ithaca, NY 14850.

Source: B. Maynard and N. Bassuk, "Researchers Grow Plants Under Cover for Better Cuttings," *American Nurseryman* 163(7), April 1, 1987, 124-128, 130-131. (American Nurseryman Publishing Co., 111 N. Canal St., Suite 545, Chicago, IL 60606.)

ANTITRANSPIRANTS for ROOTING CUTTINGS.

Horticulturists in Israel report improved rooting of softwood peach cuttings with weekly sprays of an anti-transpirant. This should be beneficial for other kinds of cuttings, too, to minimize moisture losses while new roots are developing. Various transpirants are available from garden supply stores; for example, "Wilt-Pruf", available in a convenient aerosol spray can.

Source: Abstract 2394, *Horticultural Abstracts* 57(4), April 1987, 253-254, (C-A-B International, Farnham Royal, Slough SL2 3BN, United Kingdom.)

From the February 1981 PBA Newsletter:

Propagating plants by cleft grafting the branch of the desired species onto a host plant:- when the graft has taken, the foliage of the host plant is removed to leave the desired species branch growing out from the trunk of different species. Sometimes this may not be successful in that over a number of years, like with some organ transplants in humans, the host plant rejects the material that has grown onto it and the combination dies. It is best to try and get roots to grow from the grafted stock so that the host plant's trunk and root system can be removed. This is also advisable if one wishes to eliminate the scar where the union took place between the scion and the host plant,- considered by the Japanese to be an undesirable feature in a bonsai. Hence propagating by cuttings circumvents the above problem.

The first page that follows is a reproduction of the contents of the pamphlet "How to Root Tree Cuttings" by Dr. Robert C. Hare, Southern Forest Experiment Station, Forest Service, U.S. Department of Agriculture. Dr. Hare's formula for rooting powder is as follows:

Dissolve the following in 40ml anhydrous acetone:

0.5 gm IBA (indolebutyric acid)

0.5 gm PPZ (1-phenyl-3-methyl-5-pyrazolone)

Source: K & K Laboratories, Plainview, NY
Transfer solution to 24 gm talc (Baker USP) in a bowl. Stir slurry constantly in a hood over gentle heat and under a gentle air stream until completely dry. Add 225 gm talc and sift through a stack of sieves to 45 mesh. Grind the

The Key: Girdle Before Cutting

Rooting of plant cuttings is nothing new to horticulturists. They have been doing it for years to propagate improved genetic strains of food crops and flowers. But trees don't cooperate like flowers and crops. Few tree species will root from cuttings under normal circumstances.

Now, however, a new technique is available for forest geneticists — and home gardeners as well — to propagate trees directly from cuttings. It works with both pines and hardwoods, and the tools needed are available to anyone at small cost.

Key to the process is girdling the shoot a month or two before cutting. This prevents translocation of sugars out of the shoot via the inner bark. Food reserves therefore accumulate above the girdle where they cause callus tissue and root primordia (appearing as small bumps) to form.

No expensive growth chamber is needed with these techniques. Success can be achieved under ordinary greenhouse conditions. And if no greenhouse is available, more simple expedients can be used. It's all outlined in this folder.

This new system is similar to air-layering for plant propagation — up to a point. Both improve rooting but, under this new system, the cutting is removed to an optimal environment once callus is formed. This promotes rapid rooting and eliminates the problem of dried-out cuttings. It also eliminates use of damp moss, used with air-layering, which often leaches out growth substances.



Follow These 10 Steps for Success

Note: For best results, girdle hardwoods in the spring when leaves have expanded fully. Girdle pines in mid-summer.

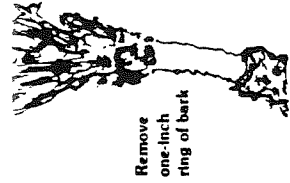
Girdle many more cuttings than you'll need, so only the ones showing root primordia can be selected for rooting. For rooting stock, select branches well exposed to the sun in the lower part of the tree.

Remove all foliage from a two-inch section of stem, about six to eight inches below the terminal bud.

With a pocket knife, remove a one-inch ring of bark down to the wood in the defoliated section.

