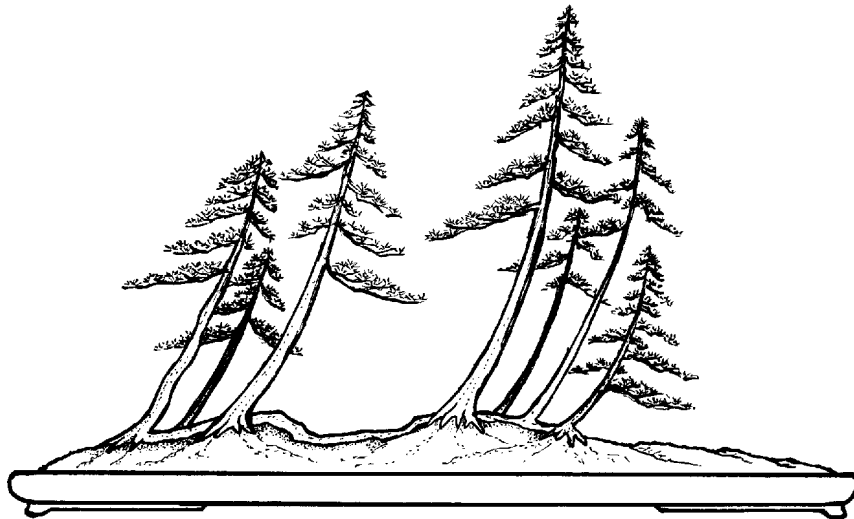


INTERMEDIATE BONSAI

A COURSE SYLLABUS



NH

By Thomas L. Zane
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N.H.

Intermediate Bonsai - A Course Syllabus

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PREFACE

The principal use of this *Syllabus*, is as a workbook to accompany hands on learning sessions for the intermediate student of bonsai. Instruction is offered on the basic art and aesthetics of bonsai, the design and maintenance of various styles of bonsai, the practice of several special techniques used in creating a bonsai, and finally on the effective display of finished trees.

One group instructional technique which I have found to be effective is to begin with the students becoming familiar with the *Syllabus*. I encourage them to thumb through it, then I cover the highlights of aesthetics in Chapter 1. This is followed by a slide/tape presentation on *Harmony*. After a break, I show bonsai from my collection as examples of the various styles covered in the *Syllabus*. The students are then instructed to place on the table before them the plant they brought and to study its structure with a view toward deciding the style for which it is best suited. Students refer to sections of the *Syllabus* while instructor(s) circulate and gently guide the student's decision making until an appropriate style is agreed upon. Then the students are asked to read the chapter pertaining to the agreed upon style and instructor(s) provide detailed guidance in the completion of the styling.

Often bonsai artists use words from the Japanese language when referring to bonsai styles or unique features on bonsai. Because this *Syllabus* is written in English and is intended for use by English speaking persons, Japanese language terms are used sparingly. For the curious there is a glossary of terms in the Appendix which includes translations of some of the more frequently used Japanese bonsai terms.

There are various audio visual presentations which may be used to supplement this text and to reinforce learning. A list of these materials is included as an Appendix to this *Syllabus*.

Specific credit for materials in this text include:

The drawings of bonsai styles on the Title Pages and in illustrations 3-1, 4-1, 5-1, 5-4, 5-5, 6-1, 7-1, 7-3, 7-4, 8-2, 8-4, 9-1, 10-1, 11-2, 12-1, 13-1 through 13-3, 14-1, 14-2, 15-1, 16-1, 16-2, the grass on page 19-5 and illustration F-2 were created by Norman Haddrick and are reproduced with his permission.

All other information in this *Syllabus* was acquired over a period of years of studying, learning, teaching and practicing the art of bonsai.

My thanks go to my many teachers and students who have so willingly shared their time, knowledge and talents.

By Definition

By Definition

Bonsai is the art of creating a miniature replica of a mature tree or group of trees which could be found in nature. The bonsai artist attempts to create that replica by changing normal plant material into a miniature tree which exhibits the illusion of maturity.

In Review...

In order to accomplish this, the artist must understand that both horticultural principles and artistic principles must be followed.

Introduction to Bonsai - A Course Syllabus discussed the horticultural aspects of bonsai as well as basic techniques, rules and principles used in creating a bonsai. When doing more advanced bonsai work, keep these rules in the back of the mind, but do NOT be a slave to them. Approach each new piece of material with an open mind. Do not force the tree into a style, rather give it style. Use the basic rules as needed. Let the material tell you how it may best be treated.

This Intermediate Syllabus takes the student more into the artistic realm of bonsai, discussing the creation of styles other than the basic informal upright bonsai.

Imagination...

Imagination, we all have it, to some degree or other. But in styling a bonsai we all too often don't call on our imagination and attempt to recreate a bonsai in the image of some basic bonsai icon, stoically following styling traditions which came from Japan some 50 years ago. These basic "rules", or principles, ARE important and ARE essential in getting one started on the road to creating good bonsai; but they are only the beginning of the journey, they are not the end all to bonsai design. The Japanese do not continue to copy the Chinese; they took what China had to offer and, using their imagination and skills, created their own bonsai based on what they see growing in their own land. If we are to progress in our chosen art, we too must evolve, develop, digress, deviate, exercise free thinking and adapt the best history has to offer and use examples in our own landscape on which to build.

ART and AESTHETICS OF BONSAI

Chapter 1

NOTES

I. OBJECTIVES

As a result of studying this section of the *Intermediate Bonsai Syllabus*, viewing audio visual presentations, or participating in other activities provided by an instructor, you will be able to:

1. Define the meaning of the terms *art* and *aesthetics*, and relate them to the styling of bonsai.
2. Explain why bonsai is a horticultural art form.
3. Describe factors which enhance the appearance of ageing in a bonsai.
4. Explain how rhythm enhances the artistic and aesthetic appearance of a bonsai.
5. Define *visual speed* and explain how texture on a bonsai affects visual speed.
6. Explain how good proportions and balance enhance the appearance of a bonsai.
7. Explain how the display of a bonsai affects its aesthetic value.

II. GENERAL

A. An understanding of **artistic composition** is essential in creating an aesthetically appealing bonsai.

1. The bonsai **artist's responsibility** is not only to create and maintain healthy miniaturized trees, but also to present an aesthetically appealing, that is, beautiful tree.

2. The function of **art** is the creation of things that have form and beauty. **Composition** means to put together. The putting together of a beautiful thing should be the objective of artistic composition.
 3. What makes a work of art special is that the artist was able to communicate his emotions to the viewer through his art. The communication of this emotion is the **aesthetics** of the art.
 4. The word, **aesthetics**, comes from a Greek word meaning, "perceptive by feeling". Webster's New Twentieth Century Dictionary defines **aesthetics** as, "the theory of the fine arts and of people's responses to them; the science or that branch of philosophy which deals with the beautiful; the doctrines of taste."
- B. The creation and maintenance of an aesthetically pleasing bonsai composition involves the application of a variety of horticultural and artistic principles.
1. The **horticultural principles** are well founded in the science of Botany: light, water, correct temperature range, soil within a particular pH range, periodic fertilizing and disease and pest control.
 2. The **artistic principles** applicable to bonsai are not unlike those appropriate to painting, sculpture, and other art forms. Proportion, balance, unity, rhythm, focal point, framing, texture, color, visual speed, display and environment all affect the quality of a bonsai.
 3. Bonsai is a synthesis of horticultural practices which permit the plant to thrive and artistic applications which make it attractive. Bonsai is a **horticultural art form**.
- C. A quality bonsai, incorporating various principles of both horticulture and art, creates within the viewer a feeling, an intuition, a sense of beauty. The techniques of applying these principles involve the creation of the appearance of ageing, of a pleasant rhythm of visual movement, a pleasing sense of

proportion, texture, and manner of presentation.

III. ELEMENTS OF BONSAI AESTHETICS

A. Ageing. People have preconceptions about the effects of aging on an object. In bonsai it is not necessary to present an old tree for viewing, merely one that has been styled to look old. In order to trick the viewer into intuitively believing that the bonsai is quite old, it is necessary to carefully replicate **visual cues** associated with age. Various techniques involving the roots, trunk, branches, and special effects are used to create these illusions of age.

1. **Roots.** Partially visible, large and mature **roots** gives the appearance of age. As a tree matures, the soil surface around its base erodes to expose surface roots which develop a mature bark. A well established tree has surface roots which cling to the earth in several directions.
2. **Trunk.**
 - a. **Trunk diameter.** The lower portion of the trunk is the oldest portion and should have a significantly greater diameter with a distinct taper, becoming narrower as it progresses upward. The overall diameter of the trunk should be appropriate to the height of the tree.
 - b. **Trunk posture.** The posture of the trunk gives visual cues to the viewer which tell a great deal about the apparent age of the tree. The trunk of a tree which emerges from the ground at an angle and continues up in a series of bends and curves gives the illusion of age overcoming the elements of nature.



Illus. 1-1

- c. **Trunk appearance.** The texture of a trunk's surface may be smooth and without blemish which gives the appearance of youth. Its texture may be rough, gnarled, and scarred giving the appearance of age. A mature tree usually has broken limbs and a trunk scarred by the elements.

3. **Branches.**

- a. The **angle** of the branches is a major visual cue in determining the age of a tree. Branches on juvenile trees have a strong upward growth while those on an older and more mature tree droop with weight and age.
- b. The lower branches, because they are older, are thicker. Since they have to reach out for sunlight, they are longer.
- c. The older the tree is the more branch **ramification** (multiple smaller branches) it will have. But, it will also have openings for the birds to fly through.
- d. The **apex** provides an indicator of age. The apex of an immature tree is relatively pointed, still moving upward. The apex of a mature tree is more rounded, having reached its maximum height and beginning to spread.

4. **Special Effects to Enhance the Appearance of Ageing**

- a. Scarring and damage caused by time can be created on a bonsai by creating areas of **dead wood**.
 - (1) The top of the trunk or the end of a branch may be stripped of bark, carved and bleached.
 - (2) A portion of the live bark on the trunk may be stripped to simulate a lightning strike or where a branch broke, fell and ripped tissue from the trunk.
- b. The **container** should have a patina of age rather than

appear bright and shiny.

- c. The **soil surface** of a bonsai gives the appearance of age if it has some contours and if a ground cover of moss is permitted to grow.

B. Visual Speed. If the eye moves too rapidly over an object the viewer may get a disquieting feeling. It is more pleasant to allow the eyes to rove around, to explore, to make comfortable stops at interesting places. Several factors affect visual speed.

1. **Texture** of the container, bark and foliage affects the speed at which the eye scans the composition. Eyes tend to move more quickly over smooth surfaced containers, bark and foliage which may be used to increase or reduce visual speed. The more interesting the texture, the more the eye will dwell on it.
2. The **rhythm**, straight or curved, affects the speed at which the eye scans the composition. Your eye tends to move up or down a straight trunk much more quickly than when viewing a gently curving one.
 - a. The **trunk** establishes the theme for the entire tree; branches and foliage take their cues from the rhythm set by the trunk.
 - b. If the trunk is **curved**, the branches should be curved.
 - c. If the trunk is **straight**, the branches should also be straight.
 - d. If the trunk **leans** to one side the branches **counterbalance** by leaning toward the other side.
 - e. **Curves** generate a calm and gentle feeling while the feeling created by angles and sharp curves is less gentle.



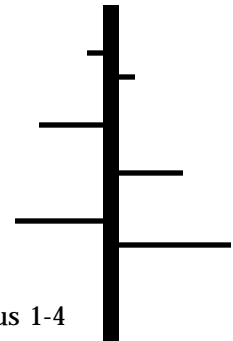
Illus 1-2



Illus 1-3

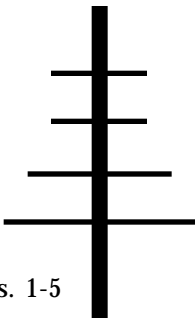
3. **Branch placement** may be used to slow visual speed.

a. Properly placed branches, as shown in the illustration, can provide an interesting and leisurely viewing of the tree. Each branch should invite the eye to pause and examine that branch before resuming its movement along the trunk. Notice how easily your eye travels up the trunk, pausing to explore a branch, and then moving on.



Illus 1-4

b. Improperly placed branches can result in the visual speed being slowed and even stopped. If two branches are growing from the same location on the trunk, one to the left and the other to the right (“T” or “bar” branching), they act as a barrier to smooth eye movement. The eye stops at the junction of the two branches and has difficulty deciding whether to go left or right and then has trouble resuming the vertical scan.



Illus. 1-5

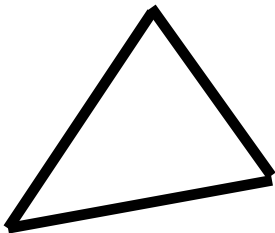
C. Proportion (scale)

1. **Proportion**, or scale, is the comparative relation between parts.
2. The proportions of the bonsai have to be **balanced**, the elements have to be in scale, and therefore appear logical to the viewer. The proportions must reflect what the viewer expects to see in a mature tree.
 - a. We expect to see the **larger diameter branches** lower on the tree and we expect the lower branch to be in proportion to the trunk.
 - b. There also needs to be a **logical proportion between the mass of the tree, the mass of the trunk, and the mass of the pot**. When any one of these three is too small or too large in relation to the other, the composition is unbalanced, disharmonious and therefore aesthetically unpleasing.

- c. The **rule of thirds** is an artistic concept which bonsai artists the world over use as a starting point when designing a tree.
- (1) The **lower third** of the tree should be devoted to surface roots and to a proportionately tapered trunk.
 - (2) The **middle third** of the tree emphasizes branching.
 - (3) The **top third** consists of small branches and the apex.

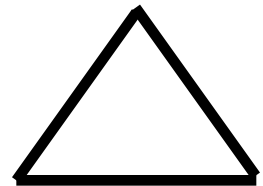
D. Balance

1. **Balance** is an integral part of the aesthetics in a bonsai composition.
 - a. Much of Western art relies on **symmetrical balance** as seen in the design of a formal English garden which uses basic geometric shapes such as the circle, square and triangle.
 - b. Of the various geometric shapes, the triangle best represents strength and stability. The equilateral triangle is static, inactive, passive and motionless; elements to be avoided in most Oriental art.
 - c. The isosceles triangle, having three unequal sides, is not static, supplies variety and a feeling of motion, and in its own way provides an **asymmetrical balance**.



Illus. 1-7

- (1) The unequal, or **asymmetrical** triangle, lacking equality or symmetry, is the concept upon which a unique type of **balance** can be achieved.



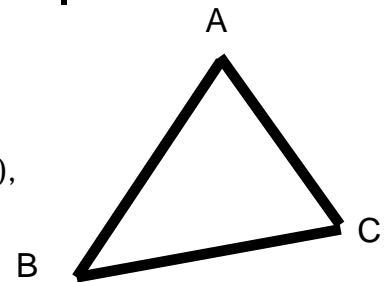
Illus 1-6

Art and Esthetics of Bonsai, Continued

NOTES

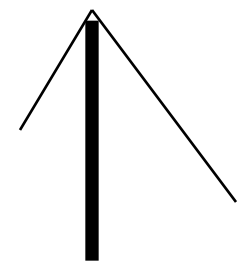
(2) Eastern painting, flower arranging, garden arrangement and bonsai all rely on the unequal triangle to provide balance and harmony to the composition. The Japanese term, *sabi*, meaning “deliberate imperfection”, comes to mind.

(3) The three points of an **asymmetrical** bonsai outline would touch the apex (point “A”), the longest lowest side branch on one side (point “B”), and either a lower side branch on the opposite side, or the edge of the container (point “C”).

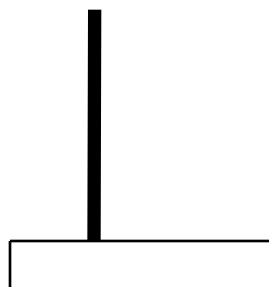


Illus. 1-8

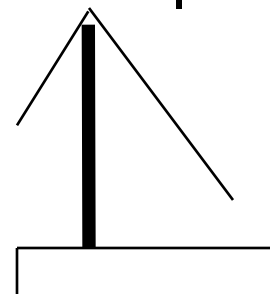
(4) When the tree is placed in its container, an asymmetrical **balance** is achieved by positioning the tree so that the greater horizontal mass of pot and soil on one side balances the greater vertical mass of the tree on the other. For this reason the tree is placed **off center** in its container.



Tree is off center to right



Pot is off center to left



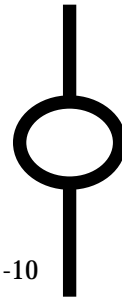
Two off-centers balance each other

Illus. 1-9

(5) The tree is **asymmetrical** and the relationship of the tree to the container is **asymmetrical**, but together they provide a **balanced** composition.

NOTES

2. **Balance** can be enhanced or destroyed by the **focal point**. An example of a focal point is the circle on the line in the illustration. The circle draws your attention, it is the place to which your eye consistently returns.
 - a. The **focal point** should be that portion of a bonsai composition around which the rest of the tree is styled. The focal point should have the greatest visual impact on the viewer. It has the ability to direct the viewer's attention toward that particular feature and away from lesser features.
 - b. It is important that a focal point be an appealing feature. If a focal point is an **undesirable feature**, the viewer has difficulty seeing the more commendable elements of the composition and tends to discount the artistic value of the bonsai. An example would be a brightly colored glazed container to which the eye constantly returns or a section of dead wood which is so overpowering in appearance that it inhibits the viewing of other elements of the composition.
- E. **Unity**. Unity within a bonsai composition is provided by the repeated use of similar or related elements throughout the composition. This repeated use of related elements provides a **rhythm**, a flow or a movement which enhances the unity of the composition.
 1. One of the unifying elements in most bonsai compositions is the **triangle**. It can be seen in the shape of individual branches, in the tree's silhouette and in the entire composition.
 2. **Unity** is achieved by relating trunk shape to branch shape. If the trunk is straight, the branches should be straight. If the trunk curves, the branches should have curves.



Illus 1-10

3. There should be a **unity**, a consistency in the elements which denote age. If a tree is young it should have a pointed crown, a slender trunk and branches, and no massive roots. If it is to portray an image of great maturity, it should have a wide foliage canopy, a thick and gnarled trunk and branches and strong roots. If it is to portray an image of an ancient tree, past its prime and on the decline, it should have a heavy short trunk, few branches, sparse foliage and dead wood.
4. **Unity** requires that a tree have a consistent trunk line; it must not mix several types of movement. There should be **unity** in the direction of movement: if the tree emerges from the ground leaning to the left, the apex should terminate leaning to the left.
5. A tree should have a **unity of gender characteristics**. A tree which is angular, has dead wood, has coarse foliage, and has a look of strength is a masculine appearing tree. A feminine appearing tree should be the opposite. The elements should not be mixed on the same tree.



Illus 1-11

F. Simplicity

1. Simplicity implies the **absence of the ornate**. Simplicity implies **naturalness**. Simplicity is freedom from unnecessary complexities. We eliminate that which is not necessary.
 - a. Seldom are bonsai **decorated** with balls, bells and streamers or with ceramic figures.
 - b. **Containers** are relatively simple; not ornate.
 - c. **Open space** is as important as filled space.
2. The Japanese term, **wabi**, meaning “richness by not needing” is appropriate to bonsai. If a bonsai is of quality, adornments are not needed. “Less is more.”

IV. EVOLUTION IN DESIGN

- A. The creation of a bonsai involves a processes similar to all other art forms; the **process of evolution**.
1. First comes a concept, then comes the transference of the concept into reality, and finally its refinement over a period of time.
 2. This process of conceiving and creating provides the creator of the bonsai a certain aesthetic pleasure accompanied by a sense of accomplishment.
 3. A sculpture can be finished as can a painting. A living bonsai is never finished because it is continually growing and changing.
 - a. It requires the constant application of artistic and **horticultural skills** to maintain its health and appearance.
 - b. If a branch dies or is damaged and if it must be removed from the design, the rhythm and speed of the overall tree is changed and redesigning is necessary to compensate.
 - c. If a tree dies in a group planting, consider leaving it as part of the composition.
 - d. Consider placing a **dead tree trunk** or branch on the surface of a mature planting to show continuity of its evolution.
 - e. A **container** may be broken or become otherwise unserviceable, requiring the repotting of the bonsai. This will again cause a change in the overall appearance of the tree and may require that some adjustments be made to the tree or to the soil surface to compensate for the changed container.

- B. In each stage of the evolution of the bonsai, artistic techniques, aesthetic considerations and horticultural principles have to be employed.

V. DISPLAY AND PRESENTATION

- A. A bonsai should be displayed in such a way as to maximize the tree and to minimize its surroundings. Height, surroundings and background are all factors in displaying bonsai.
1. Bonsai should be displayed at a **height** which enhances the illusion that it is a mature tree in nature; middle of its trunk at the viewer's eye level.
 2. The bonsai may have an **accessory** displayed nearby which either blends or contrasts with the mood of the main tree. The accessory may be a rock, another but smaller bonsai or a small planting of grass or a succulent.
 3. There may also be a **scroll** or other appropriate wall hanging in the vicinity to enhance the display.
 4. The **scale** of each item in the display should be coordinated to harmonize rather than to conflict with the focal point, the bonsai.
- B. The **area** where the tree is displayed should be uncluttered; in relative isolation. The background should be plain and of a neutral color to not conflict with or detract from the tree.
- C. An appropriate **container** should be used and the tree it contains should be potted according to the principles of balance and proportion. The container functions like the frame of a picture; to enhance the composition but to not detract from it.
1. The container should be an appropriate **size** for the bonsai. There are various recommended proportions, the most common being that the length (long axis) of the container should be approximately two thirds either the

height of the tree or the spread of the foliage mass, whichever is greatest.

2. The container should complement the rhythm, texture, and color of the bonsai.
- D. The **soil surface** and ground covers should be tended without appearing to be artificially groomed.
- E. If wire remains on the tree the **wiring** should be done skillfully and not in such a manner as to detract from the appearance of the tree.

VI. HARMONY

- A. The result for which we all strive is **harmony**. Webster's New Twentieth Century Dictionary defines harmony as:
- “...fitting together, agreement, a combination of parts into an orderly or proportionate whole, congruity, proportionate arrangement of color, size, shape which is pleasing to the eye...”
- B. Harmony in a bonsai composition is achieved by the application of various artistic techniques, many of which are summarized in a slide/tape program titled, *Harmony in Bonsai*.
- C. The next chapter in this Syllabus explores harmony further.

VII. SUMMARY

- A. Bonsai is a horticultural art form. Horticultural principles keep it alive and healthy and artistic principles make it attractive.
- B. Many factors contribute to a bonsai's appearance of great age.
- C. The artistic and aesthetic appearance of the bonsai are enhanced by the rhythm, or the visual flow of the composition.

Art and Esthetics of Bonsai, Continued

NOTES

- D. Correct proportions not only serve to unify a composition but send subliminal messages about the tree to the viewer.
- E. A bonsai, living, growing and ever changing, is never “finished”.

HARMONY in BONSAI

Chapter 2

NOTES

I. OBJECTIVES

As a result of studying this section of the *Intermediate Bonsai Syllabus*, studying APPENDIX C - Harmony, viewing audio visual presentations, or participating in other activities provided by an instructor, you will be able to:

1. Define harmony.
2. Discuss the concept of *harmony* as it applies to bonsai, to include:
 - a. Understatement
 - b. Perspective
 - c. Line
 - d. Balance
 - e. Soul and spirit
 - e. Nature and natural appearance
 - f. Display of bonsai

II. GENERAL

A. An expanded discussion of Harmony is included in APPENDIX C to this Syllabus.

B. Definitions

1. **Harmony.** Harmony means fitting together, agreement, a combination of parts into an orderly or proportionate whole, congruity, agreement or proportionate arrangement of color, size, shape, etc., that is pleasing to the eye. It is an affirmative emotional response for which bonsai artists strive.