Apply a slurry of rooting powder to the upper portion of the girdle (closest to the terminal bud) with a camel's hair brush. See page for slurry formula, or use commercial powder containing 0.8 percent IBA such as Hormodin 3.

Wrap wound with plastic film followed by aluminum foil.



Remove one-inch ring of bark

Leave intact for six weeks for hardwoods, eight weeks for pine. Then sever cuttings below the girdle and transport to greenhouse in plastic bags. Immerse cuttings in water to freshen. In case of oak trees, girdles should be examined at four and five weeks. If callus has formed, cuttings should be taken at this time, because oaks tend to overcallus. This inhibits rooting.



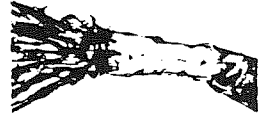
Apply slurry to upper portion of girdle

Remove the plastic film and foil. This is the time to select the most promising stock. Choose the ones with bumps (root primordia) on the callus, as these will root faster than those without the root beginnings. While holding the cuttings under water, reclip the cutting at the upper end of the girdle.

Moisten the cutting base with water, or preferably 50 percent ethanol, and dip the base into talc containing powdered sucrose and captan (10 percent each for pines, 20-5 for hardwoods). The ethanol wets the stem better than water does. It also reduces objectionable wetting of the rooting powder.

Insert the cutting base two to three inches deep into a rooting medium composed of equal parts of fresh perlite and vermiculite, using a spacing of 4 x 4 inches. Medium should be sifted beforehand with 10-mesh screen to remove the fines, which inhibit aeration. In cool weather, electric heating cable can be used to maintain 75-78 degrees in the medium.

From this point, the need is to allow cuttings to root under humid conditions. One way is to apply intermittent mist in a greenhouse. This is best controlled by a Geiger Mist-A-Matic system, which operates by evaporation of water from a screen. By properly adjusting the counterweight and the position of the screen at the edge of the



Wrap with plastic film and foil



Primordia (small bumps) on callus

bed, mist will be applied only when necessary to maintain a film of moisture on the cuttings. Overwatering is detrimental because it keeps the medium saturated, preventing free diffusion of oxygen, and it tends to leach nutrients from the cuttings. For the same reason, oil-burner type nozzles are preferable to the Florida-type impact nozzles, which give a coarser spray with more runoff into the medium.

When roots have developed, usually in one to three months, transplant into containers. Then gradually reduce the watering regime and fertilize weekly with diluted 20-20-20 fertilizer until root system is well established.

No greenhouse facilities? Root the cuttings directly in perforated-bottom quart milk cartons filled with the rooting medium. Water thoroughly and cover the entire plant with polyethylene to establish humid conditions. Keep out of direct sunlight but in bright light. After the cutting has rooted, tear off the bottom of the carton and plant the containerized cutting in the ground. The paper carton soon will deteriorate.

final mixture in a large mortar and sift again.

If all of the above seems to be a lot of effort for anyone not in the propagating field, it should be noted that preparations which are readily accessible for us such as Rootone and Homodin, do not contain as high a concentration of IBA (indolebutyric acid). The tables which follow have a column on the far right listing the suggested auxin content or level of IBA. The suggested concentrations ranging from 3 to 16 thousand ppm are much higher than that listed on Rootone, i.e. 570 ppm IBA.

The table "Suggested Times for Taking Cuttings is from an article titled "Propagating Woody Plants from Cuttings" taken from the April 1979 issue of Ornamentals South, and written by Carl Whitcomb.

Both the table and the article by Genie Paul appeared in the March 1980 issue of New Orleans Bonsai.

An essential ingredient in helping cuttings to root is to keep them exposed to a moist atmosphere. This is very pointedly stated in Dr. Hare's pamphlet — "Overwatering is detrimental because it keeps the medium saturated, preventing free diffusion of oxygen, and it tends to leach nutrients from the cuttings. The concluding article in the following series by Pete Jones, Northern Virginia, describes how he expanded on a procedure used by Mary Wells to root boxwood cuttings in an aquarium given to her by Mary Holmes Bloomer. He has succeeded in establishing cuttings, which within three weeks have roots one to two inches in length

SUGGESTED TIMES FOR TAKING CUTTINGS

(Each "X" represents approximately the first or last half of a month.)