2. **Bonsai.** Bonsai is the art of creating a miniature replica of a mature tree or group of trees which could be found in nature. The bonsai artist attempts to create an **illusion** by changing normal plant material into a mature tree.

III. ELEMENTS OF HARMONY

Various elements, concepts and conditions contribute to the existence of harmony in a given composition. They include: understatement, perspective, line and its continuity and rhythm, balance, and the soul and the spirit of the creation. These will be discussed briefly here. See **APPENDIX C** for more details.

1. **Understatement.** There is a basic aesthetic premise in the Orient which states that the **less** powerful a thing may be, the **more** effective it can be. Empty space is as important as filled space.
2. **Perspective** refers to a method of organizing forms in space to create an illusion of depth on a two dimensional surface, or of greater depth in three dimensions. Perspective in bonsai is used to further the illusion that the bonsai has greater mass, greater age and greater maturity and is in a much larger environment than is really the case.
3. **Line** in art refers to a series of points which cause the eye to move along a particular path. It controls the way we view a particular composition. The **visual movement** along the path created by these points of interest should be smooth and fairly continuous to preclude the eye's becoming confused and lost in the composition.
4. **Balance** fosters harmony. However, unlike much of Western art, Oriental art, on which bonsai is based, relies on **asymmetrical balance** rather than on symmetrical balance.
5. **The soul and the spirit.** Many years ago an early Chinese art critic attempted to establish a criterion by which to

judge landscape paintings. In effect he said that a work of art may be technically perfect, exhibiting perfect technique in execution and workmanship, and it may follow all of the rules, do everything right. But unless it has a **soul and a spirit**, it has not been “divinely inspired”. This soul and spirit separates the great bonsai masterpieces from other specimens.

IV. NATURE'S PLACE IN BONSAI HARMONY

- A. **Nature** provides our most basic lessons on harmony. Some of the greatest artists spent their lives studying nature. Mountains, streams, rocks and trees in their natural environment usually exist in simplistic harmony with each other and with their surroundings. The bonsai artist learns by observing nature.
- B. **Natural Style.** Bonsai styling should, within reason, reflect the natural growth habit, shape and form of a species. The bonsai artist combines horticultural and design skills to create a miniature replica of the tree which is in harmony with what might be seen in the wild.
- C. **Illusionary Age.** Bonsai present an **illusionary age**; they appear to be of a certain age regardless of their actual age. The trunk, branch and foliage mass should be compatible; consistent with the illusionary age which the bonsai represents.
 - a. A **Juvenile** tree, 10 - 25 years old, has a slender trunk, little taper, upward sweeping branch growth, foliage in a ball shape. The ratio of lower trunk to branches is about 50/50.
 - b. A **Mature** tree, 25 - 75 years old, has some taper in the trunk, ramification of the roots, greater trunk diameter and maturing bark. There is more foliage mass in proportion to the lower trunk. Lower branches begin to grow outward so the tree begins to get broader.

- c. **Old** trees, 75 - 250 years, have significantly heavier trunks and branches and the branches are more horizontal or drooping.
- d. The **Ancient** trees, 250 + years, have very heavy trunks, natural dead wood, open wounds, scars, mature bark and a crown which is broader and more rounded. It is just surviving with short branches, understated foliage close to the trunk. The trunk may be split or it may be squat and robust; almost as wide as it is high.

V. HARMONY in the DISPLAY of BONSAI

- A. In the **display** of bonsai, concepts of understatement, space, perspective, visual movement, rhythm, balance, and natural appearance apply in order for there to be harmony.
 - 1. **Focal point.** Each display and each segment of a display should have a bonsai as a focal point.
 - 2. **Empty space** on a display table is as important as space which is filled. The empty spaces in front of, between and behind the displayed items establish perimeters or borders to assist the eye in remaining within the viewed grouping.
 - 3. The **background** should be neutral. A cluttered background is distracting and makes it difficult for the eye to follow the line in the nearer image.
 - 4. **Triangulation** is not only considered in the vertical dimension but also in the horizontal plane on the surface of the display table.
 - 5. **Stands** must be in proportion to the bonsai being displayed and should complement the color, shape or texture of the item being displayed.
- B. Most of these concepts of harmony involving the display of bonsai apply to the outdoor display also. Plants should be

thoughtfully grouped, should have adequate empty space, should not be lined up side by side and should have a relatively non-distracting background.

VI. SUMMARY

- A. A harmonious bonsai is one whose lines, shape, size, container and display environment blend together to present a beautiful coordinated scene.

- B. Various elements, concepts and conditions contribute to the existence of harmony in a given composition. They include: understatement, perspective, line and its continuity and rhythm, balance, the soul and the spirit of the creation, natural appearance, and its display.

FORMAL UPRIGHT STYLE BONSAI

Chapter 3

NOTES

I. OBJECTIVES

As a result of studying this section of the *Intermediate Bonsai Syllabus*, viewing audio visual presentations, or participating in other activities provided by an instructor, you will be able to:

1. Describe the principal identifying feature of the several types of **upright style** bonsai which distinguishes upright style bonsai from other bonsai styles.
2. Define and describe the *formal upright* style of bonsai.
3. Using an appropriate stock plant, create a *formal upright* style bonsai in training.

II. GENERAL

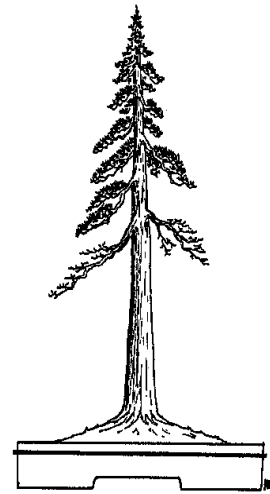
A. There are several reasons for identifying a bonsai by a named style:

1. Naming a style provides a graphic description of the tree.
2. When one person is talking to another about a bonsai and identifies its style, a mental-visual image of that style is evoked in the mind of the listener.
3. A style provides a direction of purpose when structuring a bonsai.
4. It is a shortcut to understanding.

- B. A bonsai is usually classified by the tree's most prominent design characteristic. One may be classified according to its:
1. Trunk angle or lean (its attitude), which may be *upright*, *slanting*, or *cascading*, and/or the number of trunks such as *two trunks*, *clump*, or *forest*.
 2. Roots such as *roots over rock* style or *exposed root* style.
 3. Branches based on shape like a *broom* style, *weeping* style, or *windswept* style.
 4. Unusual characteristics such as dead wood or miniature.
- C. The straight, vertical trunk *formal upright* style bonsai is one of several styles which have relatively upright trunks. The other upright styles are:
1. *Informal upright* bonsai which grow vertically and have curved trunks. (See Introduction to Bonsai - A Course Syllabus and Chapter 4 of this Syllabus.)
 2. *Slanting* style bonsai which are upright but lean to one side or another. (See Chapter 5 of this Syllabus.)
 3. *Broom* style bonsai have a short, fat and straight trunk from which branches grow predominately from its top, giving it the appearance of an upside down broom. (See Chapter 6 of this Syllabus.)
 4. *Literati* style bonsai have a relatively tall and slender trunk with few branches. (See Chapter 13 of this Syllabus.)

III. FORMAL UPRIGHT STYLE BONSAI DEFINED

- A. The *formal upright* style bonsai is almost always a conifer depicting the stately redwood, cryptomeria or pine found in nature. It imparts a feeling of ancient age and strength.
- B. The **essential attribute** in the *formal upright* bonsai is the use of straight lines within the design. It has a straight trunk with clear taper from base to apex. The apex is directly above its base. It is a style of bonsai which presents an image of strength and power.



Illus. 3-1

C. Trunk

1. Is absolutely straight when viewed from the front and from the side.
2. There is significant taper from base to apex; thicker at the base, thinner at the top.
3. The apex does not lean towards the front as it does in other styles.
4. Surface roots radiate evenly around the base of the trunk.

D. Branches

1. Conifers have downward sloping branches, as on a sequoia, and are relatively short. Their limited length accentuates the trunk, giving it the appearance of being taller than it is.
2. Deciduous trees may have either downward sloping or horizontal branches.
3. As branches approach the top they may become more horizontal and those in the crown may rise slightly.

E. Container

1. Is usually oval or rectangular and shallow to emphasize the trunk with straight lines and feet which are not ornate.
2. Placement of the tree within the container, slightly offset to one side and to the rear, is noticeable because of the economy of other elements.

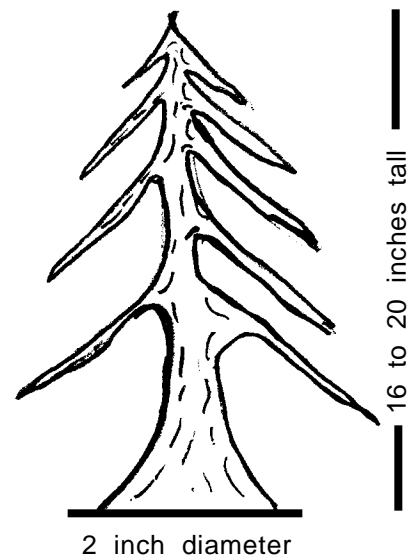
IV. STYLING THE TREE

A. Roots

1. Several earth-clinging surface roots should be visible from the front.
2. Wire, bend and position roots as necessary to avoid any coming directly toward the front of the tree and to distribute others about the base of the tree.

B. Trunk

1. Is vertical without any side leaning. Wire and bend as necessary to straighten. If the trunk cannot be restyled with wiring, consider applying a bending device called a bonsai **jack** to correct unwanted bends. If none of the above are appropriate, consider training the material in another style.
2. The **relationship** of trunk diameter to trunk height creates either an impression of great age or relatively immaturity. Adjust the height of the trunk to get a ratio of trunk diameter at the base to 8 or 10 of height of the trunk.
3. May be hollowed out with any nearby branches styled as dead wood.



Illus 3-2

C. Branches

1. **First branch** should be positioned above the base of the tree at a point $\frac{1}{3}$ to $\frac{1}{2}$ the height of the trunk, depending on the style and slant of the branches.
2. First branch should be the longest and the thickest.
3. **Second branch** should be shorter than the first, higher and on the opposite side of the tree.
4. **Space** between successive branches should be smaller toward the apex to give the illusion of great height.
5. No branch should be directly above another.
6. **Placement and spacing** of branches is more important than in most other styles of bonsai. The sparseness of the branches and the high visibility of the trunk emphasize the branch-trunk junctures.
7. Branches should be **straight**, not serpentine, to complement the straight trunk.
8. **Front branches** are necessary for conifers, but must be short.
9. Each branch should be a **different length**, usually getting shorter as they get closer to the top.
10. Branches should be **angled downward** with the tip flaring slightly upward.
11. **Outline** of the tree should be an asymmetrical triangle.
12. **Apex** may be rounded or pointed, live or dead wood.

V. POTTING THE TREE

- A. Prepare the correct size and style container.
1. Generally an oval or rectangular unglazed container with little or no ornamentation is best to harmonize with the style of the tree.
 2. A formal upright bonsai with a tall and thin trunk may look best in a shallow, round container.
 3. Its **depth ratio** should be between 1 and 2 times the diameter of the trunk at its base.
 4. **Container length** should be equal to $\frac{2}{3}$ the height of the tree.
 5. Container may be a slab.
- B. Prepare appropriate soil mix.
- C. Install **screening** over drain holes and one or two tie down wires to hold the tree securely in the pot.
- D. Decide on the tree's **location** in the pot. The base of the trunk should be slightly off-center to the rear and to the left or right of center, depending on branch location and visual mass. Place the greater mass over the wider expanse of soil.
- E. **Remove soil** and roots from the rear and from the left or right side depending on placement.
- F. Remove soil and roots from the remainder of the root mass to permit placement in the pot.
- G. Remove no more root mass than necessary to get the tree comfortably into the new bonsai container.

- H. Put a thin layer of soil in the bottom of the pot and a small **mound of soil** at the point where the base of the trunk will be located. Adjust the height of the mound so that the finished soil surface will slope away from the trunk toward the container edges.
- I. Position the tree in the container to the rear of the center line and either left or right of the center, wiggle the root ball into the soil and secure the tie down wire(s).
- J. Complete the potting process as described in Chapter 9, Introduction to Bonsai - A Course Syllabus.

Note: Potting details discussed above will apply to most of the other styles described later and will not be repeated.

VIII. SUMMARY

- A. The formal upright style bonsai is defined as one having a straight vertical trunk with its apex directly above its base.
- B. The trunk is tapered, the branches are straight, relatively short and angled downward and the silhouette is asymmetrical.
- C. The container is usually shallow and oval or rectangular in shape.

INFORMAL UPRIGHT STYLE BONSAI

Chapter 4

NOTES

I. OBJECTIVES

As a result of studying this section of the *Intermediate Bonsai Syllabus*, viewing audio visual presentations, or participating in other activities provided by an instructor, you will be able to:

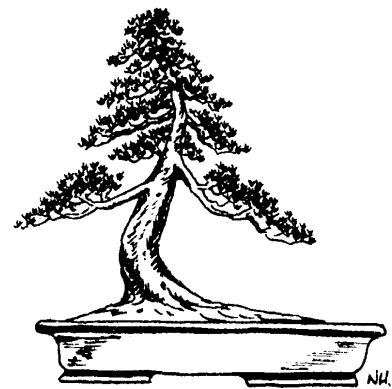
1. Describe the principal identifying features of *informal upright* style bonsai which distinguish it from other bonsai styles.
2. Using an appropriate stock plant, create an *informal upright* style bonsai in training.

II. GENERAL

- A. The *informal upright* style bonsai is one of several styles having relatively upright trunks. It is also the style tree taught in Introduction to Bonsai - A Course Syllabus.
- B. The *informal upright* style bonsai is the most common style in which trees are designed. It imparts gentle rhythmic movement, balance and grace.

III. INFORMAL UPRIGHT STYLE BONSAI DEFINED

- A. An *informal upright* style bonsai is:
 1. One in which the trunk emerges from the soil at an angle, curves one or more times between the base and the apex, and has an apex which is above its base when viewed from the front.
 2. The most popular shape of bonsai, especially for pine, juniper, oak and other conifers. It is also a good style for pomegranate, maple, plum and apple.



Illus. 4-1

B. Trunk

1. As seen from the front, has a **curved trunk** which is curved enough to be interesting, but not exaggerated.
2. **Tapered** from a wide base to a narrow apex.

C. Branches

1. **Angle downward** at varying degrees below the horizontal to give the appearance of age.
2. Are **curved** (serpentine) to complement the style of the trunk.
3. **Side branches** are usually on the outside of a curve of the trunk.
4. **Apex** is above the base of the trunk.

D. Container

1. Rectangular or oval.
2. Glazed or unglazed depending on species of tree.

IV. STYLING THE TREE

A. Roots

1. Remove **surface soil** down to the relatively thick radiating roots.
2. **Surface roots** should radiate in several directions but be strongest on the side away from the direction in which the lower trunk leans. Wire and reposition roots as necessary.

B. Trunk

1. Study the shape, curvature, defects, branch location and visual movement of the trunk and decide upon the front to be used in styling the tree.
2. Adjust **angle** at which the trunk emerges from the soil so that it rises at about a 25 to 35 degree angle from the soil to the first branch.
3. The **first curve** should bend in the direction opposite from which the lower trunk leans. If at ground level the trunk leans toward the left, the first curve should bend back toward the right to reestablish the tree's balance.
4. The **radius** of the curves should become less higher up on the trunk. Movement should be graceful and not monotonous.

C. Branches

1. The **lowest branch** is the heaviest branch, projects either to the left or to the right when viewing the tree from the front, never goes towards the rear or front and is about one third the way up the tree.
2. The **second lowest** branch is the second heaviest branch, extends either to the side opposite the lowest branch, or to the rear of the tree, and is not a bar branch.
3. The **third lowest** branch is the third heaviest branch, extends to the rear or to the opposite side from that of the lowest branch, depending on placement of the second branch, and again avoids being a bar branch.
4. Create an apex either from an existing apex or by removing the old apex and by wiring a front branch upright.

5. Identify and style the remaining branches between the lower three and the apex.

V. POTTING THE TREE

- A. Prepare the correct size and style container and assemble the appropriate soil mix. Generally an oval or rectangular container is best. (See Chapter 7, "Selecting a Container" in Introduction to Bonsai - A Course Syllabus for a discussion on container selection.)
- B. Decide on the tree's location in the pot.
 1. Position it in the container to the rear of the center line and either left or right of the center.
 2. In deciding whether to place it to the left or to the right consider the location of the lowest branch which is usually the longest branch. An alternate consideration may be the selecting the most massive side of the tree rather than the lowest branch.
 3. If the longest branch or most massive side is on the right, position the tree to the left of center. Vice versa if the longest branch or most massive side is on the left.
- C. Remove soil and roots from the rear and from the left or right side depending on placement.

Note: Details on potting are discussed in the chapter on formal upright style bonsai and will not be repeated here.

VI. SUMMARY

- A. The *informal upright* style bonsai is one in which the trunk emerges from the soil at an angle, curves one or more times between the base and the apex, and has the apex above the base of the tree.

Informal Upright Style Bonsai, Continued

NOTES

- B. Its branches angle downward, are curved to complement the style of the trunk and are usually on the outside of a curve of the trunk.
- C. The container is usually rectangular or oval in shape and may be glazed or unglazed depending on species of tree
- D. The tree is positioned in its container to the rear of the center line and either left or right of the center depending upon the location of the lowest branch or other characteristics which provide weight and mass.

SLANTING STYLE BONSAI

Chapter 5

NOTES

I. OBJECTIVES

As a result of studying this section of the *Intermediate Bonsai Syllabus*, viewing audio visual presentations, or participating in other activities provided by an instructor, you will be able to:

1. Describe the principal identifying features of *slanting* style bonsai which distinguish it from other bonsai styles.
2. Using an appropriate stock plant, create a *slanting* style bonsai in training.

II. GENERAL

- A. The *slanting* style bonsai is one of several styles of bonsai which have relatively upright trunks.
- B. The *slanting* style bonsai depicts a tree in nature which
 1. May have been pushed over at an angle by a fallen tree, by a snow or rock slide, or by other environmental factors.
 2. May have grown in a harsh environment of wind-torn shorelines or rugged mountains where the winds generally come from a single direction. This *windswept* style tree may be the result of the wind alone or salt spray and/or sand combined with the wind.
 3. May have grown away from shade and toward the light.

Slanting Style Bonsai, Continued

NOTES

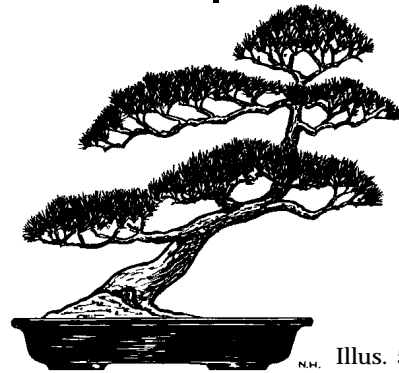
- C. Slanting objects are inherently off balance. The *slanting* style bonsai achieves asymmetrical balance through branch placement.

III. SLANTING STYLE BONSAI DEFINED

- A. The *slanting* style bonsai is one having either a straight or curved trunk with the apex above and to the left or to the right of the base of the trunk.

B. Trunk

1. Is a slanted version of either a formal or informal upright trunk. It should either be straight or with well balanced curves.
2. Emerges from the soil at an **angle** and which leans between 10 and 45 degrees from the vertical to either the left or right. The degree of lean is arbitrary and is determined by your ability to maintain visual balance.
3. Is **tapered** from a wide base to a narrow apex.
4. The apex leans slightly toward the front.



N.M. Illus. 5-1

C. Branches

1. May be horizontal or angled downward.
2. Are straight or curved to complement the style of the trunk.
3. Located on both sides and on the rear. Side branches should generally be located on the outside of the trunk's curves and be placed to counteract the lean.

D. Roots

Wire and position the roots so that the longer roots are on the side away from the lean.

Slanting Style Bonsai, Continued

NOTES

E. The container

1. May be rectangular or oval.
2. The tree is placed in the container so that it is offset toward the side away from the direction of the slant.



Illus 5-2

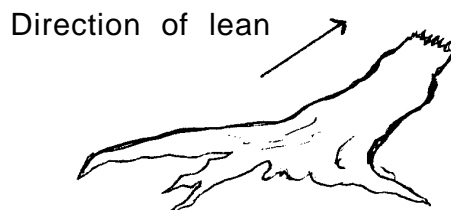
IV. STYLING THE TREE

A. Roots

1. Remove **surface soil** down to relatively thick radiating roots.
2. There should be strong and mature **surface roots** to give a feeling of strength, stability and endurance.
3. Strong roots should be apparent on the opposite side of the slant of the trunk to physically and aesthetically counter balance the lean of the tree. Wire and place roots as necessary.

B. Trunk

1. Study the shape, curvature, defects, branch location and visual movement of the trunk and decide upon the front to be used in styling the tree.
2. Adjust the **attitude** (the angle at which the trunk emerges from the soil) so that it emerges at about a 25 to 45 degree angle. The angle should be less if the trunk is straight rather than curved.

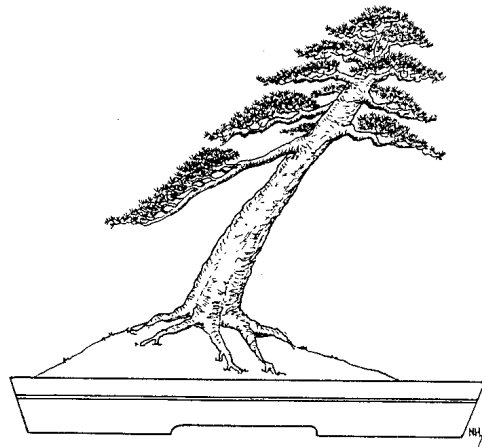


Illus 5-3

3. If the trunk is curved, the **first curve** should bend in the direction opposite from which the trunk leans. If at ground level the trunk leans toward the right, the first curve should bend back toward the left to reestablish the tree's balance.
4. The trunk may continue at a slant to the apex or it may turn upward.

C. Branches

1. The **lowest branch** is the heaviest branch and should be on the opposite side of the slant of the trunk. This is necessary to counter balance the lean of the trunk. The tree should not appear to be about to topple over.
2. The **second branch** is the next heaviest branch and should usually project toward the rear to provide an immediate sense of depth.
3. The **third branch** is the third heaviest branch and extends in the direction of the lean.
4. Branches extending away from the direction of the lean are usually longer than comparable ones on other style bonsai.
5. Create the new apex either from an existing apex or by removing the old apex and wiring a front branch upright.
6. Identify and style the remaining branches between the lower three and the apex.



Illus. 5-4

Slanting Style Bonsai, Continued

NOTES

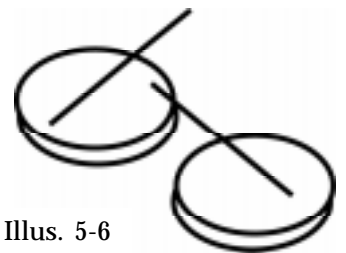
7. In a *windswept* bonsai
 - a. The **angle of the trunk** and lines of the branches should be arranged to create a sense of direction, movement, rhythm and tension.
 - b. The use of conifers is usually best.
 - c. The **foliage mass** should be relatively sparse to assist in defining the branch structure. It should be kept trimmed and not allowed to become bushy and should be kept away from the trunk line.
 - d. Branches may cross the trunk.
 - e. *Jin* (dead apex) and *shari* (dead branch) are highly desirable.
 - f. Planting in crescent shaped or shallow pots, on slabs or on rocks are usually best. These forms suggest an irregular coast line where prevailing winds have molded the tree.



Illus 5-5

V. POTTING THE TREE

- A. Prepare the correct size and style container and assemble the appropriate soil mix.
- B. Decide on the tree's **location** in the pot.
 1. Position it in the container to the rear of the center line and either left or right of the center.
 2. In deciding whether to place it to the left or to the right consider the slant of the trunk. Position the tree so that the slanting side of the tree, the side in the direction of the slant, is above the largest soil area. If the tree slants to the right, plant it toward the left in the pot.



Illus. 5-6

- C. Remove soil and roots from the rear and from the left or right side depending on placement.

Note: Details on potting are discussed in the chapter on formal upright style bonsai and will not be repeated here.

VI. SUMMARY

- A. The *slanting* style bonsai is one in which the trunk emerges from the soil at an angle, leans to one side or the other, and has the apex above and to the left or right of the base of the tree.
- B. It has either a curved or a straight trunk which is tapered from base to apex.
- C. Its branches are horizontal or are angled downward. They are shaped to complement the style of the trunk, and when the trunk is curved, are usually on the outside of those curves.
- D. The container is usually rectangular or oval and may be glazed or unglazed depending on species or style of tree. *Windswept* styles may have unique containers.
- E. The tree is positioned in its container to the rear of the center line and either left or right of the center depending upon the direction in which the trunk leans.

BROOM STYLE BONSAI

Chapter 6

NOTES

I. OBJECTIVES

As a result of studying this section of the *Intermediate Bonsai Syllabus*, viewing audio visual presentations, or participating in other activities provided by an instructor, you will be able to:

1. Describe the principal identifying features of the *broom* style bonsai which distinguish it from other bonsai styles.
2. Using appropriate plant material, create a *broom* style bonsai in training.

II. GENERAL

- A. The *broom* style bonsai appears as a juvenile deciduous tree in nature. They are usually found in locations protected from harsh environments.
- B. The *broom* style bonsai is one of several styles which have relatively upright trunks. It is a variation of the *formal upright* style bonsai.

III. BROOM STYLE BONSAI DEFINED

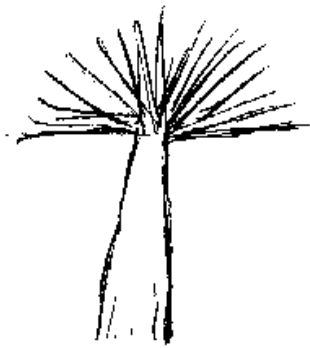
- A. A *broom* style bonsai:
 1. Has a straight, vertical trunk with a foliage mass like an upturned broom.
 2. In both bonsai and in nature, this style is usually created from deciduous trees. Zelkova and Chinese elm species make good *broom* style bonsai.



Illus 6-1

B. Trunk

1. Is absolutely straight when seen from the front and usually is vertical without any slanting or leaning.
2. It may have one of several configurations.



Single trunk



Split trunk



Multiple trunks

Illus 6-2

3. Surface roots radiate fairly evenly in several directions.

C. Branches

1. Subdivide into a fine tracery, reduce in diameter, and incline from the vertical as they approach the perimeter of the foliage mass.
2. Branch distribution is secondary to the overall effect.
3. Dead branches do exist on *broom* style trees in nature, but are not advisable on bonsai. This style is attempting to portray a smooth, rounded, soft profile; a dead branch would be counter to this.

D. The container is usually round or oval and shallow to emphasize the trunk.

IV. STYLING THE TREE

A. Roots

1. Several earth-clinging surface roots should be visible from the front. None should come directly toward the front of the tree. The location of roots may be adjusted by wiring and bending them as is done with branches.
2. Should be well established because of the size of the foliage mass in relation to the trunk diameter. A poor root formation would make the tree appear unstable.

B. Trunk

1. Select straight trunk plant material with thickness ranging from 1/2" for miniatures to 3" - 4" in diameter for larger bonsai.
2. With a healthy tree and in the early spring, decide on the final overall height which the bonsai will be allowed to attain. Then stump it (cut it off) to about a third of its proposed height. New branches will begin to grow from the stumped area.

C. Branches

1. Tightly wrap the upper portion of the trunk with raffia or monofilament binding material to prevent unsightly bulging as new branches develop. Remove the wrapping after 1 - 2 years.
2. As the new branches begin to develop, select 3 - 5 as the new leaders and remove the rest.
3. Wire or tie these new leaders so they are at a 30 - 45 degree angle from the vertical.
4. During the first year of training allow relatively free growth in order to develop girth on the new leaders.

5. The following spring and prior to the leaves emerging, prune to reduce the length of the new leaders to only 2 - 5 internodes, depending on the height of the tree and the length of the internodes. Another rule of thumb would be to cut the leaders back so they are the same length as the main trunk.
6. Remove buds facing a direction in which branches are not wanted, especially those growing in towards the center of the tree. Branches may come towards the viewer, but should not overly obscure the trunk line.
7. Periodically thin the foliage mass to allow light into the tree and to keep the branches healthy.
8. The process of leader and branch training takes several growing seasons before the tree appears to be an acceptable *broom* style bonsai.
9. An alternative method of developing branches is to begin with a seedling.
 - a. Tie the seedling to a straight stick to insure development of a straight trunk.
 - b. At the beginning of the second growing season, stump it at about a third of its intended ultimate height.
 - c. Allow the top three buds to develop, preferably at different levels and in different directions. These will be the leaders in the apex of the future bonsai.
 - d. Prune to stop vertical growth of the leaders when they are about the same length as the major trunk below.
 - e. Develop shape and ramification by pruning and wiring.

V. POTTING THE TREE

- A. Prepare the correct size and style container
 - 1. Generally a round or oval shallow container is best.
 - 2. Its depth should be between 1 and 2 times the diameter of the trunk at its base.
 - 3. Container may be a slab.
- B. Decide on the tree's location in the pot. The base of the trunk may be slightly off-center to the rear and to the left or right of center, or closer to the center depending on branch location and visual mass.
- C. Prepare appropriate soil mix.

Note: Details on potting are discussed in the chapter on formal upright style bonsai and will not be repeated here.

VI. SUMMARY

- A. The *broom* style bonsai is defined as one having a straight vertical trunk with a foliage mass which looks like an upside down broom.
- B. Unlike many other style bonsai in which branching and the apex are designed by simply modifying existing material, branching and the apex on the *broom* style bonsai have to be developed in a totally different fashion. This takes time; there is no such thing as an "instant" *broom* style bonsai.

SEMI-CASCADE STYLE BONSAI

Chapter 7

NOTES

I. OBJECTIVES

As a result of studying this section of the *Intermediate Bonsai Syllabus*, viewing audio visual presentations, or participating in other activities provided by an instructor, you will be able to:

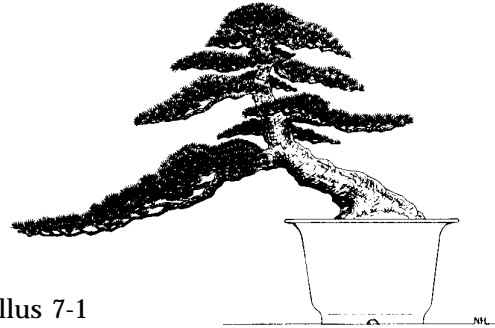
1. Describe the principal identifying features of *semi-cascade* style bonsai which distinguish it from other bonsai styles.
2. Using an appropriate stock plant, create a *semi-cascade* style bonsai in training.

II. GENERAL

- A. A *cascade* style bonsai is one in which a major feature extends below the lower rim of the pot.
- B. A *semi-cascade* style bonsai is one in which the major cascading feature extends below the top rim of the pot but does not extend below the bottom of the pot.
- C. The *semi-cascade* style bonsai may incorporate one or more of the characteristics of an *informal upright*, a *slanting* and a *cascade* style tree.
- D. It depicts a tree in nature growing on a mountain top with all or a part of it hanging over the edge.

III. SEMI-CASCADE STYLE BONSAI DEFINED

A. The *semi-cascade* style bonsai is one in which there is an *informal upright* or *slanting* style trunk whose trunk, or unusually long first branch, cascades below the rim of the pot but not below the base of the pot.



Illus 7-1

B. Trunk

1. May be in the *informal upright* style with a **semi-cascading branch**.
2. May be **extremely slanted**, extending to the right or to the left over the edge of the container and then cascades below the top rim of the container but not below the bottom of the pot.
3. **Tapered** from a wide base to a narrow apex.

C. Branches

1. On the trunk in the *informal upright style semi-cascade* bonsai, the first branch is usually long and cascades below the rim of the pot but not below the base of the pot. The remainder of the branches are as on an *informal upright* style bonsai.
2. On the **extremely slanted** style the first branch is often a rear branch and the remainder of the branches project to the front and to the rear.

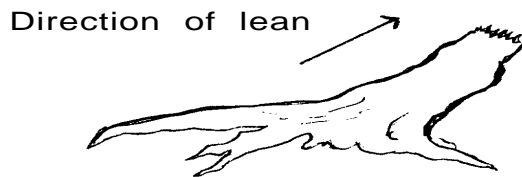
D. Container

1. The **container** should be relatively deep and may be round, square, octagonal, hexagonal, or a deep cascade.
2. The container may be glazed or unglazed depending on the species of tree.

IV. STYLING THE TREE

A. Roots

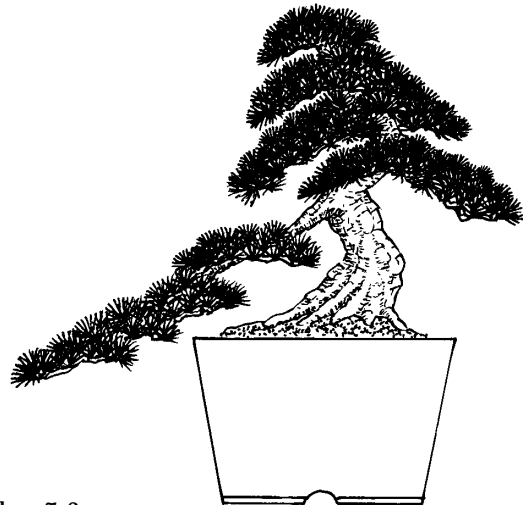
1. Remove **surface soil** down to relatively thick radiating roots.
2. **Surface roots** should radiate in several directions but should be strongest on the side away from the direction of the lean.



Illus 7-2

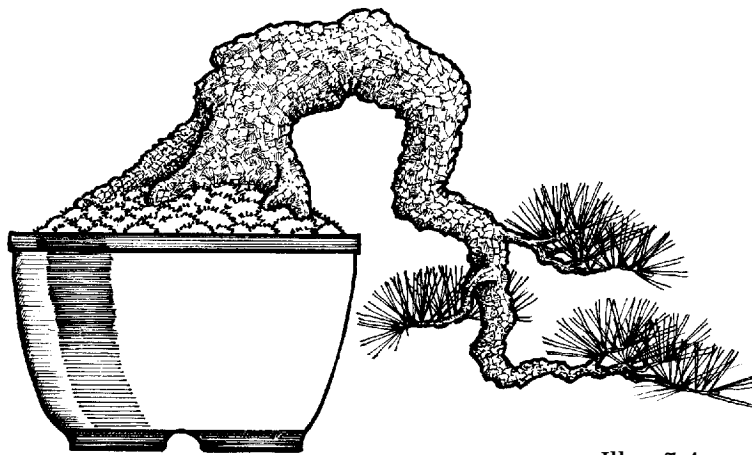
B. Trunk

1. On an *informal upright* style bonsai with a **semi-cascading branch**:
 - a. The curved trunk should emerge from the soil at an angle.
 - b. The **front** of the tree must have either the semi-cascading branch to the right or to the left. Which of the two sides is selected as the front depends on the trunk's other characteristics and branching.
 - c. The radius of the trunk's curves should become less higher up on the trunk.



Illus 7-3

2. On an the **extremely slanted** *semi-cascade* style tree:
 - a. The curved trunk should emerge from the soil at an extreme angle toward the side of the container over which it cascades.
 - b. In the vicinity of the lip of the container, the trunk arcs downward, below the lip of the container, and then turns parallel to the table or bench on which it is placed.



Illus 7-4

C. Branches

1. On an *informal upright* with a **semi-cascading branch**:
 - a. The semi-cascading branch should be the lowest and heaviest branch. It should extend at about a 45 degree angle to approximately midway between the rim and base of the pot. The tip should flare upward.
 - b. The remainder of the branches are positioned and styled as on an *informal upright* style bonsai.
2. On the **extremely slanted** tree:
 - a. The first branch should be a rear branch to give an

immediate sense of depth.

- b. Shorter branches may project toward the front.
- c. An upright apex may be created toward the tip of the cascade using a vertical growing branch. It is then styled as a small *informal upright* tree.

V. POTTING THE TREE

- A. Prepare the correct size and style **container** as described earlier, and assemble the appropriate **soil** mix.
- B. Decide on the tree's **location** in the pot.
 - 1. Position it in the container to the rear of the center line and either left or right of the center.
 - a. In deciding whether to place it to the left or to the right consider the location of the cascading element.
 - b. If the cascading element is on the right, position the tree to the left of center. Vice versa if the cascading element is on the left.
- C. Remove soil and roots from the rear and from the left or right side depending on placement.

Note: Details on potting are discussed in the chapter on formal upright style bonsai and will not be repeated here.

VI. SUMMARY

- A. A *semi-cascade* style bonsai is one in which there is either an *informal upright* or *slanting* style trunk whose trunk, or unusually long first branch, cascades below the rim of the pot but not below the base of the pot.
- B. It has a curved trunk, tapered from base to apex.

Semi-Cascade Style Bonsai, Continued

NOTES

- C. The container is relatively deep and may be circular, square or a deep cascade and may be glazed or unglazed depending on species of tree
- D. The tree is positioned in its container to the rear of the center line and either left or right of the center depending upon the location of the lowest branch or other characteristics which provide weight and mass.

CASCADE STYLE BONSAI

Chapter 8

NOTES

I. OBJECTIVES

As a result of studying this section of the *Intermediate Bonsai Syllabus*, viewing audio visual presentations, or participating in other activities provided by an instructor, you will be able to:

1. Describe the principal identifying features of *cascade* style bonsai which distinguish it from other bonsai styles.
2. Explain the difference between a *formal* and an *informal* cascade bonsai.
3. Using an appropriate stock plant, create a *cascade* style bonsai in training.

II. GENERAL

- A. A *cascade* bonsai is one in which the trunk begins growing upward but **abruptly turns downward** and cascades to a point below the bottom of the container.
- B. Bonsai created in the *cascade* style resemble trees growing on steep slopes in mountainous areas, in ravines, or along drainage ditches.
 1. As the tree grows, matures and gets heavier, gravity may have pulled it over, leaving its roots intact.
 2. The weight and volume of grape vines or other climbing vines may cause the tree to tip over.
 3. Soil around the roots may erode and the tree tips over and down a slope.



Illus 8-1

4. A snow, ice, mud or rock slide may knock the tree over, but its roots cling to the slope.

III. FORMAL CASCADE STYLE BONSAI DEFINED

A. The tree has one or more cascading trunk lines as well as a branch which has been trained as an **small upright tree**. The top of the tree, the base of the trunk, the bottom center of the container and the tip of the cascade are **in line** as viewed from the front.

B. Trunk and Branches

1. The small upright tree forming the apex should grow from the **top of the arch** of the cascading trunk, preferably from the highest point of the arch.
 - a. The **trunk** of the small upright tree forming the apex should be curved to complement the curves of the cascade.
 - b. The apex of this small upright tree should be over the cascade's center trunk/pot line.
 - c. Its **primary branches** should be positioned and trained as on an informal upright tree.
2. The initial angle of descent is about 45 degrees.
3. Further down the cascade the angle of descent may be as much as 90 degrees.
4. The tip of the cascade flares upward in search of the light.

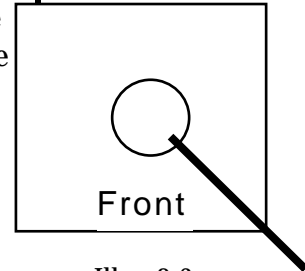


Illus 8-2

Cascade Style Bonsai, Continued

NOTES

5. The **front of a cascade** is located about 45 degrees to the left or to the right of the trunk where it passes over the lip of the container.
6. The **arch of the cascade** crosses the lip of the container at or near a corner and/or over a foot of the container.



Illus 8-3

C. The container should be deeper than it is long or wide.

IV. INFORMAL or VERTICAL CASCADE STYLE BONSAI DEFINED

- A. The tree has one or more cascading trunk lines with no upward growth.
- B. Trunk
 1. The base of the trunk, the bottom center of the container and the tip of the cascade are **in line** as viewed from the front.

2. The initial **angle of descent** is 45 to 90 degrees.
3. The angle of descent may change in the lower section of the cascade to achieve a proper balance point.
4. The **tip** of the cascade flares upward.
5. The **front** of a cascade is located about 45 degrees to the left or to the right of the trunk where it passes over the lip of the container.



Illus 8-4

6. The **arch** of the cascade crosses the lip of the container at or near a corner and/or over a foot of the container.

C. The container should be deeper than it is long or wide.

V. STYLING THE TREE

A. Selecting material

1. Select a species which will **tolerate growing downward**; one which grows prostrate (reclining, trailing and earth hugging) naturally such as a juniper procumbens nana.
2. The specimen selected should have a **strong branch** or trunk which can be grown in a prostrate attitude.
 - a. The trunk/branch should have a **sharp bend** a short distance above the roots, or be flexible enough that a sharp bend can be created.
 - b. The branch/trunk should have interesting **curves**.
 - c. The branch/trunk should have adequate **secondary branches** which can be trained as side branches.

B. Determine the tree's **front** by observing root structure and the main trunk line. The first left or right curve should be towards the viewer with the trunk line positioned about 45 degrees to the left or to the right as viewed from the front of the container.

C. If the bonsai is to be a **formal style**, select a branch near the top of the arch of the main trunk. This will be trained as the new upright-growing apex.

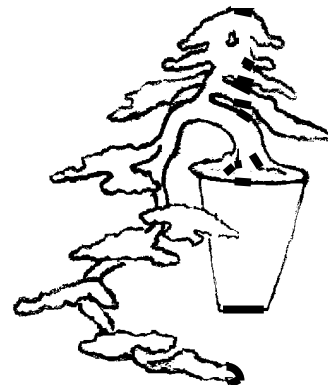
D. **Wire** and bend the main trunk to the desired position.

1. The **first bend** on the main trunk below the arch should be towards the center of the composition.
2. The **initial angle of descent** is between 45 degrees and 90 degrees depending on the style. However, the trunk will slightly serpentine in towards the container and out away from the container.

3. The trunk should **serpentine** to the left and to the right as it descends.
4. The **last curve** in the trunk should be towards the viewer and towards the center of the container.
5. **Multiple trunk** cascades will have proportions similar to those of a multiple trunk upright bonsai:
 - a. Vary in **girth**; the shorter being of smaller girth.
 - b. Vary in **length**, the shorter being either $\frac{1}{3}$ the length of the longer cascade, or $\frac{2}{3}$ the length of the longer cascade. (Never $\frac{1}{2}$ the length.)
 - c. The **junction** of the shorter cascade with the longer cascade should be relatively high in the composition.

E. Placement of **primary branches**.

1. Primary branches should **alternate** to the right and to the left of the trunk. Additionally, they should grow from the outside of the curves on the trunk.
2. There will seldom be any branches growing towards the **rear** of the composition. However an occasional short branch may be grown towards the front.
3. Primary and secondary branches will be wired so that they are **parallel** to the table/floor.
4. Several branches which are not being kept as live branches may be stripped and displayed as dead wood.



Illus 8-5

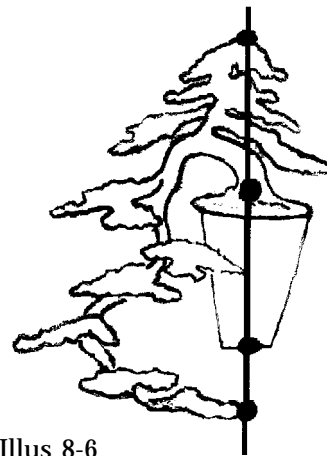
VI. POTTING THE TREE

A. Container selection

1. Cascade bonsai use **deep containers**. The depth depends on the size and style of the bonsai.
 - a. The **container depth** should be more than or less than, but not equal to, the length of the cascade.
 - b. Additionally, if there is an upright tree above the cascade, the **container depth** should be more than or less than, but not equal to, the height of that upright tree.
 - c. The container for a cascade may look best if it is shorter than the length of the cascading branch or shorter than the height of the tree when the tree is rugged looking with a heavy trunk. A **short stocky tree** looks best in a short stocky container.
 - d. A more **graceful, younger** or sparsely foliated cascade looks best in a taller container.
2. The **diameter** of the cascade container should be figured by totalling the following measurements:
 - a. The space which the anchor root takes up on the back side of the tree,
 - b. Plus the trunk diameter,
 - c. Plus the distance between the trunk and the cascading branch.
 - d. These three measurements equal the approximate diameter of the pot.

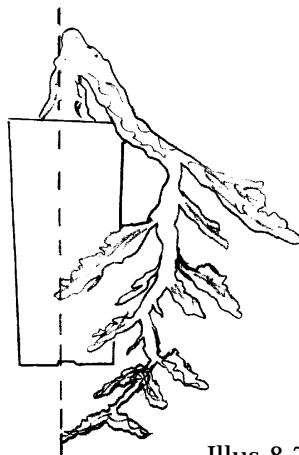
B. Potting

1. Position the **base of the tree** in the center of or slightly forward in the container.
2. Position the **apex in formal cascades** to align with the center line of the container.



Illus 8-6

3. Position the tip of the **arch in vertical cascades** to align with the center line of the container.



Illus 8-7

4. The trunk should not touch the **rim** of the container.
5. Position the **main descending trunk** over the corner/foot of the container. The trunk does not come down the front/center of the container because:
 - a. It would conceal the trunk's base and rootage.
 - b. The attractive first curve would not be shown to advantage.

- c. The surface of the container would be concealed.
 - d. It would be too symmetrical.
6. Complete the potting process.
- C. Maintenance. If the lower end of the cascade appears to be weak:
- 1. Each day after watering lay the tree and its pot on its side with the cascading branch facing up and horizontal.
 - 2. When fertilizing, **foliar feed** the lower end of the cascade.

VII. DISPLAYING CASCADE STYLE BONSAI

- A. Display on a **tall, slender stand** to complement the tree and the container's vertical line.
- B. Use a light and open stand to maximize the hanging effect.
- C. The **height** of the stand either should be shorter or taller than the height of the container, but not equal to the height of the container.

VIII. SUMMARY

- A. Various forces in nature can create a cascade style tree.
- B. A bonsai styled as a cascade may be a *formal* cascade with a branch trained as a small upright tree at the apex, or as an *informal* cascade bonsai with a bare apex.
- C. Cascade bonsai are planted in a container which is deeper than it is wide.