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Rooting Time (weeks)	Suggested Auxin Concentration ¹
Broadleaf Evergreens														
<i>Abelia grandiflora</i>							XX	XX	XX	XX	XX	XX	4-6	8
<i>Berberis mentorensis</i>									XX	XX	XX	X	2-3	8
<i>Berberis julianae</i>									XX	XX	XX		6-8	8
<i>Buxus spp.</i>									XX	XX	XX		6-8	8
<i>Cleyera japonica</i>									XX	X			6-8	8
<i>Elaeagnus pungens</i>									XX	XX	XX	XX	6-8	8
<i>Euonymus fortunei</i>	XX	XX	XX										3-4	3
<i>Euonymus japonica</i>	XX				X		XX	XX	XX	XX	XX	XX	5-6	3
<i>Euonymus kiautschovica</i>													5-7	3
<i>Gelsemium sempervirens</i>													6-7	3
<i>Ilex cornuta</i>									XX	XX	XX		7-8	8
<i>Ilex crenata</i>									XX	XX	XX	XX	6-8	8
<i>Ilex opaca</i>													6-8	8
<i>Ilex fosteri</i>					XX								9-11	8
<i>Ilex vomitoria</i>									XX	XX			10-12	8
<i>Ilex 'Nellie Stevens'</i>	XX												7-8	3
<i>Ilex aquifolium</i>									XX	XX	XX	XX	7-8	8
<i>Lonicera japonica</i>	XX												7-8	3
<i>Mahonia spp.</i>					XX	XX	XX	XX	XX	XX	XX	XX	4-5	3
<i>Mandarin domestica</i>									XX	XX	X		7-8	8
<i>Osmanthus spp.</i>									XX	XX	X		7-8	8
<i>Photinia spp.</i>									XX	XX	X		7-8	8
<i>Pyracantha spp.</i>					X		XX	XX	X				8-10	8
<i>Viburnum rhytidophyllum</i>									XX	XX	XX	XX	7-8	8
<i>Yucca spp.</i> (root cuttings)	XX												7-8	8
<i>Ligustrum japonicum</i>							XX	XX	XX	XX	XX		10-14	
<i>Ligustrum vicaryi</i>							XX	XX	XX	XX	XX		7-8	3
<i>Prunus laurocerasu 'Zabelliana'</i>	XX												3-4	3
Coniferous Evergreens													6-8	3
<i>Chamaecyparis nootkatensis</i>													10-12	16
<i>Cupressus sempervirens</i>								XX	XX	XX	XX		12-16	16
<i>Juniperus chinensis</i>									XX	XX			8-10	8
<i>Juniperus spreaders</i>	X												12-16	16
<i>J. c. Torulosa</i>									XX	XX	XX	XX	8-10	8
									XX	XX	X		12-16	16

TABLE Continued

(Each "X" represents approximately the first or last half of a month.)

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Rooting Time (weeks)	Suggested Auxin Concentration ¹
Juniperus														
<i>horizontalis</i>	XX												8-9	8
<i>J. procumbens</i>								XX	XX	XX	XX	X	8-9	8
<i>J. conferta</i>									XX	XX	XX	XX	8-9	8
<i>Taxus spp.</i>													10-14	16
<i>Thuja occidentalis 'woodward'</i>	XX												7-9	8
Deciduous Trees - softwood														
<i>Acer palmatum</i>						X	XX	X					6-8	16
<i>Cornus florida</i>						X	XX	X					6-8	16
<i>Euonymus bungeana</i>						X	XX	XX					6-8	8
<i>Ilex decidua</i>						XX	XX	XX	X				6-7	8
Magnolia														
<i>soulangiana</i>						X	XX						5-6	16
<i>Magnolia stellata</i>						X	XX						5-6	16
<i>Prunus sargentii & others</i>						X	XX	XX					4-6	8
<i>Pyrus calleryana & 'Bradford'</i>						XX	XX						5-6	16
Platanus														
<i>occidentalis 'Andus'</i>						X	XX	X				XX	4-5	16
<i>mondi</i>						X	XX	XX					5-6	16
<i>Ulmus parvifolia</i>						XX	XX	XX					4-5	30
Morus alba														
<i>'Fruitless'</i>						X	XX	X					3-4	8
<i>Maclura pomifera 'Pawhuska'</i>						X	XX						3-4	8
Deciduous Shrubs														
<i>Berberis thunbergii</i>							X	XX	XX				6-8	8
<i>Chaenomeles spp. (root cuttings)</i>						X	XX	X					10-12	
<i>Euonymus alata</i>						XX	XX	X					5-7	8
<i>Forsythia spp.</i>													4-5	3
<i>Lagerstroemia indica</i>						XX	XX	XX	(non flowering shoots)				3-5	0
<i>Ligustrum spp.</i>						X	XX	XX					4-5	3
<i>Spiraea (sp. fl.)</i>						XX	XX						4-6	3
<i>Spiraea (sum. fl.)</i>						X	XX	X					5-7	3
<i>Syringa spp.</i>						XX	X						5-7	16
<i>Viburnum spp.</i>						XX	XX						4-8	8
<i>Weigela spp.</i>						X	XX						4-6	8
<i>Punica graninata</i>							X	XX	X				3-4	3