TWO TREE/TWIN TRUNK BONSAI

Chapter 9

NOTES

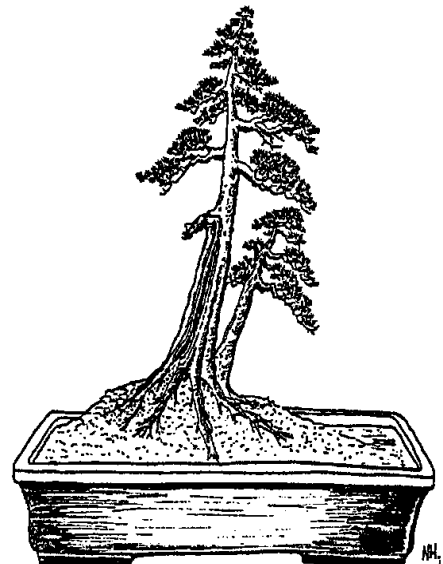
I. OBJECTIVES

As a result of studying this section of the *Intermediate Bonsai Syllabus* and viewing audio visual presentations, or participating in other activities provided by an instructor, you will be able to:

1. Describe the principal identifying features of the *two-tree* and *twin trunk* style of bonsai.
2. Using an appropriate stock plant, create a *two-tree* or a *twin-trunk* style bonsai in training.
3. Demonstrate the creation of a *two-tree* or a *twin-trunk* style bonsai.

II. GENERAL

- A. The *two trunk* and *twin tree* styles of bonsai are examples of a group planting in which **two trunks** of the same species material create a single composition.
- B. They depict a tree in nature which
 1. May have had a lower branch which, seeking sunlight, grew nearly vertical.
 2. May have had its main trunk split vertically, creating two upright trunks.
 3. May have had a seed begin growth at or near its base, which either grew as a separate plant or grafted itself to the larger tree.



Illus 9-1

III. TWO TRUNK AND TWIN TREE STYLES BONSAI DEFINED

- A. A *Two-trunk* style bonsai is one with two trunks on a common root system. A *twin-tree* style bonsai is one in which two trees of the same species are arranged in one composition.
- B. They may be created in most any primary style: formal upright, informal upright, windswept, literati, etc.
- C. The most obvious difference between *two-trunk* or *twin-tree* style bonsai and single trunk bonsai is the number of trunks.
- D. Other differences between the *two-trunk* or *twin-tree* style bonsai, which are not as apparent, involve styling techniques to be described below.

IV. STYLING A TWO-TRUNK OR TWIN-TREE STYLE BONSAI

- A. Trees which lack all around good branching may be desirable for this style because one can compensate for the shortcomings of the other.
- B. The two trunks of the composition are considered a **single unit** when selecting and placing branches and when forming the overall silhouette.
- C. The two trunks must **complement** each other. If one is straight, both should be straight. If one is curved, the other should be curved, etc. The direction of the curves or slants of the trunks should complement, and to some degree, mirror each other.



Illus 9-2

- D. The two trunks should be of **different height and girth**.
 - a. The shorter trunk should be either one third or two thirds the height of the taller trunk.
 - b. The shorter trunk should have a proportionally smaller girth.
- E. The **shorter trunk** of a *twin-trunk* composition should grown from the base of the larger rather than from a position higher up on the larger tree.
- F. The **first branch** should come from the lesser tree which is younger and still retains its lower branches. It normally is the longest branch.
- G. Select the **front** of the tree(s) as in other styles, but consider both trunks simultaneously when making decisions.

V. POTTING THE TREE(S)

- A. Prepare the correct style and size **container**. A slab may be used or a shallow glazed or unglazed oval or rectangular shaped container may be appropriate.
- B. Prepare the appropriate soil mix.
- C. Decide on the **location** in the pot for the tree(s).
 - 1. The **base** of the shorter tree of a *two-tree* composition should be as close to the base of the larger tree as possible. This is accomplished by removing a wedge of roots from the larger tree's root ball and fitting the smaller tree's reduced root ball snugly into the opening.
 - 2. The shorter and smaller trunk/tree should be planted **to the rear** of the larger trunk for better perspective of depth. If this is an unsatisfactory arrangement, then the lesser tree should be planted forward of the larger

Two Tree/Twin Trunk Bonsai, Continued

NOTES

tree. Their bases should not be **equal distance** from the viewer as seen from the front.

3. Whether the tree is placed to the left or to the right in the container depends on the overall silhouette created by both trunks. The rule usually applies that the **greater soil space** is located under the greater spread of foliage mass.

Note: Details on potting are discussed in the chapter on formal upright style bonsai and will not be repeated here.

VI. SUMMARY

- A. *Two-tree* and *twin-trunk* style bonsai may be in most any primary style.
- B. There are some special design considerations when styling *two-tree* or *twin-trunk* bonsai.

FOREST STYLE BONSAI

Chapter 10

NOTES

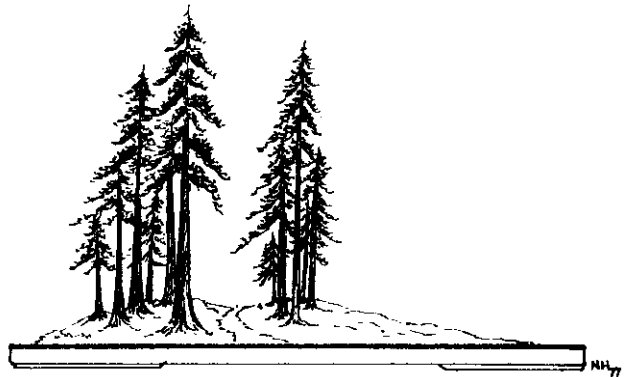
I. OBJECTIVES

As a result of studying this section of the *Intermediate Bonsai Syllabus* and viewing audio visual presentations, or participating in other activities provided by an instructor, you will be able to:

1. Describe the significant features of the *forest* style bonsai, to include:
 - a. The significance of the *height/girth ratio*.
 - b. The type of container which is most appropriate.
 - c. The importance of soil elevation.
2. Using appropriate stock plants, create a *forest* style bonsai in training.

II. GENERAL

- A. A *forest* or *group* style bonsai is one in which **three or more trees** are planted in a single container.
1. The forest planting may have any number of trees, however, the **number 4** should be avoided. In the Japanese culture the characters for the number 4 are the same as those for death. From a practical point of view, four trees present a symmetrical composition, and symmetry is to be avoided.



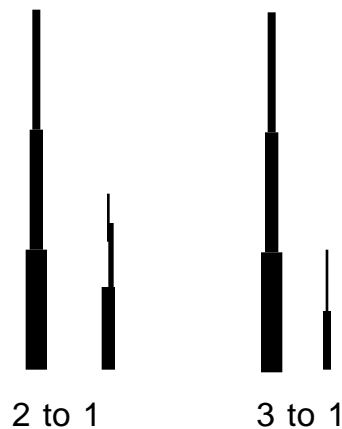
Illus 10-1

2. Forest bonsai plantings usually contain a **single species** of plant material.
 3. There should be a **single rhythm or style**; formal upright, informal upright, windswept, etc.
 4. Multiple tree plantings are a good use for thinner, younger material.
 5. One or more **rocks** may be used in the composition.
- B. Various artistic and aesthetic principals apply when creating a successful bonsai forest planting; type and size of container, the ratio of one tree to another, and the placement of the trees and rocks in relation to each other and to the container.

III. FOREST STYLE BONSAI DEFINED

A. Trunk Height/Girth Ratio

The tallest tree should have the thickest trunk. Every other tree in the group should be shorter and have a proportionately smaller girth. An example of the height/girth ratio may be clearly seen in a two tree planting in which the minimal ratio is 2 to 1 and the ideal ratio is 3 to 1 (the taller tree is 3 times taller and has a girth 3 times greater than that of the smaller one).



Illus 10-2

B. Number of trees

The **number** of trees should be an odd number, but other than having four, it is not a hard and fast rule.

C. Species of Plant Material

In most group plantings a **single species** of plant material should be used.

1. If **multiple species** are used, the viewer's attention tends to be diverted from consideration on the composition as a whole to concentration on segments. This is especially true if one element is stronger or more prominent than the rest.
2. Multiple species, while acceptable, may introduce unwanted variations in texture which would detract from the harmony of the composition.

D. Rock Selection

1. Traditional Japanese group plantings do not have **rocks**. *Saikei* is the term generally used when rocks are combined with plant material to create the visual illusion of a natural setting. However there is nothing to prevent you from using rocks in your forest planting if you feel they will enhance the composition.
2. Many of the principles of **selecting rocks** for use in a composition are the same as those used for the selection of the trees. The rocks should:
 - a. Be of the same style (flat, upright, rounded, sharp edges, etc.)
 - b. Be of the same color and texture.
 - c. Vary in size.

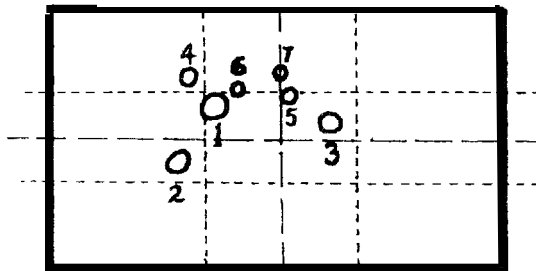
V. STYLING THE FOREST STYLE BONSAI

A. **Pre-planning** and attention to design requirements is probably more important in the construction of a group planting than any other type bonsai.

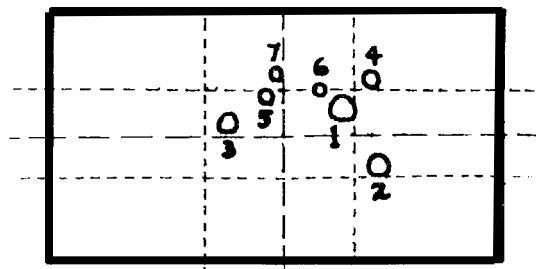
B. Focal point

Trees may be placed in either a right hand or in a left hand arrangement depending on the location of the **focal point**, the main point of interest. The tallest tree should be about one-third the way in from the side of the container.

Left hand arrangement



1 indicates largest tree
7 indicates smallest tree



Right hand arrangement

Illus 10-3

C. Arrangement Priority

The priority for arranging trees in a group planting is to first consider the trunks, next the roots and finally branching.

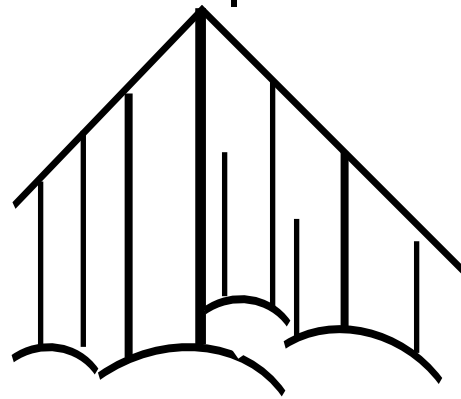
D. Elevation

The arrangement may be vertical as on a rock, or horizontal as in a pot or on a slab.

E. Outline or Silhouette

1. Single Group

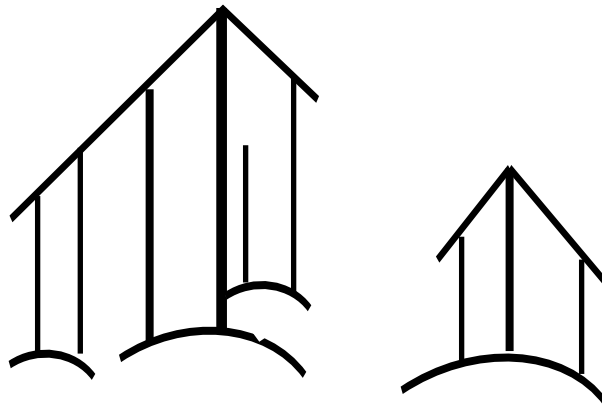
Trees may be grouped in a **single group** design which, when viewed from the front, presents a single outline in the form of a scalene triangle.



Illus 10-4

2. Double Group

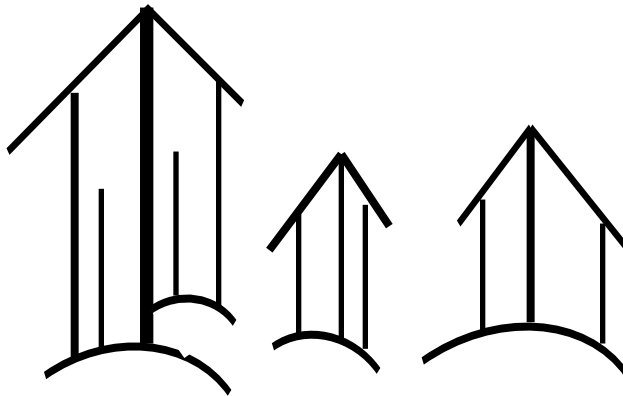
Trees may be grouped into **two separate groups**. The tallest tree is in the major group. Each group presents its own outline in the form of a scalene triangle.



Illus 10-5

3. Triple Group

- a. Trees may be grouped into three relatively separate groups; the major group, the secondary group and the minor group.
- b. In the opinion of most bonsai growers, harmony usually is achieved best if the minor group is between and to the rear of the two larger groups.



Illus 10-6

F. Perspective

1. **Perspective** in art is the showing of objects as they would appear to the eye with reference to distance and depth.
 - a. An example is creating an illusion of distance in a road, path, trail or stream by having it wider in the foreground than in the background to create the illusion of distance.
 - b. Another example is having smaller objects in the background, behind items in the foreground, to create the illusion of both distance and depth.
2. An individual close to the edge of a forest has a “near view” of that forest. In bonsai, the **near view** is created by planting:

- a. The tallest and heaviest trees near the foreground for emphasis.
 - b. The medium size trees in the central area.
 - c. The smallest trees in the background to complete the perspective of depth and distance.
3. An individual far away from the edge of a forest has a “distant view” of that forest. In bonsai, the **distant view** may be created by planting:
- a. The taller and heavier trees in the central area.
 - b. The smallest trees in both the foreground and in the background.
 - c. The medium size trees between the shortest and the tallest trees.

4. **Alignment of Objects**

Trees, and rocks if present, should be placed so that no three of them align on a straight line when viewed from the front and from the side.

5. **Brightness**

Objects which are brighter in color appear to be closer than those which are darker. To enhance the illusion of distance, plant the brighter plant material, including moss, toward the front of the composition.

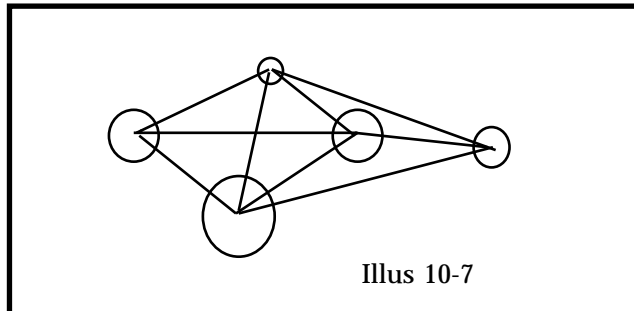
6. **Texture**

Coarser texture gives the appearance of nearness while finer texture conveys distance. To enhance the illusion of distance, use coarser material toward the front.

G. Scalene Triangle

1. Trunk Placement

Arrange the trunks of the trees to form a series of scalene triangles.



Illus 10-7

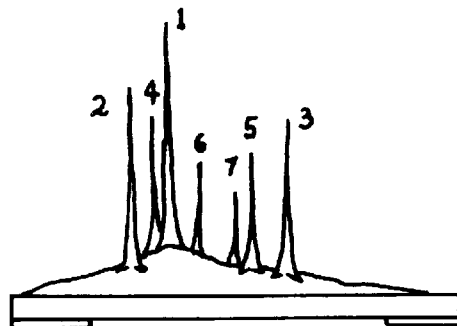
2. Branches

The **lowest branch** should normally be on the shortest tree with the smallest trunk. This will often form the long side of the scalene triangle which defines the overall shape of the planting.

H. Soil

1. Contour

The soil should be contoured so that the largest tree is planted highest.



Illus 10-8

2. Composition

The soil should be made of **materials** which are appropriate for the species tree being planted.

3. Slab Plantings

A **slab** has no sides. A dike made of **muck** or clay needs to be placed around the outer edge to prevent erosion of soil.

4. Rocks

- a. **Rocks** should not be placed on the soil surface. This creates a feeling of instability. Rocks in nature usually are partly underground. In a bonsai composition, a third to a half of most rocks should be under the soil to provide a degree of visual as well as physical stability.
- b. If a **path or stream** is to be part of the composition, rocks and gravel used should be of the same color and texture as others used.
- c. A path or stream should be wider toward the front and narrower toward the back of the composition. This provides an illusion of distance.
- d. The far end of a path or stream should not be visible from the front. It should disappear behind a rock, tree or mound. This also provides an illusion of distance but adds a bit of mystery to where it goes.

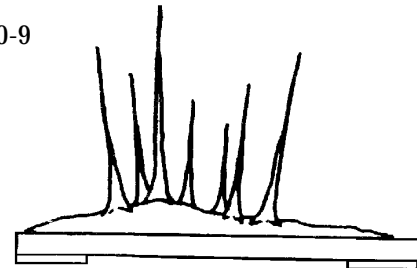
Forest Style Bonsai, Continued

NOTES

I. Attitude

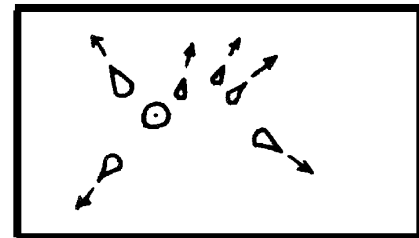
1. The **attitude** of a tree refers to its degree of verticality; upright, slanting, cascading, etc.
2. In a group planting, the largest and tallest tree usually is **vertical** while the others lean away from it.

Illus 10-9



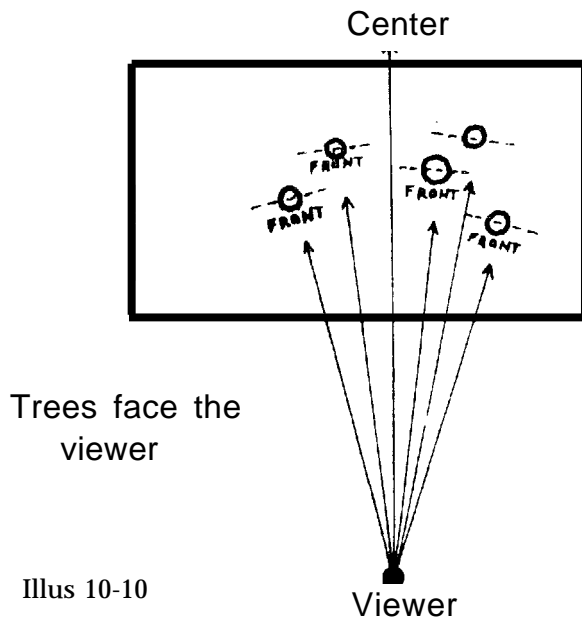
Front View

Top View



Trunks lean in the direction of the arrows

J. Front of each tree

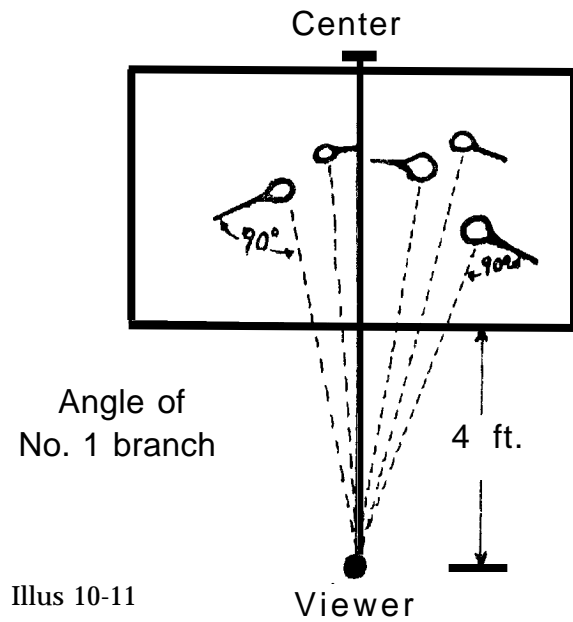


Illus 10-10

1. The **front** of each tree is based on the trunk line and on the placement of the branches.
2. The **front faces** the viewer which is not necessarily the front of the container.
3. The line of the front trees should form a shallow **concave arc** which visually invites the viewer into the scene.

K. Branches

1. The **lowest branch** on each tree should emerge at a right angle to the front of the tree.
2. The branches of one tree should not run into the branches on another tree. Branches which grow into the group are often eliminated.
3. Occasionally small trees with low branches may be planted in the background to give an illusion of depth and distance.



V. POTTING THE FOREST STYLE BONSAI

A. Pot

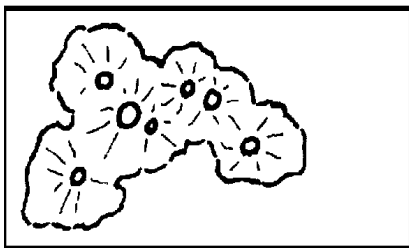
1. Regardless of shape, the container should be **shallow**.
2. Use a straight line **rectangular** shaped container for a group planting of formal upright trees.
3. An **oval** container may be used for informal, curved trunk trees in a group planting.
4. Containers for pines, junipers and other conifers should be unglazed terra cotta.
5. Flowering, fruiting and leaf color changing trees may be in glazed containers of subdued colors.

B. Slab

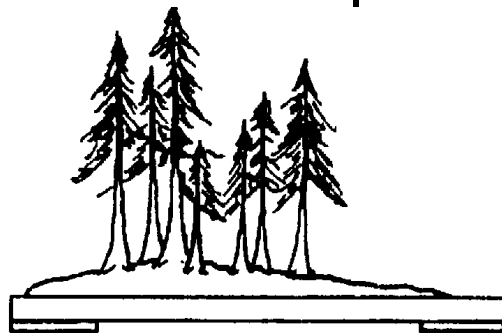
Plantings for which a natural appearance is emphasized may be on a slab.

C. Size

The container should be large enough so that the grove occupies no more than one-half of the area of the container.



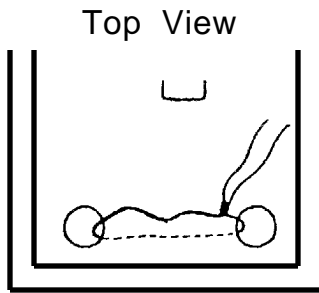
Top View



Front View

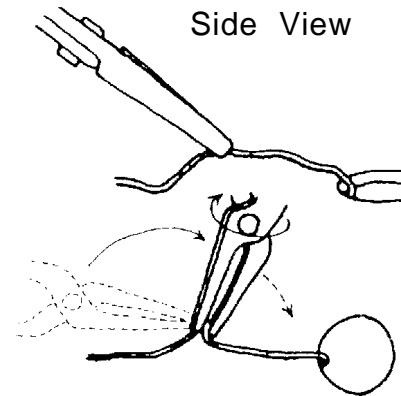
Illus 10-12

B. Most group planting containers have several **drain holes**, none of which may be exactly where the artist needs them for the proper alignment of tie down wires with the secured trees. Alternate anchor locations have to be created.