¹Level of IBA in parts per million (ppm) as a talc preparation (3=3,000 ppm; 8=8,000; 16= 16,000 ppm)

PROPAGATION BY CUTTINGS

by Genie Paul

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South Coast Bonsai Association

Cuttings are parts of living plants cut and treated to generate roots and become new plants. They make especially good bonsai. Cuttings are made from side shoots of vigorous, healthy plants and may come from many different species. Those adaptable for bonsai use are, to name a few: azalea, pomegranate, cypress, olive, juniper, spruce, willow, maple, zelkova, elm, cotoneaster, pyracantha, boxwood, ginkgo, plum, and chrysanthemum. Pines are not recommended for this technique. Read "Bonsai For Beginners" by H. J. Larkin for more complete list of plants suitable for cuttings.

Cuttings may be made three times a year: in spring, when new buds appear; June or July, when further new buds appear; or in September or October.

Procedures and Techniques:

1. Cut woody or sucker branches 2 to 5 inches long with at least 3 buds. Remove all leaves except for a few at the end of the branch. Cut more stems than needed, as not all will take. A cutting may have one, two, or several branches.
2. Immediately after cutting, put them in a container of lukewarm water to which a small amount of sugar has been added. Leave in sugar for an hour to invigorate the branches.
3. Re-cut the end of the stem at a 45-degree angle just below the bottom node. (Fig. 1)

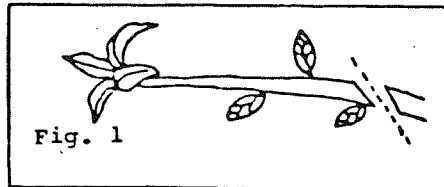


Fig. 1

4. Prepare a wooden box 3" deep with clean sand and peat moss. Wet soil thoroughly and make holes 1" deep and 2" apart, being sure that drainage is good.
5. Dip wet end of cutting in hormone-fungicide powder (Rootone F) and set cutting in hole with at least 2 nodes below surface. The cutting may be set upright or at an angle. If at an angle be sure the cut side is down. Firm soil around cuttings.
6. Protect from sun for 10 days or more, then keep in partial shade for several months. A cutting may take a year before it is ready to train and pot. Keep soil moist but not wet and mist leaves often.
7. After 3 months apply weak fertilizer twice a month.
8. Some plants (azalea, cotoneaster, pyracantha) grow better when the cutting has a "heel" or a part of the main branch left on. Remove a small portion of the older branch with a sharp knife at the base of the cutting. (Fig. 2)