Illus 10-13

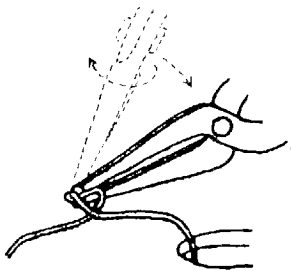
C. Pass a length of 20 gauge wire through two drainage holes and twist its ends together, leaving some slack. This wire will be used to **anchor** other wires which will secure the trees into the pot.



Top View

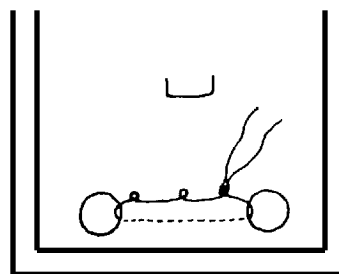
Illus 10-14

C. With pliers, twist one or two **loops** into the wire.



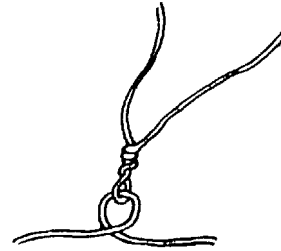
Side View

Illus 10-15



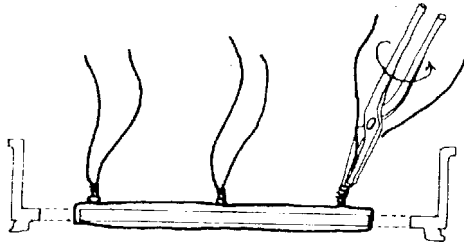
Top View

- D. Cut at least 12" lengths of wire which will be used to secure the trees into the container. Secure one wire to each loop made on the anchoring wire.



Illus 10-16

- E. Lightly **tighten** the anchor wire to the pot in order to make the tree tie down wires snug in the bottom of the pot.



Illus 10-17

- F. Repeat this process until there are tie down wires for each tree.

G. Replanting

When it is time to **repot** the arrangement, remove the grove planting as a single unit, trim its roots, add new soil and replace it in the same container.

VI. SUMMARY

- A. In order for a forest planting be artistic and have aesthetic value, all elements must be in proper scale, textures must complement each other, focal point(s) placed properly and the soil contour interesting an not static.
- B. Pre-planning and attention to design requirements is probably more important in the construction of a group planting than any other type bonsai.

RAFT STYLE BONSAI

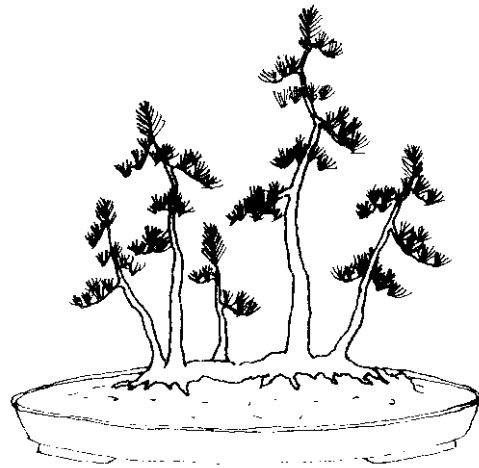
Chapter 11

NOTES

I. OBJECTIVES

As a result of studying this section of the *Intermediate Bonsai Syllabus* and viewing audio visual presentations, or participating in other activities provided by an instructor, you will be able to:

1. Describe circumstances in which the *raft* style would be found in nature.
2. Describe the three styles of *raft* bonsai (straight, sinuous and clump).
3. Using an appropriate stock plant, create a straight, sinuous or clump *raft* style bonsai in training.



Illus 11-1

II. GENERAL

A. A *raft* style may **occur in nature** when a tree because of wind, flood, landslide, avalanche, earthquake or other reason is knocked down and the trunk is flattened against the earth and possibly all or a portion of the trunk is covered with soil.

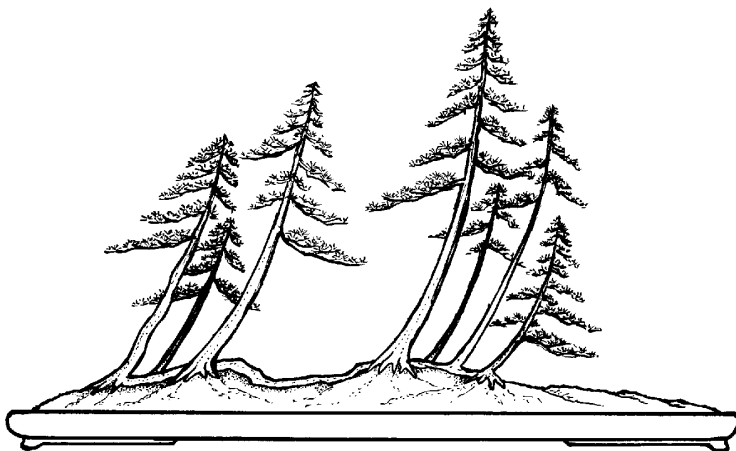
1. Trunk is not broken from the roots and the trunk and branches continue to receive sustenance from all or a part of the original root-system.
2. The branches on the top side of the horizontal trunk continue to grow and eventually develop as trunks, while roots form along the portions of the original trunk which was covered with soil. The original root system will usually atrophy and decay.
3. As the several new trees develop the original trunk

assumes the characteristics of surface or exposed roots.

- B. Another type of raft **occurring in nature** is the clump or sprout style in which multiple sprouts from a single root form trunks. Alternatively, several trees may have grown from the same place and have grafted themselves together.

III. RAFT STYLE BONSAI DEFINED

- A. One type of *raft* style bonsai is a **straight raft** in which a tree's relatively straight trunk is laid on its side in the soil. Its branches are trained to grow upright directly out of the original trunk. Each is then trained to appear to be individual trees.
- B. Another type is the **sinuous raft** in which a tree's original trunk is curved or twisted or wired and bent in a curving (sinuous) fashion and laid on its side in the soil. Its branches are trained upright to appear to be individual trees.



Illus 11-2

- C. Yet another type of *raft* style bonsai is the **clump raft** in which a plant grows as a clump with three or more trunks growing from a single root system. The bonsai may be styled with the branches growing vertically from a central location or the trunks may be trained horizontal in the

soil and then upright to appear to be individual trees. Bonsai artist Hal Mahoney of New York has termed this latter technique a **clraft** style. “Cl” for clump and “aft” for raft.

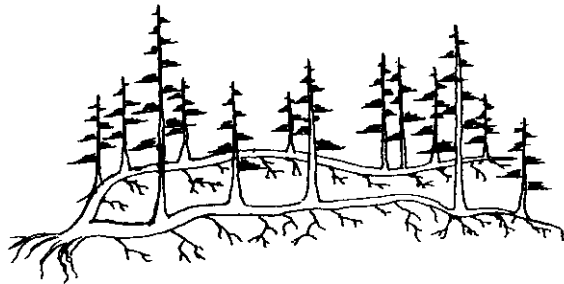
- D. In each of these types of *raft* style bonsai, the part of the trunk exposed to the soil develops roots. The original root ball is left on or, depending on the type raft, may be reduced or removed after the trunks/branches have generated enough of their own roots to support life.

IV. STYLING A STRAIGHT RAFT STYLE BONSAI

- A. **Junipers** do well as *raft* style bonsai. Select one which has a straight trunk and many branches on at least one side of the trunk.
- B. Determine how long the **horizontal trunk** will be and obtain a box, pot or nursery flat which is long enough.
- C. Remove all branches growing downward or originating on what is to be the **bottom** of the trunk. Also remove remaining branches which will not be used in the design.
- D. **Wire** each remaining branch.
- E. Remove the bark and cambium along the underside of the horizontal trunk. Dust all scarred areas with a **rooting hormone** powder.
- F. **Plant** into general purpose potting soil. Cover everything until only the upright branches are exposed. Secure the tree into the container with wire tie downs. Keep the horizontal trunk covered.
- G. Wire and style the **upright branches** to look like individual trees.
- H. As roots form on the underside of the horizontal branches, reduce the size of the original root ball.

V. STYLING A SINUOUS RAFT STYLE BONSAI

- A. Junipers do well as *raft* style bonsai. Select one which has a **curved trunk** or a trunk which can be bent into a series of curves. It should also have many branches on at least one side of the trunk.



Illus 11-3

- B. Determine how long the **horizontal trunk** will be and obtain a box, pot or nursery flat which is long enough. Remember to allow sufficient length and depth for the original root ball.
- C. Decide where the **new “trees”** are to be in the planting. This will determine whether branches are to grow directly out of the trunk or initially horizontal and then upright.
1. If there is sufficient curvature to the trunk, branches forming the new trees can grow upright and be directly above the curved trunk.
 2. If either there is not sufficient curvature to the trunk, or if a wider dispersion of new “trees” is desired, branches may be styled to initially grow horizontal from the trunk, making secondary rafts, and then be bent and trained upright as new trees.
- D. Remove all branches growing downward or originating on what is to be the **bottom** of the raft. Also remove remaining branches which will not be used in the design.
- E. **Wire** the trunk and bend it into the desired shape.

- F. Wire each remaining branch and bend each into its new position. Wire its principal branches to begin the styling of the new “tree”.
- G. Remove the bark and cambium along the underside of the horizontal trunk and along the underside of any horizontal branches. Dust all scarred areas with a **rooting hormone** powder.
- H. **Plant** into potting soil. Cover everything until only the upright branches are exposed. Secure the tree into the container with wire tie downs. Keep the horizontal trunk covered.
- I. As **roots** form on the underside of the horizontal branches, reduce the size of the original root ball.

VI. STYLING A CLUMP RAFT STYLE BONSAI

- A. The clump or sprout style bonsai has several trunks growing from a single root.
 - 1. Use an odd number of trunks (3, 5, 7).
 - 2. Follow the same styling rules as for a two-tree or twin trunk style bonsai.
- B. The “**claft raft style**” is especially useful in creating either a forest (group) planting or a planting among the rocks of a saikei.
- C. The plant which is appropriate to be styled into a clump raft style bonsai is one whose branches are not too thick and are flexible.
 - 1. Such a plant may have many low branches like a juniper with a “wagon wheel” of branches just above the root ball, or,
 - 2. One which is a true clump with many trunks

projecting from the root ball.

D. The various **branches** are

1. Wired and bent horizontal (parallel to the ground)
2. Bent toward the front or back of the composition. Use the same rules of composition and placement which would be used when designing any forest planting (or saikei).
3. Bent upright at the point along their individual trunks where they are to emerge from the ground as individual trees.
4. Stripped of their bark and cambium along the underside of their horizontal portion.
5. Dusted in the scarred areas with a rooting hormone powder.

E. The **root ball** is split in the middle. A cut is made from front to back and the root ball is spread apart and flattened into a training tray. This reduces the depth of soil which will be necessary and it retains most of the roots to support new growth.

1. The root ball is secured into the tray.
2. Potting soil is added to cover the root ball and the horizontal portion of the wired and bent branches.
3. Prune to adjust the height of the new trees.

F. After an appropriate period of time, depending on your growing conditions, **check the wire** on only the upright portion of the new “trees”. Remove the wire before scarring can occur.

G. After a couple of growing seasons check to make sure that there are enough **roots** on the wired horizontal branches

to consider planting in a shallow bonsai container.

H. Prune and wire each new tree to shape. **Styling** of the trees can be all formal upright, informal upright, slanting, or windswept.

VII. SUMMARY

A. Natural *raft* style trees are found in nature which have been created by one of a variety of circumstances.

B. *Raft* style bonsai may be created using

1. A straight trunk with branches projecting vertically.
2. A sinuous curving trunk with branches projecting either vertically or first horizontally and then vertically to create a forest of trees.
3. A clump whose trunks or low branches project first horizontally and then vertically to create a forest of trees.

C. As the horizontal portions of the trunk and/or branches develop roots, the size of the original root ball can be reduced.

MINIATURE BONSAI

Chapter 12

NOTES

I. OBJECTIVES

As a result of studying this section of the *Intermediate Bonsai Syllabus* and viewing audio visual presentations, or participating in other activities provided by an instructor, you will be able to:

1. Describe the primary identifying feature which classifies a bonsai as a *miniature* style bonsai.
2. Explain why the scale of the various parts of the bonsai is especially important with *miniature* style bonsai.
3. Using an appropriate nursery stock plant, demonstrate the process of creating an informal upright trunk for a *miniature* style bonsai using the “Grow and Clip” method of training.
4. Using an appropriate nursery stock plant, describe and demonstrate the process of creating branch ramification using the “Grow and Clip” method of training.
5. Using an appropriate stock plant, describe and demonstrate the process of creating a *miniature* style bonsai by reduction in height.

II. GENERAL

A. The term “bonsai” means tree in a tray and implies that the plant material is relatively small, certainly smaller than an actual tree one would see in nature. When the term “miniature” is applied to bonsai, it implies a still smaller representation of a tree which might be found in nature.

Miniature Bonsai, Continued

NOTES

B. There are various classification and names associated with smaller bonsai; poppy seed size, fingertip size, bean or pea size, mini, palm size, one hand size bonsai, etc., all of which apply. Some of the Japanese terms for various sizes of miniature bonsai are “Mamé”, “Komono” “Shito” and “Shohin”. In this *Syllabus* they will be referred to as simply “miniature” bonsai.

C. Such a tree may have only three or four leaves; a single leaf may have to suggest an entire foliage mass.

D. Miniature bonsai may be in any style in which larger bonsai are created. They appear, in most respects except size, as do any other bonsai. Containers may be slightly out of proportion to the trees by being a bit larger than normal to provide adequate root support.

E. Scale is important. Since these bonsai are very small, the size of fruit, flowers, leaves and needles must be small and in scale to the trunk and branches in order to create a harmonious composition. Genetic miniatures and naturally dwarfed species are often used in this style.



Illus 12-1

III. DEVELOPING MINIATURE BONSAI

A. Grow and Clip

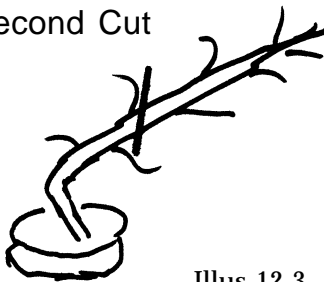
1. Many years ago a group of bonsai growers in southern China developed a method of training bonsai by alternately allowing them to grow and then clipping much of the new growth. Their technique, known as the Lingnan style, or just “grow and clip”, is effective in developing the trunk line for a miniature bonsai.
2. In 1972 bonsai artist and author Dorothy S. Young visited Mr. Yee-sun Wu, a distinguished Hong Kong banker and bonsai grower. According to Mrs. Young, as reported in an issue of the *American Bonsai Society Journal* (Vol 7, pages 15-17), Wu explained the “Grow

Miniature Bonsai, Continued

and Clip” method as consisting of two parts: drastic pruning followed by a period of growth.

- a. The first cut is made after the trunk or branch has reached the desired diameter. The trunk is cut directly above a branch which will be developed as a continuation of the trunk line. The location and position of the replacement branch is important because it will change the line of the trunk as it develops.

Second Cut



Illus 12-3

- b. During the next period of growth the new trunk growth is not trimmed or cut back until it has reached the desired size proportionate to the rest of the trunk. Then it is cut back and the process is repeated.
- c. Temporarily, during each growth period, the new replacement is allowed to send out branchlets and elongate far beyond the periphery of the tree. Large top growth on the replacement promotes a thickening of the section that will become the new trunk or branch.
- d. Over a period of time a gently curving trunk with nicely placed branches can be developed.
- e. The Fall 1982 issue of Florida Bonsai magazine published four panels of sketches as part of an article by Charles Lloyd titled: “Ideas for Mame Bonsai”. Those sketches, appearing on pages 14-17, show how a relatively uninteresting material tree can be trained into a bonsai by wiring and pruning. Those sketches are reproduced in **APPENDIX E** of this Syllabus.

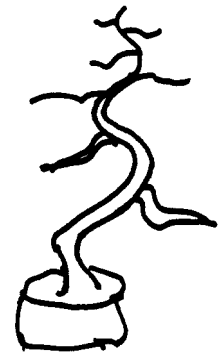
NOTES

First Cut



Illus 12-2

Basic Shape

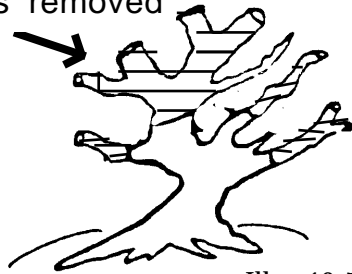


Illus 12-4

B. Styling by Reduction

1. A technique which works well with evergreen species, especially junipers, is to cut back the trunk and major branches.
2. With many species, junipers and pines being examples, it is necessary to leave foliage on any branch which is to be retained alive.
3. If the reduction would leave an unsightly stub, it may be appropriate to carve the stub to make it an attractive piece of dead wood on the tree.

Top and selected
branches removed



Illus 12-5

IV. CONTAINERS and SOIL for MINIATURE BONSAI

A. Containers appropriate for miniature bonsai generally follow the rules for larger bonsai with two notable exceptions:

1. **Color.** Containers for miniature bonsai may be more colorful and have more elaborate designs than those used for larger trees.
2. **Size.** Containers for miniature bonsai may be larger in proportion to the tree than those used for larger trees. This is especially true for the container's depth necessary to sustain adequate root growth. Also, because of the thickness of the clay walls of the pot, a miniature bonsai may appear to be over potted.

- B. Soil drainage is important for all bonsai but especially so for miniature bonsai. Use components appropriate to the species but avoid ALL dust and very fine particles which would impede drainage.

V. CARE AND MAINTENANCE

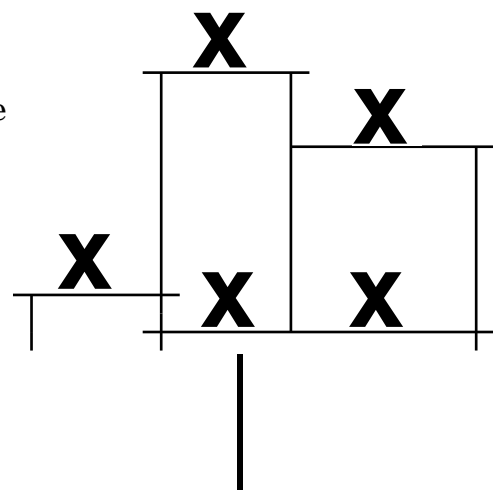
- A. Pest and disease control is especially important as they can spread quickly on such a small plant. Once detected, treatment is the same as for a larger specimen.
- B. Pruning for shape is more critical than on larger specimens because any amount of excess growth becomes readily apparent.
- C. Small trees can't stand drying out for over 24 hours. To avoid premature drying during the summer, trees do best if their pots are kept half buried in a tray of peat moss, or wet sand or calcinated clay that is kept wet when the tree is watered. Make sure there is not a standing water in the tray that would rot the roots.
- D. Heat and cold protection is important as the roots of the *miniature* style bonsai can more readily be affected because of the small containers. The tray of wet sand or calcinated clay described above can help protect the roots from heat.

VI. DISPLAY

- A. The display of *miniature* bonsai is done differently.

1. Larger bonsai are usually displayed on individual display stands or slabs and are usually all placed on the same level.
2. *Miniature* bonsai are usually displayed on a multi-level display stand having several shelves.

Illus 12-6



3. The order in which the trees are displayed may replicate the order in which trees in nature would grow on a mountain. Smaller trees, especially conifers, might be displayed high, broad leafed larger ones in the middle and grasses, rocks, and smaller flowering specimens lower.
4. The individual bonsai may be placed on individual stands upon the shelves.

VII. SUMMARY

- A. *Miniature* style bonsai are so designated because of their small size.
- B. They may be designed in any of the trunk styles of larger bonsai.
- C. Scale of the various parts of the bonsai is especially important with *miniature* style bonsai.
- D. The informal upright style trunk for a *miniature* style bonsai may be created using the “Grow and Clip” method of training.
- E. *Miniature* style bonsai, as well as all other size and style bonsai, may develop branch ramification when the “Grow and Clip” method of training is used.
- F. *Miniature* style bonsai, as well as all other size and style bonsai, may be developed by reduction in height.
- G. Containers used for *miniature* style bonsai may be more colorful, have more surface designs and be deeper proportionally than those used for larger specimens.

LITERATI STYLE BONSAI

Chapter 13

NOTES

I. OBJECTIVES

As a result of studying this section of the *Intermediate Bonsai Syllabus*, viewing audio visual presentations, or participating in other activities provided by an instructor, you will be able to:

1. Define and describe the literati style of bonsai, especially how and why it is different from other styles of bonsai.
2. Describe the characteristics of a *literati* style bonsai.
3. Using appropriate stock, style a single line *literati* style bonsai.

II. GENERAL

- A. The *literati* style bonsai may be in the informal upright style, slanting style, or multiple tree style.
- B. Pine species exhibiting characteristics of the *literati* style may be found in nature.
- C. A brief history of the *literati* style of bonsai may be found in **Appendix F** to this Syllabus.

III. LITERATI STYLE BONSAI DEFINED

- A. *Literati* style bonsai may reflect most of the usual bonsai styles as long as the trunk is not straight. *Literati* is often said to be the style of bonsai which breaks all the rules; which has no rules. This is not true, *literati* bonsai have rules, guides or characteristics, but they are different.

Literati Style Bonsai, Continued

NOTES

1. The trunk is bare for 60% to as much as 90% of its length.
2. There may be a single branch or jin somewhere along the trunk, preferably near the middle.
3. Branches are confined to the upper third or quarter of the trunk.
4. The trunk is elongated and there is no quick taper.



5. Trunks may be curved or have a sudden dramatic change of direction. There is no such thing as an absolutely straight trunk.
6. A trunk may ascend and then abruptly descend. It might even ascend a second time.

Illus 13-1

Norman Haddick, '94

7. A branch may cross in front or behind the trunk.
8. A branch can sweep downward at an angle as great as 90 degrees.
9. Containers are small. No wider than 25% of the length of the trunk. They may be shallow, round, or round and fluted. They may have feet. Colors are soft and muted.



Illus 13-2

10. Species are generally conifers or evergreens.

B. In most styles of bonsai there is a generous ratio of foliage to space, considerably more foliage than space. In *literati* bonsai the ratio of foliage to space is reversed.

- C. A *literati* style bonsai should portray a simple, abstract scene. Its shape or form is a result of the weather, but it has a graceful ruggedness.
- D. There is no great concern about rootage, trunk tapering, trunk size and height proportion, branch placement or style of apex as in other bonsai styles.

IV. STYLING THE TREE

- A. *Literati* style bonsai may have one branch or several branches. They may be relatively horizontal or they may droop severely. Following is a suggested method of creating only one of the various styles.
 1. Obtain a reasonably mature juniper with a long and gracefully curved trunk or a major branch which can be used as the new trunk.
 2. Identify either a branch or the flexible top of the trunk which is about 12 to 18 inches above the roots. This will become the foliage mass.
 3. If a branch is to be used, consider creating a dead wood jin for an apex at the end of the trunk.
 4. If the branch is on the left, lean the tree to the right, wire the new major branch and bend it downward on the left of the tree, counter balancing the lean of the trunk.
 5. Style this branch as a relatively flat plane with secondary and tertiary branches projecting to the left and to the right of the primary wired branch.
 6. When satisfied with the styling of this major down-sweeping branch, either remove all the others



Illus 13-3

completely or create dead wood jin and shari.

V. POTTING THE TREE

- A. Choose a container, preferably round or irregular, relatively shallow. The diameter of the container should be about the same as that of the largest foliage mass on the tree.
- B. Pot the tree at the angle used when the trunk and major branch were designed.
- C. The tree is viewed with the trunk slanting to the right and the downward sloping branch on the left.
- D. Complete the potting process.

VI. SUMMARY

- A. *Literati* bonsai may reflect nearly any of the usual bonsai styles; informal upright, slanting, cascade, etc. However, they also abide by a unique set of rules or standards.
- B. The usual ratio of foliage to space is reversed in *literati* style bonsai; there is considerably more space than foliage.

DRIFTWOOD STYLE BONSAI

Chapter 14

NOTES

I. OBJECTIVES

As a result of studying this section of the *Intermediate Bonsai Syllabus* and viewing audio visual presentations, or participating in other activities provided by an instructor, you will be able to:

1. Define the meaning of the term *driftwood* style bonsai and the terms “Jin”, “Shari” and “Uro”.
2. Using an appropriate stock plant, demonstrate the carving of a shari and or jin.
3. Using an appropriate stock plant, demonstrate the carving of an uro.

Note: A great deal of the material contained in this chapter was acquired while attending residential courses with British bonsai artist Dan Barton at his home in Bristol, UK. The course included the visiting of many examples of ancient trees and studying the elements which give them that appearance.

II. GENERAL

A. Definitions:

1. *Jin* is the Japanese term for a dead tip on a branch or trunk. Most usually the term refers to the terminal end.
2. *Shari* is the Japanese term used when bark is peeled from a branch or trunk to give the appearance of a mature tree that suffered a stress situation that killed that portion.

3. *Uro* is the Japanese term used to describe hollows in the trunk, often seen in ancient trees.
- B. Bonsai which are classified in one of the other styles may, of course, possess dead wood such as a jinned apex, a dead and driftwood styled branch or two, etc. Most of the concepts discussed in this chapter apply to any dead wood on bonsai.
- C. Dead wood on a tree may be caused by a variety of factors: extreme cold, wind, ice or sand storm, drought, a branch broken by weight of snow, avalanche or another falling tree, fungal infestation, insect attack, lightning strike, lack of light, or just old age.

III. DRIFTWOOD STYLE BONSAI DEFINED

- A. The *driftwood* style is derived from the character and nature of the trunk of the tree rather than from any structural form.
- B. The essence of a driftwood style tree relies on conveying a sense of time, strife and in the ultimate form of a hollow-trunk style, antiquity.
 1. The viewer's mind has been conditioned to associate bleached timber as being old and weather worn. Therefore bleached and jagged dead wood on a tree is seen as a sign of age.
 2. A sense of struggle and clinging onto life must be conveyed in the design. Therefore it is necessary to consider the design of the remainder of the tree to harmonize with the concept of struggle and age. There is a lesser amount of live foliage and the branches should be short.



Illus 14-1

IV. SELECTING MATERIAL FOR DRIFTWOOD STYLE BONSAI

- A. There may be several reasons for selecting a specimen to be carved to create a *driftwood* bonsai or one with dead wood.
1. The material may be unsuitable for any other style because of faults within the tree such as faulty branches, ugly trunk, lack of good taper, poor bark quality, massive pruning cut such as removal of the top of the tree, etc.
 2. By carving jin, shari or a uro, one or more of the faults may be corrected or masked.
 3. The carving for the sake of carving on an otherwise quite acceptable specimen is not a valid reason. If you want to carve for the sake of carving, practice on some dead material.
- B. Because the ultimate desired effect is one of strife and age, the more mature the material the better to give credence to the illusion.
- C. The appearance of having undergone great strife and of being quite old may be enhanced by:
1. Choosing material with mature bark.
 2. Creating a scenario as to why the dead wood occurred and incorporating those other areas into the area of dead wood. As an example. If an uro (dead wood along the trunk) is to be created, also create one or more dead branches (shari) whose lines of dead wood join the uro creating a reasonable scenario for what happened.

V. CREATING DRIFTWOOD STYLE BONSAI AND DEAD WOOD ON BONSAI

A. Before beginning to carve:

1. Select only trees in very good health and ones which are stable within their growing containers. The carving process is a traumatic event in the life of the tree; it needs all of its resources to survive.
2. Make sure you are carving to enhance the appearance of the tree, not carving for the sake of carving.
3. Gather the necessary tools. Make certain that they are sharp and in good repair.
4. If power tools are to be used, have and wear protective eye and facial masks and suitable gloves. Tie long hair back or put it under a cap. Remove or secure long sleeves. If the soil is to be covered, use aluminum foil rather than cloth. If the power tool becomes entangled with the covering it will simply rip the foil but would catch and hold cloth. Variable speed tools are best to give control over the speed of the cutting attachment. Insure that bits are securely anchored in the tool's chuck. Do not use a bit at a speed higher than recommended.
5. Mark the area to be carved using a felt tip marker or chalk. In marking, follow the natural lines of the tree. Remember that you are telling a story of what happened to the tree over a period of time.

B. Creating Jin and Shari

1. Cut the bark and cambium at the base of the dead wood at the place where the dead wood will join live wood. This will prevent accidental damage to the live wood.
2. Decide on the length the dead wood is to be and add a

bit more.

Note: If the wood to be styled is live, has internal moisture, and its position is to be altered by application of heat as described in a later section, do NONE of the following until heat has been applied and it is in the position you want.

3. Break the branch downward and rip along the underside of the branch or the front side of a jinned apex. Be careful to not remove bark, cambium and wood below the area to be made into dead wood.
4. Further sharpen and make more rugged the end of the branch by using a branch splitter or concave cutter to split and rip the branch.



Illus 14-2

N.H.

5. Create a textured and fissured appearance to create areas of dark and light. Using a small blow torch burn off the remaining hairs and soft wood areas. Brush with a wire brush. Finish with a light sanding using fine sand paper. When completed there should be no evidence of tool marks.

6. If there is to be a uro adjacent to the dead wood branch, join the branch's stripped area with the uro, unifying the dead wood area.
7. Bleach with a lime sulphur solution to preserve and to visually enhance the area. The whiteness of the bleached wood can be moderated by adding a drop or two of india ink in a small amount of lime sulphur before applying.
8. To alter the jin or deadwood's position, either wire it into position or use heat to bend it into position. Following is a technique of applying heat taught by bonsai artist Dan Barton in the UK:
 - a. If the area to be repositioned is live, do not shorten the branch yet and do not remove the bark.
 - b. If the wood is dead and stiff, wrap the area to be effected by the bend with kitchen paper towel or bathroom paper and thoroughly wet the paper with water. Wrap the wet paper with aluminum kitchen foil and leave it to soak into the wood for 30 to 60 minutes.
 - c. If the wood is alive, has internal moisture, and retains its bark, wrapping with paper and aluminum foil is not necessary.
 - d. Use a small blowtorch to heat the entire portion of the wood which is to be bent. Be careful to not burn yourself or to damage living portions of the tree.
 - e. With your free hand apply constant gentle pressure in the direction in which you want the wood to bend. When the water in the paper or the moisture in the live wood begins to boil, it will create steam which softens the wood.
 - f. Eventually you will feel the wood yield to the pressure. Continue until the it is in the position

you want and stop heating.

- g. Continue holding it in position and carefully remove any aluminum foil and paper.
- h. Dry the wood with the blowtorch and shut off the blowtorch. Then blow on the wood until it is cool, otherwise it may not retain its new position when it gets wet.
- i. If the treated wood was live and you left the bark on, remove the bark and shorten as appropriate and carve as described earlier.
- j. If the wood has been scorched in the process of bending, the use of a wire brush and lime sulphur will lighten it. Some scorching and darkening in deeper areas in the carving are desirable, giving the appearance of depth.

C. Creating an Uro

1. After having outlined the area to be removed, cut along both edges using a knife or a small circular power saw. This roughs out the area and establishes the limits of the cutting. The edges should be undercut to give the appearance that the removed area is deeper than it is and to retard overgrowth by cambium attempting to repair the damage.
2. Using hand chisels or power tools, hollow out a major portion of the outlined area. Do not merely strip the wood leaving a cylindrical form. Rather create a textured and fissured appearance to create areas of dark and light. There should be within the concave hollow areas which are raised and areas which are more deeply depressed to create additional visual interest. Insure that the lines complement those of the trunk and branches.

3. Occasionally step back from the work and view the project as a whole.
4. All of the carving does not have to be done in one session.
5. Using a small blow torch burn off the remaining hairs and soft wood areas. Create dark places deep within the carved areas. Brush with a wire brush and finish with a light sanding using fine sand paper. When completed there should be no evidence of tool marks.
6. It is often appropriate to have one or more dead branches forming a part of the dead wood area.
7. Bleach with a lime sulphur solution as described earlier for jin and shari.

VI. SUMMARY

- A. A *driftwood* style bonsai is one on which the major feature is the presence of dead wood which gives the effect of driftwood.
- B. Bonsai of various styles may have dead wood features which do not necessarily dictate that the style be called *driftwood*.
- C. The presence of dead wood on a tree indicates that the tree has experienced stress and may be of an advanced age.
- D. The decision to apply dead wood effects on a tree should be made with the intention of enhancing the tree's appearance rather than to simply create an effect.
- E. Various techniques may be used to create the dead wood effect. They should be applied with due respect for the health of the tree and the safety of the bonsai artist

WEeping STYLE BONSAI

Chapter 15

NOTES

I. OBJECTIVES

As a result of studying this section of the *Intermediate Bonsai Syllabus* and viewing audio visual presentations, or participating in other activities provided by an instructor, you will be able to:

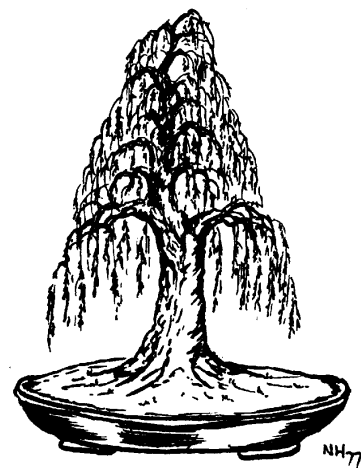
1. Define and describe the *weeping* style of bonsai.
2. Discuss the species of bonsai which are appropriate for the *weeping* style of bonsai.
3. Using an appropriate stock plant, demonstrate the creation of a *weeping* style bonsai.

II. GENERAL

- A. The *weeping* style bonsai is one of several styles which have relatively upright trunks.
- B. The *weeping* style bonsai is so named because the foliage hangs downward from the branches.

III. WEeping STYLE BONSAI DEFINED

- A. *Weeping* style bonsai may be in most any primary style: formal upright, informal upright, slanting or windswept, but most usually the informal upright configuration.
- B. *Weeping* style bonsai are so named because the majority of their foliage weeps, or hangs downward.



Illus 15-1

IV. STYLING A *WEEPING* STYLE BONSAI

- A. Not all species of plant material lend themselves to the *weeping* style.
1. Most appropriate for this style are those species which grow naturally in a weeping fashion such as weeping willow, weeping beech.
 2. Others may readily be trained in the *weeping* style such as wisteria and rosemary.
 3. Forcing or attempting to force a species to grow in a manner in which it is not suited genetically will produce an unsatisfactory specimen and a frustrated owner.
- B. The most pleasing contour is for the trunk to be in the informal upright or slanting style with primary branches that project upward from the trunk then curve gently downward. The trunk and the primary branches can be trained by wiring. Secondary branching should curve downward and may be trained by wiring or with a mesh netting.
- C. One of the simplest ways of training the foliage of a specimen to grow in the *weeping* style is to place a fine mesh netting over the foliage and tying down the corners of the mesh. Existing foliage is forced gently down and new growth will often follow the line of the mesh. Any new growth which protrudes through the mesh can be pulled gently under the mesh. Light can enter through the mesh to nourish the plant.

IV. POTTING A *WEEPING* STYLE BONSAI

Potting of the bonsai follows the general rules for potting the primary style of the trunk (formal upright, informal upright, etc.).

V. SUMMARY

- A. *Weeping* style bonsai may be in most any primary trunk style.
- B. A principal considerations when styling a *weeping* style bonsai is to select a species which will happily grow in a weeping configuration.

EXPOSED ROOT STYLE BONSAI

Chapter 16

NOTES

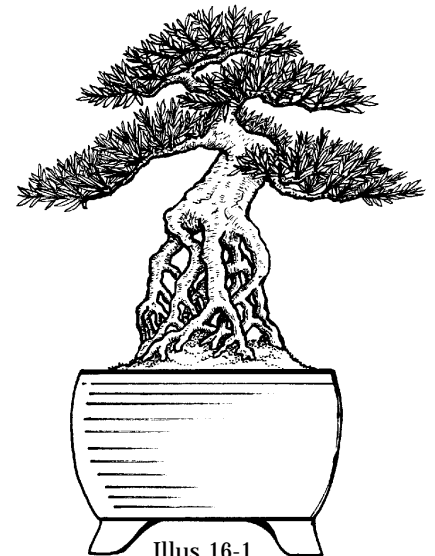
I. OBJECTIVES

As a result of studying this section of the *Intermediate Bonsai Syllabus* and viewing audio visual presentations listed in an APPENDIX or participating in other activities provided by an instructor, you will be able to:

1. Define the meaning of the term *exposed root* style of bonsai.
2. Using an appropriate stock plant, demonstrate the procedure for beginning the training of an *exposed root* style bonsai.

II. GENERAL

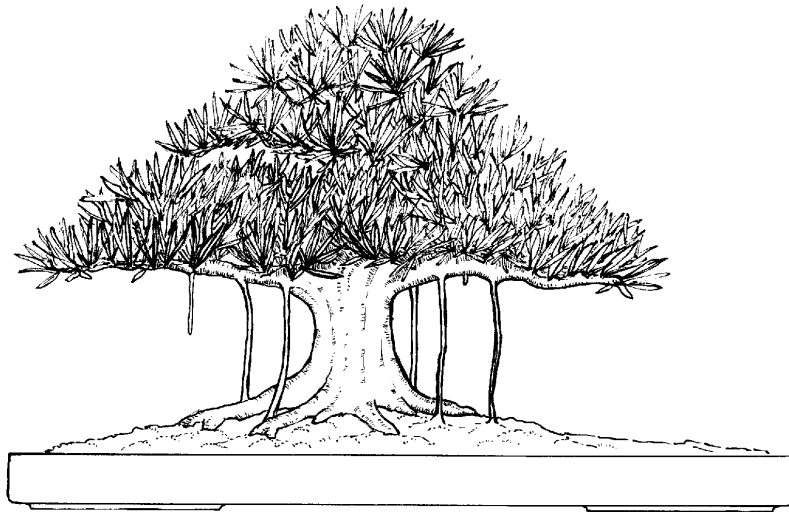
- A. A bonsai which in all other appearances is old, may have a portion of one or two roots exposed. This is a natural process of slow erosion occurring over a long period of time, enhancing the illusion of great age.
- B. However, the *exposed root* style bonsai exhibits a significant amount of roots which have been exposed above the soil, thus becoming a dominant feature.
- C. Bonsai created in the *exposed root* style may resemble trees growing on steep slopes or on river banks where the soil below the base of the trunk has been slowly eroded, the exposed roots develop bark, and become multiple extensions of the trunk.
- D. *Exposed root* style bonsai may also resemble trees growing on a rock whose roots grew in the soil down along the rock. A portion of the soil later eroded, exposing the roots clinging to the rock.



III. EXPOSED ROOT STYLE BONSAI DEFINED

- A. *Exposed root* style bonsai may be in most any of the primary styles, however slanting, windswept or cascade styles are the most believable configurations. Believable because it is in these configurations that natural erosion of soil from the roots would most likely have occurred.

Note: Bonsai, especially ficus, may have aerial roots which supplement the roots at the base of the trunk. Such trees are not normally classified as exposed root style bonsai.



Illus 16-2

- B. The *exposed root* style bonsai is so named because a major portion of the roots, which are the natural extension of the trunk, are above ground and exposed and are supporting the trunk of the tree. They often comprise a third to a half of the height of the tree.
1. The roots may be several individual roots like so many legs upon which the tree stands.
 2. Several finer roots may be plaited or twisted and then grafted together to create a few larger roots. As they grow, expand and graft to each other, the evidence of the plaiting or twisting diminishes.

3. The trunk-roots should be a harmonious continuation of the trunk. There should be a pleasant blending of the trunk line and the root line.
4. Exposed roots which are clasping a rock on their way to the soil below should be growing tightly against the rock with no space between.

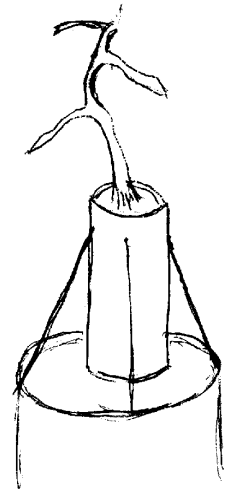
IV. STYLING AN EXPOSED ROOT STYLE BONSAI

- A. Style the trunk and the branches as an *informal upright*, *slanting*, *windswept* or *semi-cascade* style bonsai. However, allow one or more sacrifice branches to grow unchecked to enhance root growth.
- B. Remove all of the soil from the roots and untangle the roots. Examine the primary roots, those which are attached directly to the trunk. Keep the roots moist.
- C. Decide on the configuration desired in the planting. They may either be elongated and be vertical continuations of the trunk, or they can be spreading and provide multiple root support for the tree. Roots growing over a rock are in the latter category.
- D. If the roots are to be elongated and be vertical continuations of the trunk,
 1. Decide the distance which the roots will be exposed in the finished design and obtain a piece of 4" diameter PVC pipe or other material with which to make a cylinder. If PVC pipe is to be used, cut it lengthwise making two half-sections of pipe. If flat material is to be formed into a cylinder, make sure it will have the proper length and diameter when formed.
 2. Place a layer of potting soil in one of the halves.
 3. Lay the roots in the soil parallel to each other.

Exposed Root Style Bonsai, Continued

4. Cover the roots with enough soil that when the second half-section of pipe is placed over them, the soil and roots are securely snug.
 5. Secure together the two vertical sections of pipe with wire. Add soil as necessary and gently tamp downward.
 6. Bury the lower end of the PVC pipe a couple of inches in a large nursery container and splay any roots protruding from the bottom. Stake or tie to secure it in the pot. Water well.
- E. If the roots are to be spreading and provide multiple root support,
1. Use cotton twine to tie the roots into the desired configuration. Cotton twine is used because it will rot before damaging the roots to which it is tied.
 2. Pot the tree into a relatively deep nursery container with the soil coming almost to the base of the trunk.
 3. As necessary, train the exposed roots using wire, wedges or string ties to further position the roots as desired.
 4. Add a stake and tie the trunk it to stabilize the tree.
 5. If the roots are to grow over a rock:
 - a. Select a rock in proper proportion to the anticipated final size of the tree.
 - b. Select a rather rough rock with an interesting shape and crevices.
 - c. Wet the rock before placing the roots.
 - d. Plant the tree and the rock as described earlier.

NOTES



Illus 16-3

- F. Depending on the species tree and growing conditions, periodically remove an inch or so of soil to force the roots to develop bark and to harden off. If possible, also remove the unnecessary upper portions of the cylinder. Expect that the process will take a year or more.
- G. When the training of the roots is completed, pot the tree in a container appropriate to the style of the upper portion of the tree (upright, slanting, windswept, etc.). Generally a shallow to medium depth container which is round, square or oval is best.

V. SUMMARY

- A. The lower trunk of *exposed root* style bonsai is composed of roots which have been exposed because of soil erosion.
- B. While the style is unusual and dramatic, it does develop naturally in nature.

SOURCES of MATERIAL for BONSAI

Chapter 17

NOTES

I. OBJECTIVES

As a result of studying this section of the *Intermediate Bonsai Syllabus*, viewing audio visual presentations, or participating in other activities provided by an instructor, you will be able to:

1. Identify sources of plant material for bonsai.
2. Describe possible potential sites for collecting plants.
3. Discuss legal precautions to take when considering a field collecting trip.
4. Discuss safety precautions which should be taken prior to and during a collecting trip.
5. Identify some of the tools, equipment and supplies which would be appropriate in your location.
6. Discuss etiquette which should be observed when collecting plant material.
7. List some of the safety factors which should be a concern during a collecting trip.
8. Describe the process of collecting a plant from the wild which is suitable for bonsai.
9. Discuss the post collection care of collected material.
10. List several advantages and disadvantages of propagating bonsai material from seed.
11. List several advantages to propagating bonsai material from cuttings.

12. Explain why a “V” shaped cut on the base of cutting is desirable when propagating bonsai material.
13. Explain the general purpose and process of cleft grafting.
14. Explain the general purpose and process of inarch grafting.

II. GENERAL

A. Species of Plant Material

1. There are hundreds of species of plant material which are appropriate for bonsai. Many of them have sub-species called “varieties”.
2. Many of the species appropriate for bonsai are genetically dwarfed. This means that they have been genetically engineered to produce smaller leaves and shorter internodes.
3. Not every species will grow in every climate or in every growing condition. For best results determine which species perform best in your particular climate and growing conditions.

B. Sources of Plant Material Suitable for Bonsai

1. A major source of material to be used in the creation of bonsai is to buy it from a general purpose nursery or garden center.
2. Another source for material may be from a bonsai nursery, from mail order suppliers or from a friend who is willing to part with a plant from his collection.
3. Material for bonsai may be propagated by the reproduction or multiplication of material from one or more existing plants. Plants may be propagated from

seed, by taking cuttings and rooting them, by grafting and by layering. Each of these will be explained.

4. Finally, one of the more challenging sources for plant material is to collect existing materials which are growing in the ground. They may be growing either in the wild or in cultivated areas.

III. COLLECTING MATERIAL FROM THE GROUND

A. General

1. There are several reasons for collecting material from the ground. Mature and weathered specimens are easier to find in the field than in nurseries. The cost is usually just your time. If native or adapted material is gathered locally it is already accustomed to your climate.
2. Late fall or early winter are the ideal times to collect material in nature because they have stored the necessary nutrients for the winter and are generally dormant.
3. Trees which have been stunted can often be found on the side of streams, roads, near bridges, along railroad right away, in pastures, and in rock crevices. Much of the stunting occurs from repeated cutting back.
4. Other desirable material, while not necessarily stunted, may be found in vacant lots, wooded areas, on land about to be cleared to make way for construction projects, and at business and residential sites where older plant material is going to be removed to make way for new landscaping.

B. Organizing a field collecting trip

1. When organizing a field collecting trip it is important to comply with all facets of the law.

- a. Permission must be obtained from the property owner or caretaker before entering upon any private land and before digging on any private or public property. Permission should be obtained in writing and all parties should have a copy.
 - b. The highway right away is a convenient area in which to collect material. Underbrush is usually kept low, some desirable plant material may have been stunted from repeated cutting by road maintenance crews, and there is easy vehicle access to get to the material and to haul it away. While these areas are public access areas, they are under the caretaker management of some governmental entity. Generally there is no problem looking about on the right away for suitable plants, but permission should be obtained before doing any collecting.
 - c. A railroad right away provides a less convenient area in which to collect material, but the effort can be quite rewarding. Railroads periodically cut foliage on their right away just as do highway departments. Permission to both enter the right away and to collect plant material must be obtained.
 - d. When requesting permission to enter and dig it is important to specify the date or dates on which entry and digging will occur, what type, size and quantity of material is being sought, and in what condition the land will be left when finished.
2. Safety of the collecting party is most important.
 - a. Wooded areas are a haven for snakes, stinging insects and other animals which are not pleased by human intrusion. Their nests may be hanging from a tree or be built into the ground and remain unseen until the unwary collector disturbs them.