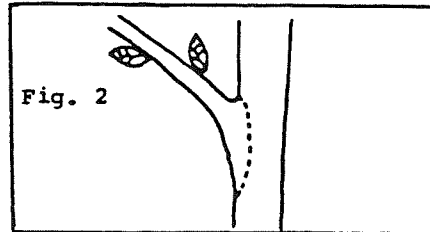


Fig. 2

9. A thick-stemmed cutting should be tapered at the end to provide more surface for root growth. (Fig. 3)

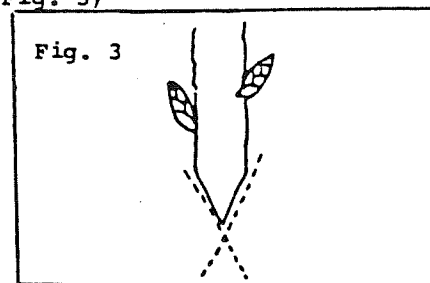


Fig. 3

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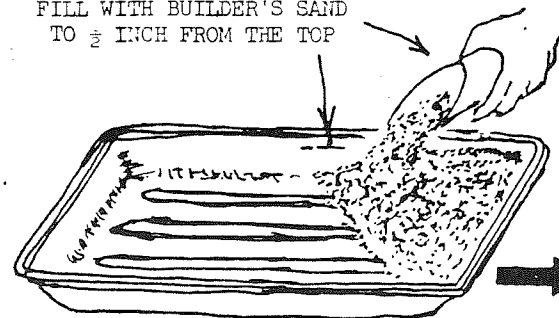
Starting Cuttings In Aquariums

While attending one of Cliff Pottbergs workshops last fall, he told us how he had been successful in rooting JUNIPERUS PROCUMBENS NANA and BUXUS MICROPHYLLA COMPACTA. Since I had tried to root cuttings for years without success, I had given up and was now engrossed in air laying. Cliff's explanation of how the cuttings are prepared and handled seemed easy enough, so I decided to try once more. While helping Mary Weaver style a PROCUMBENS NANA, he said that the branches he had removed would root very easily. All you have to do is put them in a container with a lid and some water. Of course your will need something to keep the cuttings from contacting the water directly. I asked what substance should or could be used? Since Cliff knew that I was curious, he asked me to try different methods. Since I had nothing to loose, I thought I would give it a try. Mary Weaver was kind enough to share with me some of the branches that had been removed. Arriving home, I took a five gallon plastic bucket that I had, filled it with two inches of pea gravel and one half inch of water. Trying to be smart, I inserted the cuttings in the gravel thinking that more air could reach the area where I wanted roots to develop. I placed the lid on the bucket rubbed my hands together with a grin, and thought success at last. This was in October and I began reading up on cuttings and air laying. GOOD GRIEF! October is cool, low humidity, shorter days. ARRK! I was doomed. Then came a Mellingers catalog and I read through their Greenhouse recommendations. AHHA, bottom heat, high humidity, light, the works, cost too high. There must be a cheaper way I figured. Now then, here are my ingredients for a reasonable greenhouse: For bottom heat, a twelve foot heating cable cost \$8.99. Next, a container so you can watch the progress. I had two ten gallon aquariums which I used. Two plastic seedling flats, the same size as the aquariums. I filled the flats with sand and burried the cable and thermostat one half inch, then placed the aquariums on the flats. At this point, I began to think a little clearer, so I decided to use two inches of pea gravel in one aquarium and two and one half inches of sand and perlite (50% each) in the other aquarium. Having completed my set up two weeks before Christmas, I began looking for cuttings of all kinds. The PROCUMBENS NANA and the BUXUS MICROPHYLLA from the plastic bucket were the first cuttings to go into the aquariums. I put these cuttings into the pea gravel aquarium. Since they had been without light for so long I thought they might be KAPUTT. Much to my surprise, they looked strong and healthy, and had began to callous. I dusted the cuttings with Hormex #30, using a camels hair brush before inserting them into the pea gravel. After all cuttings are inserted, I used a mister to spray about one half inch of water into the aquariums. I used an old piece of glass, cut to the size of the aquarium, for a top.

For a light source, I set a two foot grow light on top of the glass. Once a week I check the heat and humidity. So far a constant 78 degree heat and 85% humidity has been maintained without any work on my part. Every two weeks I lightly mist with water. The PROCUMBENS NANA have developed roots, the ACER PALMETUM and ULMES PARVIFOLIA HOKKAIDO have popped leaves and callouses quite well. I AM ONE HAPPY FELLOW

---Pete Jones---

1.
TAPE ANY HOLES.
FILL WITH BUILDER'S SAND
TO $\frac{1}{2}$ INCH FROM THE TOP

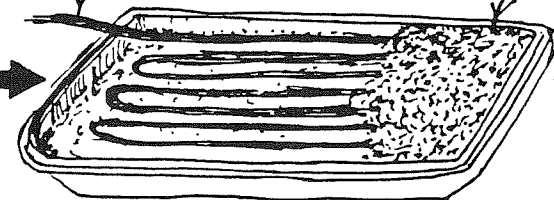


PLASTIC TRAY OR FLAT

2.

SNAKE IN THE HEATING CABLE

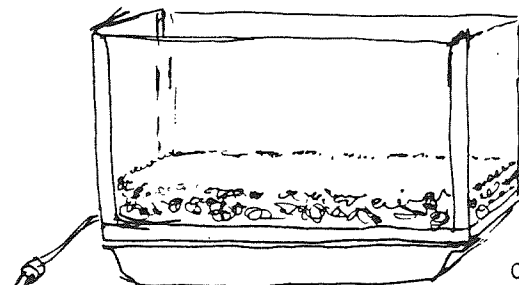
FILL THE TRAY TO BE LEVEL
WITH THE TOP



3.

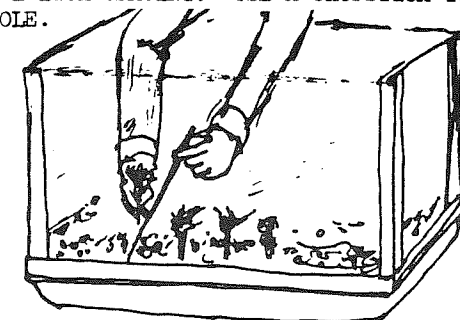
PLACE AQUARIUM ON TOP OF TRAY

FILL WITH 3 INCHES OF PEA GRAVEL OR
MIX OF EQUAL PARTS OF SAND AND PERLITE

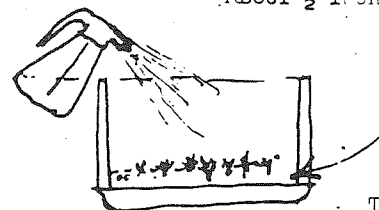


4.

PLACE CUTTINGS READIED BY DR. HARE'S
METHOD VERTICALLY TO A DEPTH OF $1\frac{1}{2}$ INCHES
AT ABOUT 2 INCH SPACING. USE A CHOPSTICK TO
OPEN THE HOLE.



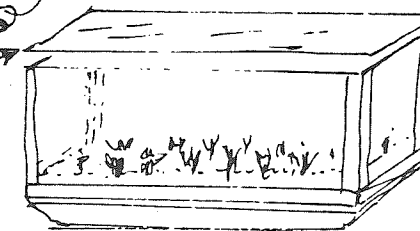
5.
MIST UNTIL WATER REACHES
ABOUT $\frac{1}{2}$ INCH DEPTH