- b. Snakes may be found in trees as well as on the ground or in the water. Wild boars, wild dogs, rabid raccoons, and feral cats may also present a hazard. On pasture and range land, the domesticated animals may not be friendly to humans.
 - c. If the collecting trip is sponsored by an organization, that organization should either provide insurance applicable to the situation or should have a legally binding release of liability from the participants.
3. Clothes, tools and supplies
- a. Clothing should be appropriate to the season and most importantly, adequate to protect the head, arms and legs from exposure to the sun, poisonous plants and brambles. It is wise to bring a complete change of clothes. If it is a cold day, dress in layers.
 - b. The equipment needed depends on the area in which the plant material is located, distance from access roads, type and size of material to be collected and the nature of the medium in which the plant is growing. Generally a shovel or spade, pruning saw, lopping shears, hand shears and pry bar are needed.
 - c. Because anything dug has to be removed from the area, some means of getting the collected material to transportation must be considered. Small vehicles, carts, wagons, baskets, back packs, or poles on which to sling the material may be appropriate.
 - d. Supplies should include drinking water, food, a first aid kit, sunscreen, large nursery cans, burlap bags or heavy duty plastic garbage bags, twine, water for roots, and colored marking tape or tags.

C. Collecting material

1. Collecting etiquette requires that only those items which are to be removed be dug, that holes be filled in, that no trash be left behind, that any gates opened are closed, and that no structures or remaining plants be damaged.
 - a. When entering an area do not start digging immediately. Instead locate and tag plant material which appears to have bonsai potential.
 - b. Decide on how many plants can reasonably be cared for and then select the tagged items which will be collected.
 - c. Make sure the tree is alive. If dormant, scratch a twig to see if there is green cambium below.
 - d. Dig surface soil away and check for satisfactory surface roots.
 - e. Evaluate the taper and trunk diameter.
 - f. After removing a plant fill in the hole with soil and with any branches and foliage which had been removed.
 - g. Before leaving the area, remove the tags from plants which were tagged but not dug.
2. Method of digging
 - a. After selecting a plant for collection it is important to establish a new balance between the amount of foliage and the amount of roots remaining after digging. This is done by removing all branches which will not be needed, shortening the height of the tree where appropriate, and removing much of the remaining foliage.

Sources of Material for Bonsai, Continued

NOTES

- b. Around the trunk outline a circle in the soil which has a diameter less than the diameter of the intended container.
- c. With a sharp shovel or spade, make vertical incisions, cutting the soil and roots below this circle to a depth equal to the length of the tool's blade. Use a pruning saw or lopping shears to cut heavy roots.
- d. If time and circumstances permit, defer removal of the material from the ground and leave it in place for collection later. This gives the plant the opportunity to grow new feeder roots and to begin recovering from this initial shock while still retaining its downward growing roots.
- e. If the material is to be removed, dig a trench just outside the root ball and tunnel into the root ball. Under the root ball cut the downward growing roots. Continue until its root ball is free to be lifted from the hole.
- f. Keep as much of the root ball (roots and soil) intact as possible. If all of the soil falls off the roots, put some in a container to use when potting the plant.
- g. Wrap the root ball in sheet plastic, a plastic trash bag or burlap, tying it securely with twine to help keep the root ball intact.
- h. After the collected plant has been moved to the transportation, moisten the root ball to keep it from drying out.

D. Post collection care and cultivation

1. The collected material may need a second pruning after arriving in the work area.
 - a. The length of the roots and branches to remain is determined by the shape of the tree and the dimensions of the pot.
 - b. The length of the major roots should be slightly shorter than the dimensions of the bonsai container into which they will ultimately be planted.
 - c. The tree is then planted in a nursery container or in a nursery bed. It will rarely be planted directly into a bonsai container. Tie the plant securely in its container to prevent it shifting.
2. The first watering should be thorough and an anti-shock solution such as Superthrive® should be used.
 - a. Plants having tall trunks should be wrapped with moss to reduce moisture evaporation. As the weather gets warmer they should be sprayed with water every morning and evening so that the covering remains moist while the soil is not too wet. An intermittent mist system may be needed for some time to prevent dehydration.
 - b. Collected trees need to be protected from sun, wind and extremes of temperature for two to four weeks, or until they appear to no longer be stressed.
3. Intensive care needs to continue after the plant begins sprouting.
 - a. Sprouts may be a result of food stored in the plant rather than as a result of nutrients currently being manufactured by the plant.

- b. Excessive new growth should be removed to prevent weakening the plant and to channel existing nutrients into those growth points which are to be retained.
 - c. Protect the plant to prevent the new buds from being scorched by the sun as well as to reduce evaporation of moisture from the leaves.
 - d. After a month gradually reduce the time spent under shade.
- 4. In about six weeks as the plant appears to be recovering, begin applying small quantities of diluted fertilizer to stimulate leaf, branch and root growth.
 - 5. If additional root reduction is necessary, wait a minimum of one year and preferably two before making any drastic cuts on the roots.

IV. BUYING MATERIAL

- A. Buying material from a general purpose nursery or garden center.
 - 1. Suitable material for bonsai may be found in nurseries and garden centers.
 - a. Plants in garden centers are container grown while those in nurseries may be in containers, balled and wrapped in burlap, or still growing in the field. Nurseries will usually have a greater variety of sizes of material than will garden centers.
 - b. Often a group of plants will at first appear to be all the same; of a uniform size and shape. Look carefully to spot one or more which are somehow different: smaller leaves, shorter internodes, more compact, or greener color.

- c. Take time to look closely at any tree you are considering buying.

3. Selecting Material

1. It is most important to select healthy material and a species which is appropriate for bonsai.
2. Detailed guidance is given in *Introduction to Bonsai - A Course Syllabus* on the selecting of suitable plant material from general purpose nurseries and garden centers. But, in general:
 - a. Look for a plant with a well shaped trunk, tapering from a broad base to a slimmer apex. Carry a small root hook or root rake with you to help dig into the soil to find the surface roots and to locate what will be the base of the tree.
 - b. There should be strong and healthy lower branches which are attached no farther than one third the way up the trunk of the bonsai once styled. There should also be plenty of branches higher up on the tree.
 - c. Consider the size of the leaves and needles; they need to be in proportion to the expected size of the bonsai.

B. Buying material by mail order

1. Get the opinion of others concerning a particular mail order source.
2. Order only material which will thrive in your plant growing area.
3. Do not have a shipment made during weather which would be detrimental to the plant while in transit.

C. Buying material from a bonsai nursery or private collector.

1. Evaluate the material the same as when buying from a general purpose nursery or garden center.
2. The price includes the grower's time and overhead expenses as well as the tree and its container.

V. PROPAGATING BONSAI MATERIAL BY SEEDS

A. General

1. Plants have been duplicating themselves since the beginning of time. They propagate by dropping and germinating seeds, roots sprout new trunks, one part of a plant grafts itself onto another part and low or fallen branches root.
2. Some species of plants suitable for bonsai cannot be collected locally. To obtain multiple plants, it may be appropriate to artificially propagate them by sowing their seeds, by rooting cuttings, by dividing, by grafting one plant onto another and by rooting by layering.

B. Raising bonsai from seed

1. There are seeds from plant material which are suitable for bonsai. However, there is no such seed as a "bonsai seed" which, after germination, will guarantee a bonsai.
2. Developing bonsai from seedlings has several advantages:
 - a. Root spread can be controlled.
 - b. Early root ramification is possible.
 - c. By removal of buds along the trunk, branch placement can be regulated.

- d. Trunk shape can be determined more readily.
- 3. The disadvantages of developing bonsai from seedlings include:
 - a. It takes more time than most other propagation methods.
 - b. The genetic characteristics of the seed do not necessarily match the parent.
- 4. Bonsai can be started from either deciduous or evergreen seedlings , but results are more likely to succeed and will be quicker with deciduous material.
 - a. Seeds should be fresh because to a large extent a seed's vitality is determined by its freshness.
 - b. Soak the seeds in warm water for several hours before sowing to assist germination. Hard shell seeds may need to be treated by scratching, filing or cracking the shell or by cutting and removing the end of the seed to aid germination. Care must be taken to not damage the embryo or the sack enclosing it.
 - c. Seeds will not germinate without a supply of oxygen. The planting medium should be open and well-drained. Equal parts of compost and coarse sand is a practical rooting medium.
 - d. Place the seed on the surface of the soil and cover with a layer of growing medium to a depth of about twice that of the seed.
 - e. Water gently from the top or set in a container of water so the medium can absorb water from the bottom. Remove from the water when the medium is saturated. The seeds and their medium may be placed under a mist sprinkler or be covered

- with damp sphagnum moss. Do not let the soil dry out.
- f. The seeds and their medium should be kept relatively warm, at about 70 degrees F.
 - g. After germination gradually move the container to full sun light.
5. When the seedling has developed a sufficient root system,
- a. Remove it from its container, remove the rooting medium from its roots and immerse its roots in cool water to thoroughly dampen them.
 - b. Cut its tap root and any heavy coarse roots, leaving the fibrous roots.
 - c. Decide on a probable style for the tree and remove any unwanted branching or excessive trunk. Re-immerses the roots in cool water as necessary.
 - d. Use a potting mixture appropriate to your location which will encourage root development and which will provide stability for the tree.
 - e. Plant the seedling in an individual clay or plastic nursery pot with the thickest portion of the trunk at the soil line. Water thoroughly and replace outside in full sun.
 - f. Begin fertilizing with half-strength liquid fertilizer or apply slow-release fertilizer to the soil surface.
6. In early summer prune most species of seedling as necessary depending on the plan for its growth and styling. Repeat annually the spring repotting and heavy root pruning and the spring and early summer branch pruning.

7. Evergreen seedlings are pruned drastically only in the early spring.

VI. PROPAGATING BONSAI MATERIAL FROM CUTTINGS

A. Propagating bonsai material from cuttings has several advantages:

1. It is a much faster method than by propagating from seeds.
2. The cutting has the adult characteristics of its parent; it is already mature and will flower and fruit the same as when it was part of the parent..

B. There are three types of cuttings.

1. Hardwood cuttings should be taken when the plant is dormant and should be selected from matured wood, usually of the previous season.
2. Semi-hardwood cuttings are taken from firm current season wood minus the soft tip.
3. Soft tip cuttings are taken from the growing tips of branches.

C. Propagating by cutting. (Note, some of the following does not apply to propagating using soft tip cuttings.)

1. Select and cut a nicely shaped branch from the parent and make the cut just below a node. The cutting should be three to five inches long with several nodes.
2. Begin styling the cutting immediately by deciding on the angle it is to have when it emerges from the soil after rooting and by removing unwanted branches.
3. Remove the soft tip as well as the leaves on the lower portion of evergreen cuttings. Remove all leaves on deciduous cuttings.

4. The new bonsai should have an evenly distributed root spread. Identify what is to be the left and the right sides of the new plant and with a sharp, clean knife, make a forty five degree cut on each side. This will create a "V" shaped wedge on the lower end of the cutting. The "V" shape increases the potential rooting area and directs rooting toward the two sides of the plant. Do not allow this lower cut to dry out and if you use tobacco, do not touch it with your fingers as nicotine will inhibit growth.
5. IMMEDIATELY dip the "V" shaped wedge into rooting hormone.
6. With a pencil or chop stick, make a hole about an inch deep in the rooting medium (well aerated coarse sandy soil or vermiculite) and insert the cutting into the hole at the desired angle and pack the rooting medium around it. Water thoroughly and do not allow the rooting medium to dry out. Label the cutting with date and species' name.
7. Frequently mist the cuttings or provide humidity by an alternate means.
8. Periodically carefully check for rooting as new roots break very easily. When sufficient roots have grown, lift the cutting and its root mass from the rooting medium and plant into potting soil. Gradually move the rooted cutting into sunlight and do not let it dry out.
9. Cuttings may be taken from **roots**.
 - a. A root is an underground extension of the trunk and will often sprout just as the conventional trunk sprouts.
 - b. Severed tap roots, as well as other substantial roots, may develop buds at their tips when planted with a portion of the upper root exposed.

- c. Growth along the exposed portion of the root may be stimulated by scratching the root where a branch is wanted.

VII. PROPAGATING BONSAI MATERIAL BY DIVIDING

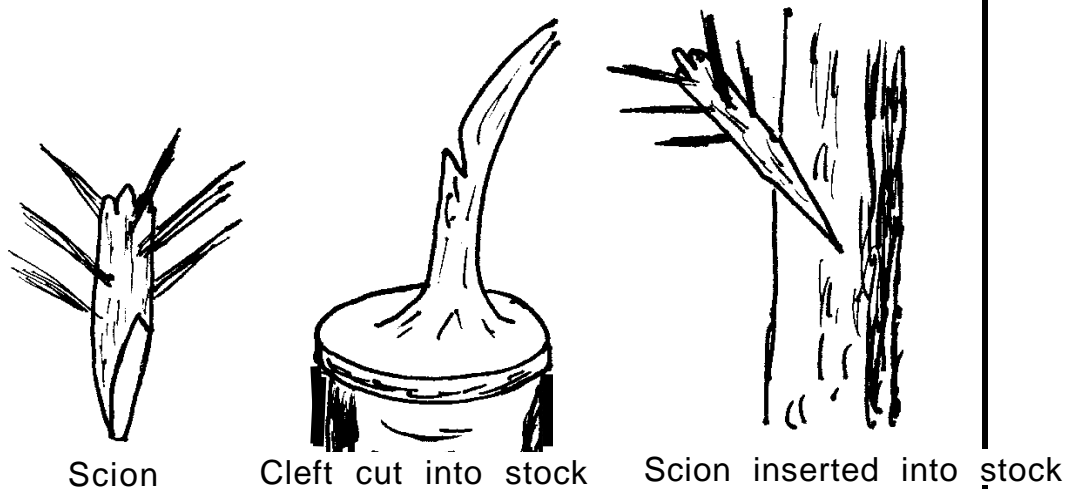
- A. Propagating dwarf bamboo is an example of propagating by dividing. Bamboo, and other plants which tend to grow in clumps, have underground runners which sprout new plants. With a saw the mass of roots and runners can be divided and each division potted separately.
- B. When roots are removed while repotting, one may often be potted in a nursery container with what is to be its new trunk above the soil surface. Properly tended it will sprout and create a new plant.

VIII. PROPAGATING BONSAI MATERIAL BY GRAFTING

- A. Propagation by grafting may be used when cuttings are not generally successful. It may also be used for those species which vary greatly when propagated by seeds. Additionally, grafting may be used:
 - 1. To increase disease resistance or adaptability of plants as when a scion (the new portion) from a lesser species is grafted onto one with a hardy root stock.
 - 2. To repair damaged material. An example would be to replace a broken branch.
 - 3. As a means of enhancing material by adding branches where none exist.
- B. Grafting is best done in early spring. The tree should be dormant with no sap rising. Most scions should be one and a half to two inches long with one or two strong buds. The lower end of the scion is cut to form a wedge. Do not allow this end to dry out.

C. **Cleft grafting** is used to graft a scion onto a stock which has a much greater diameter. A cleft, or slit, is cut into the stock and the wedge shaped end of the scion is inserted, the cambium layers are aligned, and the union is sealed with grafting wax. The cleft on the stock plant may be in the side of the tree or it may be in the severed top of the stock.

1. Cleft grafting into the side of a tree may be used to create a bonsai which has a branch where none existed before. This type of a graft leaves no clearly visible graft joint. If an attempt fails, another may be made with minimal damage to the tree.

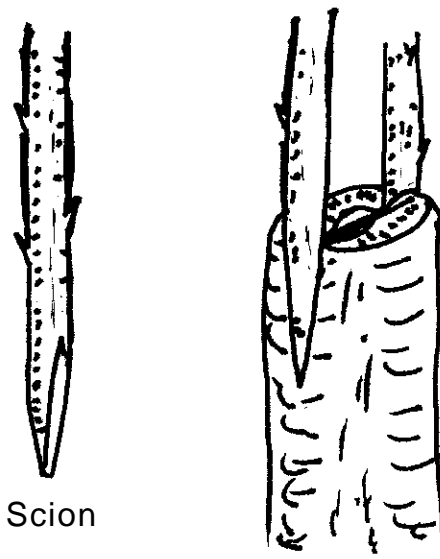


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2. Cleft grafting permits the substitution of branches and foliage of a more desirable species for those on a less desirable root stock. As an example, scions from a slender five-needle pine may be cleft grafted onto the stock of a sturdy black pine, gradually replacing the black pine's foliage. This will result in a plant with a large, rough barked trunk which has fine foliage.
3. The wedge cut on one side of the scion is longer than on the other. The long side of the cut is the top side of

the scion when inserted into the cleft on the stock plant.

4. When cleft grafting a pine, all but 4 to 6 bundles of needles are removed from the scion.
5. A cleft graft may be done on a severed trunk to create a *broom* style bonsai. The wedge cuts on the lower end of the scion used in this graft are of equal length.



Illus 17-2

6. After the graft is made, the grafted area is sealed with grafting wax.
- D. **Bud grafting** is similar to cleft grafting except that a bud instead of a scion is grafted onto each young branch of the stock.
1. Bud grafting may be used when the stock plant has well matured branches suitable for bonsai.
 2. A variety of buds may be used, as in the case of an azalea, to provide a variety of flower colors on a single stock plant.

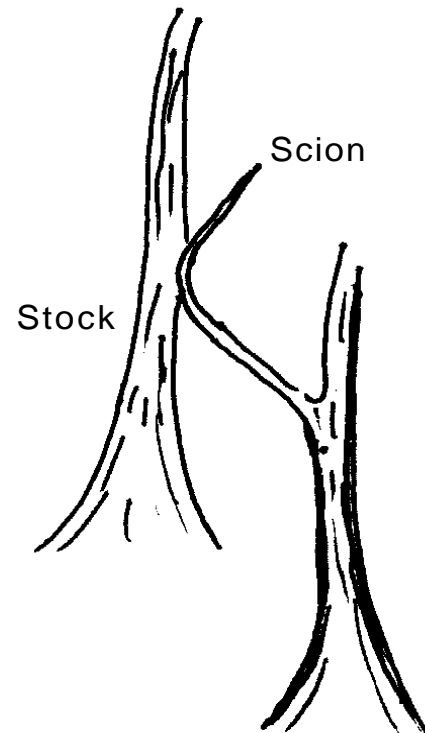
Sources of Material for Bonsai, Continued

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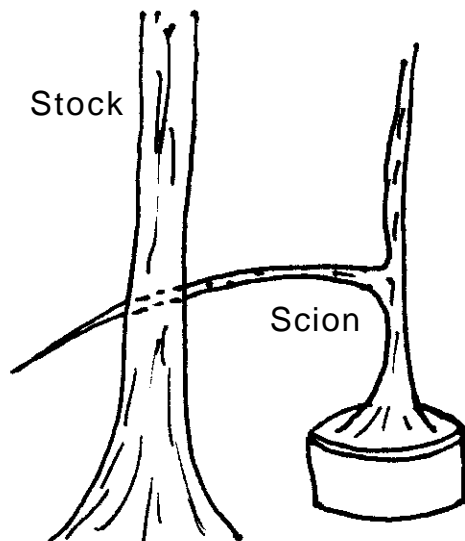
3. Bud grafting is a specialized form of grafting and expert instruction should be obtained prior to attempting to bud graft.

E. **Inarch grafting**, also called “approach grafting”, is a safer grafting method because the scion is not severed from its parent until the graft has taken.

1. Branches may be added where none currently exist.
2. The scion already may be attached to the tree onto which it is to be grafted, or it may be a branch attached to another tree.
3. One method of inarch grafting to create a new branch on a stock plant is to scar an area on both the scion and the stock where the union is to occur, and tie or tape the two scarred areas together.



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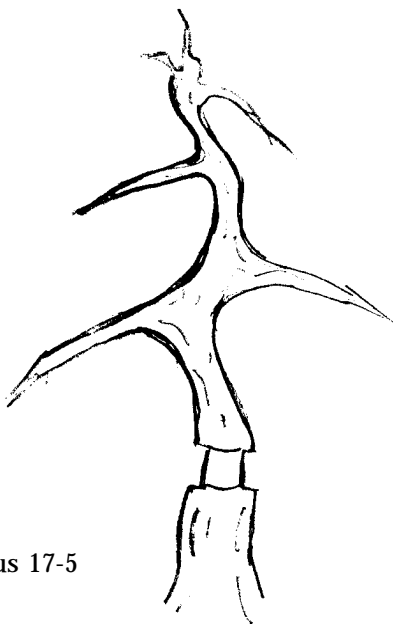
4. Another method which gives a more natural joint, is to drill a hole through the stock plant and to thread the scion through the hole, scarring the scion at the desired point of union.

IX. PROPAGATING BONSAI MATERIAL BY LAYERING

A. Layering is best done in early spring. There are several methods of layering: air layering, tourniquet layering and ground layering.

1. Air layering

- a. Propagation by air layering is done when a branch or the top of a trunk is to be made into a new and separate tree. The air layer creates a new root system for the new tree. A tree in the wild, one in the yard or one in a nursery container may have an air layer applied. There are several air layering techniques, but one of the easiest is the **ring-bark** method.
- b. Decide where the new soil line should be on the new material. That location is the site of the air layer. Prepare a Superthrive[®] solution and soak some sphagnum moss in the solution.



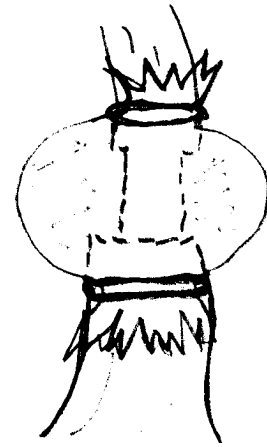
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Prepared stock

- c. Using a clean, sharp knife, cut a ring all the way around the layering site. The cut should go through the bark and the cambium. This will be the soil line for the new material. Make a second cut parallel to the first and about an inch below it. Peel off the bark and the cambium between the two cuts. Scrape away any cambium so that the hard wood is clean.

NOTES

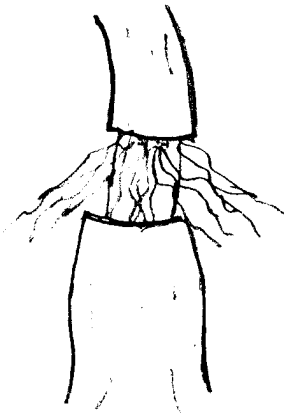
- d. Dust the cambium of the upper ring cut with a rooting hormone. Take some of the Superthrive[®] soaked sphagnum moss, squeeze out the excess liquid and put the moss onto the air layer, covering the entire air layer area. Tie the moss on with twine by criss-crossing the moss covered area. Next cover the entire air layer area with a layer of Saran Wrap[®] and then a layer of aluminum foil, tying it at the bottom and loosely at the top. Flare the foil at the top to act as a water cup. Check that water will flow through the layered area.



Rooting medium secured around cut

Illus 17-6

- e. Water the air layer just as if it were a potted bonsai. The sphagnum moss should not dry out.
- f. Periodically check for roots by removing the aluminum foil. Remember to replace the aluminum foil as roots need darkness. When a goodly number of roots can be seen through the clear wrapping, cut the layer off the plant stock.



Roots developed

Illus 17-7

- g. When the plant is separated from the stock plant, spread the roots evenly around the trunk and adjust the angle at which it leaves the ground. Plant it in a potting soil in a nursery container. Secure the plant within the container to prevent it moving about and breaking newly forming roots.