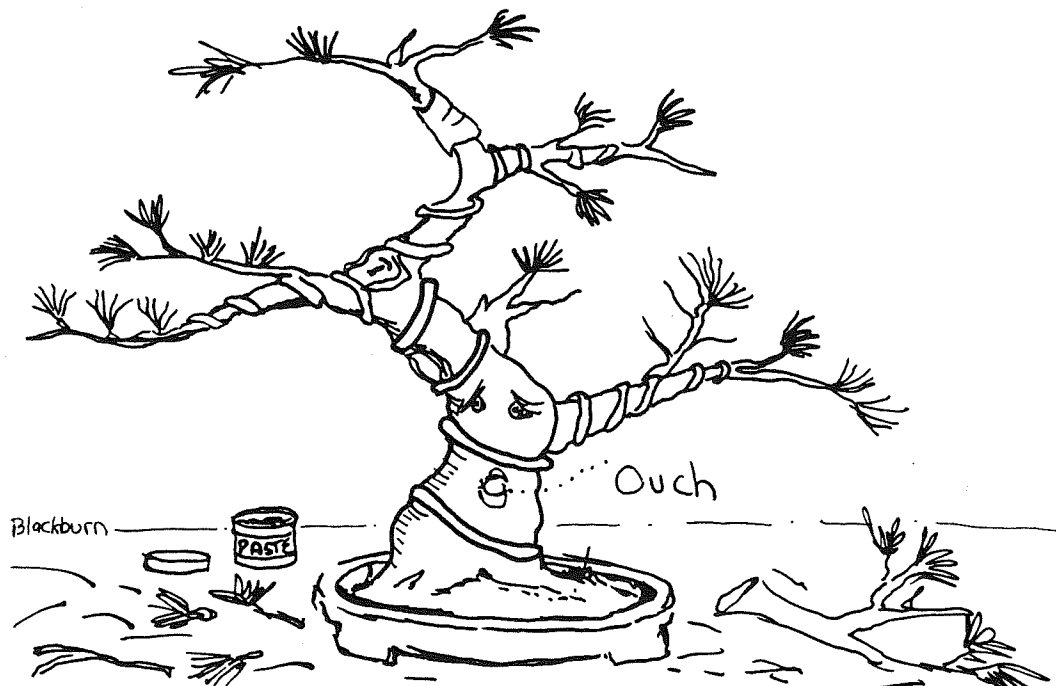


6.
TURN ON GROW LIGHT

SEAL AQUARIUM
WITH GLASS.

FINIS !!!!!



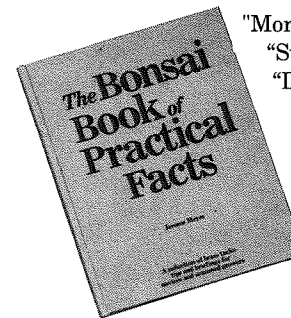


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April 24, 1991

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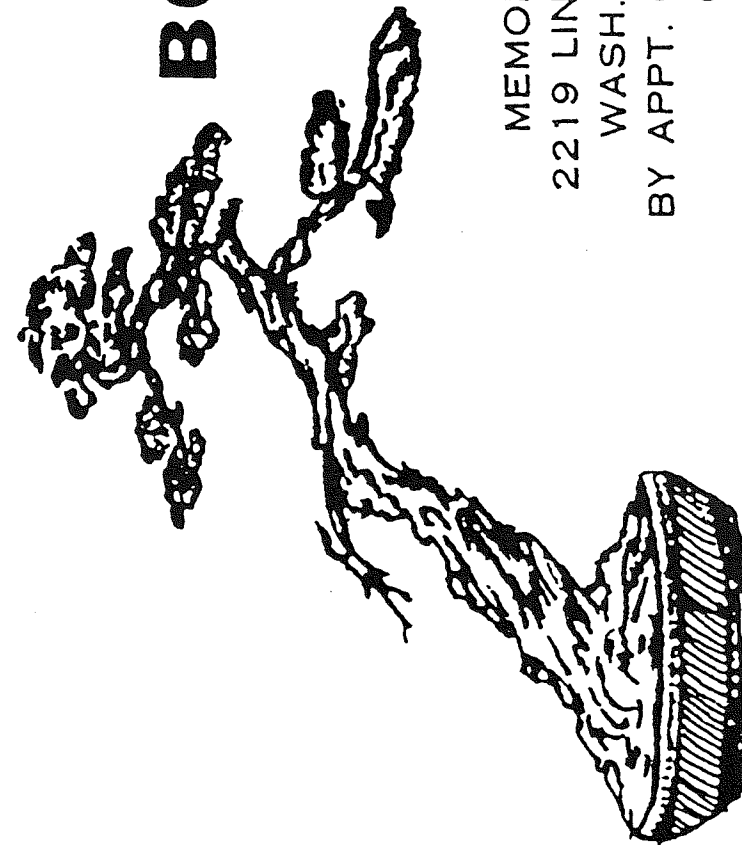
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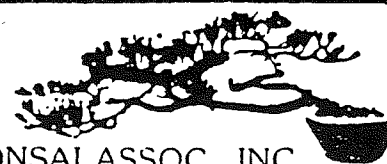
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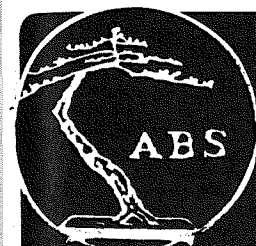
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