2. Tourniquet layering.

- a. A tourniquet of copper wire is put around the trunk or branch about an inch below the place where the new roots are desired. This will keep the sap above the tourniquet.

- b. Wrap the area immediately above the tourniquet with moist sphagnum moss and cover with plastic and aluminum foil as described earlier for air layering.
 - c. Monitor and remove the layer as described earlier for air layering.
3. Ground layering.
- a. In ground layering a branch is bent to reach the ground or a pot of soil. The area where roots are desired is scarred, dusted with rooting hormone, buried in the soil and weighted, tied or pegged down securely. An alternative to scarring is to split the branch and inserting a stone to spread the cut, dusting with rooting hormone and burying.
 - b. Monitor and remove the layer as described earlier for air layering.

X. SUMMARY

- A. To be successful, field trips for collecting suitable bonsai material should be planned.
- B. There are several advantages and disadvantages in propagating bonsai material from seed.
- C. Propagating bonsai material from cuttings has several advantages which propagating by seed lacks.
- D. There are several methods of propagating by grafting. The cleft graft leaves the most natural union joint.
- E. Propagation by air layering is a technique of creating roots on a branch or along a trunk to create a new and separate plant.

REFINING BONSAI

Chapter 18

NOTES

I. OBJECTIVES

As a result of studying this section of the *Intermediate Bonsai Syllabus*, viewing audio visual presentations, or participating in other activities provided by an instructor, you will be able to:

1. Define and describe what is meant by refining bonsai.
2. Discuss why it is necessary to re-evaluate the style in which the bonsai was originally made.
3. Explain why the species of the material is of major importance in making refining decisions.
4. Describe faults which may exist with surface roots and means of correcting them.
5. Explain how the trunk's attitude, line and shape are considered in refining a bonsai.
6. Describe special problems which may exist with multiple trunk bonsai.
7. Explain refinement techniques affecting the branches and the foliage of a bonsai.
8. Describe some of the considerations involving the bonsai container and its relationship to the bonsai.
9. Describe how the soil composition and the soil surface are a concern in refining a bonsai.
10. Describe how the method and medium used in displaying a bonsai are a concern in refining a bonsai.

II. GENERAL

- A. Refining bonsai is an ongoing and never ending activity. Bonsai are living and thus ever changing. They grow new attributes, old attributes mature or disappear. The bonsai artist's knowledge and talent also is ever changing. New and different techniques are learned and concepts change.
- B. Refining a bonsai may involve building upon the original concept or it may involve a complete restyling of the material. Refining is done by pruning, grafting, wiring, carving, repotting, and changing the method of exhibiting.

III. REVIEW THE BASICS

- A. Review the earlier discussions on art, aesthetics and harmony in bonsai.
- B. The bonsai was styled in a particular way: upright, slanting, cascade, multiple trunk, forest, etc. Because it was initially styled in a particular manner does not mean necessarily that it is the best style for that material.
- C. Review the components of the basic styles and the variations of those styles. With an open mind, evaluate the bonsai and decide what is the best style and environment for it as a bonsai. Consider:
 - 1. The species and in what styles that species prefers to grow.
 - 2. Surface roots, whether they can be changed, and to what bonsai style they best lend themselves.
 - 3. The trunk line, whether it should be changed, and to what style it best lends itself. Consider whether the trunk should be curved or straight, upright or slanting. Consider whether the trunk is an optimum height for its diameter and branch placement.

Consider the location of the apex; above, to the side, leaning toward the viewer.

4. Consider possible removal of branching and how it affects possible styles. Evaluate the degree of ramification and identify appropriate changes.
5. The container and the placement of the tree in the container, and whether a different size, shape or color container would be more appropriate.
6. The soil surface and ground cover. Consider the contour of the soil and the type and coverage of the ground cover.
7. Auxiliary elements such as a rock to compensate for lack of taper, or the creation of dead wood (jin, shari or uro) on the tree to complement the style or to mask a fault.

IV. SPECIES

- A. In broad terms, each species has a style in which it naturally grows. A pine generally prefers to be upright while a juniper does not mind cascading. Maple, birch, or beech usually have a distinctive full outline.
- B. Understand the style in which the species grows naturally and copy or complement that style when working it into a bonsai.
- C. Each species has climate and soil condition in which it grows best. These should be violated as little as possible when growing the species as a bonsai. Compensation has to be provided if these conditions are grossly altered.

V. ROOTS

- A. Identify faults in the appearance or location of surface roots and determine if correction is possible.

1. A root growing directly toward the front, assuming the current front is to be kept, may be wired to one side or the other, or it may be appropriate to remove it.
2. If an additional root is needed consider an inarch graft of a seedling to the bonsai's trunk base. Once the graft has healed, the portion of the seedling above the graft is removed and the remainder develops as a root.
3. If a necessary root is missing, the fault might be disguised by placing a rock where the root should have been.
4. Light should not be seen below a surface root; it should appear to be well anchored and attached along its length to the soil.

VI. TRUNK

A. Attitude

Evaluate whether the trunk, based on the style, should be upright or slanting to one side or the other. Incline the apex slightly toward the front.

B. Line

Most trunks have curves and bends. Turn the tree and determine the best view which takes advantage of those curves. Generally that view which best shows the visual and physical movement will be the front of the bonsai. At the same time consider the current or potential placement of branches as they affect the "best view".

C. Length

The trunk may be too long, making the tree too tall for its other proportions. Such inappropriate proportion may be its height to girth ratio or its height to lower branch placement ratio. If it is appropriate to reduce the height of the tree by shortening the length of the trunk, decide

whether the top is to be removed completely or is to be converted to a dead wood jin. In most cases it will be necessary to develop a new living apex. Locate a small branch on or near the front below the desired new height. Either:

1. Wire that front-facing branch upright and remove the remainder of the trunk above, making a 45 degree cut facing the rear of the tree. Or,
2. Bend the front-facing branch upright and tie it to the portion of the trunk above it and remove the remainder of the upper trunk not needed in the training of this new apex. When the new apex has grown into its new upright posture, remove the remainder of the trunk above, making a 45 degree cut facing the rear of the tree.

C. Shape - Diameter, Taper and Special Effects

1. The trunk of most bonsai should be thick in proportion to its height and have a taper. Taper means that the trunk should have a thick diameter at the base which gradually diminishes toward the top. Bonsai with slim trunks which are planted in bonsai containers do not develop thick trunks nor do they develop taper.
 - a. A reverse taper is a condition in which the diameter at the base begins to decrease higher up and then increases followed by another decrease. This unwanted increase (bulge) is often the result of the presence of two or more branches growing from that point. They cause additional nutrients to increase the diameter of the trunk, causing a bulge.
 - (1) The continued development of a reverse taper may be stopped by removing one or more of the excess branches growing in the vicinity of the bulge.

- (2) The trunk diameter between the base and the bulge may be increased to reduce or eliminate the bulge by growing several sacrifice branches from the area whose diameter is to be increased. These should be permitted to grow unchecked. When the diminished diameter area has increased sufficiently in girth, the sacrifice branches are removed.
 - (3) The bulge may be hidden by the foliage of a small branch.
 - (4) The decrease of taper below the bulge may be compensated for by placing a rock along the lower trunk giving the illusion that it is thicker. It may also be hidden by planting a small fern or dwarf mondo grass along one side of the trunk.
- b. A small diameter trunk may be increased by planting the material in the ground or in an oversize nursery container, fertilizing well and limiting if not eliminating pruning. Branches increase trunk girth up to their point of attachment. The oversize nursery container is necessary to provide space for the additional roots needed to support the increase in foliage.
 - c. Taper may be increased by growing sacrifice branches from the area whose girth is to be increased. It may also be increased by removing a portion of the upper trunk and growing a new leader with a smaller diameter, providing a diminished taper in the new growth area.
2. Special effects on a trunk may include the introduction of dead wood to a portion of the trunk. Detailed information on the use of dead wood on bonsai is covered in the *Driftwood Style Bonsai* chapter in this *Syllabus*.

D. Texture and color

The texture of the bark can be enhanced by avoiding peeling exfoliating bark. Color can be enhanced on some species by gently brushing the surface with a brass brush to remove surface dirt and discoloration.

E. Multiple trunks

The trunks of *Two-trunk* style and *Twin-tree* style bonsai should complement each other.

- a. The trunks should be of different height and girth. The shorter trunk should be either one third or two thirds the height of the taller trunk, and it should have a proportionally smaller girth.
- b. The smaller trunk should attach to the larger trunk at or close to the soil surface.
- c. The smaller trunk should be either forward or toward the rear of the larger trunk. Their bases should not be equal distance from the viewer.
- d. Additional information is covered in the *Two-Tree and Twin Trunk Style Bonsai* chapter in this *Syllabus* .

VII. BRANCHES and FOLIAGE

- A. The longest and thickest branch should be the lowest branch. Girth may be increased in a lower branch by permitting a “**sacrifice leader**” to grow from the branch. When a satisfactory diameter is achieved the leader is removed.
- B. If the trunk is curved, the branches should be curved to complement the trunk shape. Wire to shape.
- C. Each higher branch should be proportionally shorter. After wiring and bending, prune the length of the

branches to establish the outline of an asymmetrical triangle for the tree.

- D. Each higher branch should be smaller in diameter. If higher branches have too great a girth, consideration should be given to removing them and growing or grafting a replacement.
- E. The space between the points of attachment of each higher branch should decrease. This is a consideration when removing branches.
- F. Converging, overlapping and crossing branches should be corrected.
 - 1. Straight lines should generally be avoided.
 - 2. Diagonals may be a major distracting element and should either be avoided or controlled.
 - a. Diagonals generally make humans uncomfortable because they are not static; they generate stress.
 - b. A diagonal leads the eye into space, away from the horizontal and the vertical.
 - c. A diagonal in a composition may be controlled by:
 - (1) Being removed.
 - (2) Being linked as the diagonals in a *broom* style bonsai are linked by the outline of the foliage.
 - (3) Having their direction altered as when a plunging branch's tip is bent upward.
 - (4) Being countered by a reverse elsewhere in the composition as is done in a *slanting* style bonsai.

- (5) Reducing its energy by having foliage pads break up the line.
- G. The basic shape of each branch is the asymmetrical triangle. View each branch from the top and create a long side and a short side.
- H. Rear branches are necessary to create depth in the planting. They should not go directly to the rear, being hidden behind the trunk. Rather, they should be angled to the left rear and to the right rear.
- I. Most species have a tendency to develop an overly full apex, one with too much ramification. Thinning of the branches in the crown is a continuing requirement.
- J. Develop twiggy on the branches. This process of ramification creates secondary, tertiary, quaternary, etc., branches. Systematic pruning (grow and clip) forces dormant buds along the branches to sprout creating a network of smaller branches and a pad of foliage.
1. Many years ago a group of bonsai growers in Lingnan in Kwangtung Province in southern China developed a method of training bonsai by alternately allowing them to grow and then clipping much of the new growth. Their technique, known as the *Lingnan* style, or just “grow and clip”, may be used for the entire formation of a bonsai, for the development of a particular portion of a bonsai or for general ramification.
 2. When refining the branches on a bonsai allow a branch to grow until it reaches the desired size proportion or until it has five or six mature leaves. Then cut it back to leave just one or two. This forces additional secondary and tertiary growth which is allowed to grow until it too reaches the desired size proportion. Then it is cut back. This process continues and each time additional secondary, tertiary and quaternary growth is stimulated creating ramification.

3. Cut the shoots back harder in the upper parts of the tree.
 4. In broad-leafed, deciduous species, the pruning process can be coupled with leaf cutting or defoliation to reduce the tree's growth rate and to increase twigginess and leaf numbers.
- K. Leaf pruning (defoliation) is a refinement technique which removes all or part of the foliage. Defoliation may be done for aesthetic reasons or to reduce the leaf size.
1. Unsightly, dead or damaged leaves are removed to enhance appearance. Leaf damage may have been caused by wind, heat, insects or by mechanical damage.
 2. The size of leaves on most broad leafed deciduous species may be reduced by defoliation. The leaves of the new growth will usually be smaller.
 3. The leaves may be removed three to four weeks after they sprout if there are developing buds at the leaf axils. Insure that the tree is healthy, is growing strongly, and has been well fertilized. Some growers prefer to not remove all the leaves at one time but to space it out over two or three weeks.
 4. Tropical species of material may be leaf pruned any time of the year if they are healthy and protected from stress.
 5. After a tree has been defoliated, it is a good time to re-appraise the branch structure and to make necessary corrections. It may be appropriate to replace some older branches with more suitable finer new ones.
 6. When a tree is without leaves it reduces its intake of water from the soil. If it is over watered the roots may become water logged and rot.

7. Conifers and most other evergreen species should not be leaf stripped. Rather, single, overly large leaves can be removed.

L. If there is a dead tree in a forest planting, consider bleaching the wood and leaving the tree in the composition.

VIII. CONTAINER

A. The type of pot should complement the style and species of bonsai.

1. Glazed pots are usually used for flowering, fruiting or leaf color changing species or to complement bark color.

2. Unglazed pots are usually used for conifers.

3. Pots which are deeper than they are wide are for cascade style bonsai.

4. Square or rectangular shaped unglazed pots are most often used for “masculine” appearing species such as conifers which have a relatively strong, powerful and rugged appearance.

5. Round or oval shaped glazed pots and rectangular shaped glazed pots with rounded corners are most often used for “feminine” appearing species such as broad leaf material which have a relatively soft, delicate and rounded appearance.

B. The size of the pot should be in proportion to the size of the bonsai.

1. As a guide the length (long side) of a pot may be equal to about two thirds either the height of the tree or the width of the foliage mass, whichever is greater.

2. The width (front to rear) of the pot should be slightly less than the spread of the branches above it.
 3. As a further guide, the depth of a pot may be equal to the diameter of the base of the trunk.
 4. There are many exceptions to these guidelines. The major exception is when a pot simply “looks right” with a particular bonsai.
- C. The container should be clean. If mineral deposits are on the pot, the bonsai should be removed, the pot washed and soaked in undiluted Lime Away ®. Again wash the pot and scrub any residue. If the bonsai is being prepared for an exhibit, the exterior of the pot should be lightly wiped with baby oil on a cloth to improve the surface appearance.

IX. SOIL

- A. The base of the tree should be on a slight mound so that the soil surface slopes upward toward the base. At the edges of the pot the soil should be below the inside edge of the container to provide for water retention. Throughout the surface some variation in the elevation is desirable rather than having a flat plane.
- B. Insure that the soil is a proper mixture for the species of material and for the growing conditions and that unsightly additives are not visible on the soil surface.
- C. A ground cover should be on the soil surface as an aesthetic complement to the bonsai.
1. Ground covers aid the illusion of age and provide a transition of color and texture from tree to container. Functionally ground cover retards erosion and assists in retaining moisture in the soil. The type of ground cover used must be in scale with the size of the plant and be shallow rooted. It is acceptable to use more than

- one type of ground cover if it does not detract from the composition.
2. Moss is the most common ground cover. Moss for bonsai should be gathered from other bonsai containers or from sunny locations in nature. It should be planted in small swatches or plugs much as plugs of grass are placed in a lawn.
 - a. Make a small hole, pinch off a small piece of moss and insert it into the hole.
 - b. Spread soil over the edges of the moss to retard drying out and the water.
 3. Moss, or any other ground cover, normally should not cover the soil surface completely. If there is a blanket of ground cover, aeration may be retarded and it is difficult to gauge the dryness of the soil. Additionally, ground covers should not be permitted to grow on the trunk of the tree as they tend to induce rotting.

X. DISPLAYING

- A. The display area should be clean, uncluttered and each bonsai should “have its space”.
- B. The background should be relatively neutral and not detract from effectively seeing the plant material.
- C. Interesting rocks, companion plantings, etc., might be displayed with the bonsai.

XI. SUMMARY

- A. Refining a bonsai involves a variety of activities and skills beginning with evaluating the style which is appropriate for the particular bonsai.
- B. The species of the material is of major importance in making refining decisions.

- C. A variety of faults may exist with surface roots, the trunk's attitude, line and shape.
- D. Multiple trunk bonsai have special problems.
- E. Refinement of the branches and the foliage on a bonsai is important
- F. The bonsai's container must be considered in its relationship to the bonsai.
- G. Soil composition and the soil surface are a concern in refining a bonsai.
- H. The method and the medium used in displaying a bonsai are a concern in refining a bonsai.

DISPLAYING BONSAI

Chapter 19

NOTES

I. OBJECTIVES

As a result of studying this section of the *Intermediate Bonsai Syllabus*, viewing audio visual presentations, or participating in other activities provided by an instructor, you will be able to:

1. Discuss the importance of the four factors which need to be kept in mind when displaying bonsai (the tree, the background, the stand and the container).
2. Describe several types of bonsai display stands which may be constructed for private collections.
3. Describe some of the considerations in preparing the tree itself for display in a public exhibit.
4. Discuss the type of background which should be used behind bonsai in a public exhibit.
5. Discuss the importance of the base or stand on which bonsai are placed in a public exhibit.
6. Describe some of the considerations in preparing a bonsai's container for display in a public exhibit.

II. GENERAL

A. Whether bonsai are being displayed for one's own personal pleasure or whether they are being shown in a public exhibit, the manner of display affects the overall impact which the bonsai has on the viewer.

- B. The bonsai artist who creates and maintains bonsai for his personal pleasure usually displays his bonsai in an informal manner. Nevertheless, there are some considerations which need to be understood to optimize both the health of the bonsai and the aesthetic appreciation by the viewer.
- C. The public exhibit of bonsai is a privilege. Bonsai are placed on display as things of beauty to be admired by the viewer. They also foster the dissemination of information about bonsai. Most bonsai growers will, at some time in their growing experience, submit one or more of their bonsai for exhibit; to be seen and appreciated by others. There are several factors which affect the value of that display and need to be considered when mounting an exhibit.
- D. First we will consider the informal display of bonsai in a private collection.

III. DISPLAYING BONSAI IN A PRIVATE COLLECTION

A. Growing Area

1. The first consideration when deciding on the location in which to keep a private collection is the horticultural needs of the plants. Sunlight, protection from wind and salt spray, pollution, reflection of light and heat, and the availability of water, all affect how well the horticultural needs of the plants will be met.
 - a. Whatever amount of sunlight the plant needed before it became a bonsai, is still needed. A full-sun plant such as a juniper or a pine, needs full sun as a bonsai. Plants which will live under reduced light conditions can be grown under reduced light, but generally speaking, the more light a plant gets the smaller its leaves will be; a decided advantage in bonsai.

- b. Wind dries the plant foliage and increases the evaporation of moisture from its container.
 - c. Some plants are not salt tolerant and will not tolerate the salt spray in the air near the seashore.
 - d. Plants grown on a concrete patio or near a concrete wall will be affected by the reflection of light, and therefore heat, from the concrete.
 - e. If there is a source of water readily available, watering will tend to be more regular and timely.
2. Human activity around the bonsai should be limited; a volley ball hitting a bonsai does not make for a happy bonsai.
 3. Animal activity can damage bonsai. Cats tend to eat foliage; squirrels bury nuts in pots and then come looking for them, birds look under moss for insects, and male dogs have difficulty differentiating a bonsai growing at ground level from a fire hydrant.
 4. If it is absolutely essential that bonsai be grown indoors, the area and its facilities should be carefully chosen.
 - a. The area should not be in the direct line of forced air cooling and heating vents. Nor should bonsai be in close proximity to radiant heating devices.
 - b. The level of light available, artificial as well as light from outside, must be sufficient to sustain photosynthesis in the plant. If the level of light varies from one part of the plant to another, the plant needs to be rotated frequently to provide even distribution of light.
 - c. The amount of light, and darkness, which the bonsai receives, should approximate that which it would have in its native environment.

- d. Misting of plants should be avoided to reduce the opportunity for fungus to develop.
 - e. Insects can attack a plant indoors just as easily as when outdoors; insect checks need to be made periodically.
- B. Security, Theft Protection and Recovery
- 1. Bonsai should not be obvious from the street or other public access areas. The display and growing areas may be fenced with opaque material.
 - 2. A second floor balcony or sun deck may be appropriate to put the bonsai out of easy reach.
 - 3. Trees may be wired into their containers and the containers wired to the display bench.
 - 4. A security system to detect an intruder may be warranted. These are available in several forms which activate area lights or which set off a silent or audible alarm.
 - a. Perimeter sensors may be installed along the fence which detect body mass near the fence.
 - b. Magnetic make-break detectors on gates which send an alarm when the contact is broken.
 - c. Infrared motion detectors can be used to cover the area occupied by the bonsai.
 - d. Pressure sensitive detectors may be installed under the container; they signal an alarm when the container is lifted.
 - e. A barking dog.

5. Do not “advertise” to the general public that you have a bonsai collection. Avoid using automobile license plates declaring your love of bonsai. Be cautious about being mentioned in the local press. Do not identify owners of bonsai in public exhibits.
6. When transporting plants, do not leave them openly on display in your vehicle.
7. Still photographs or video tapes of plants in the collection will not prevent theft but will be invaluable in preparing “Wanted” posters and in identifying and proving that recovered plants are yours.
8. Indelibly marking the inside of a container with the owner’s social security number, driver’s license number and state, phone number, etc., can assist in recovery of stolen material.
9. Attach an identifying aluminum tag to a main root of the plant or, place a plastic plant label inscribed with waterproof ink in the pot when repotting.

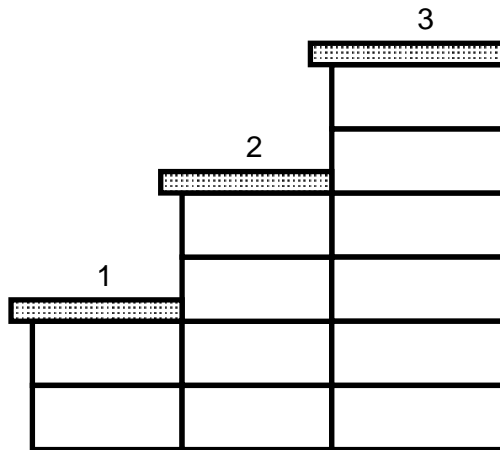


Displaying Bonsai, Continued

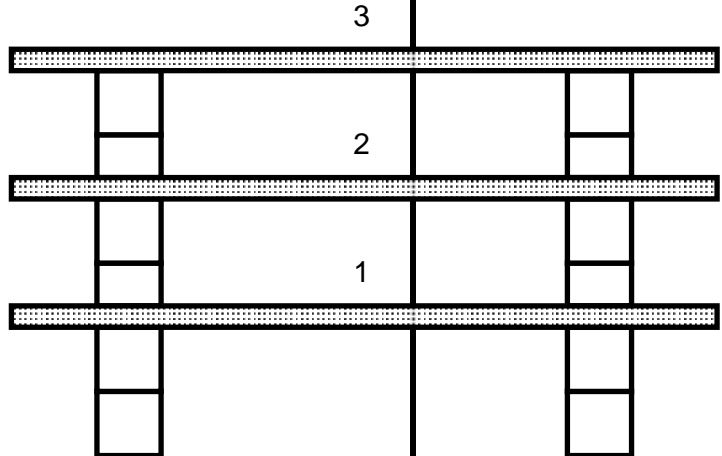
NOTES

B. Shelf supports

1. Most bonsai will be grown and displayed on shelves holding several trees. A simple type of shelf support consists of concrete blocks set in a stair-step formation with shelving on top of the blocks.



Side View of
Concrete Block Stand



Front View of
Concrete Block Stand

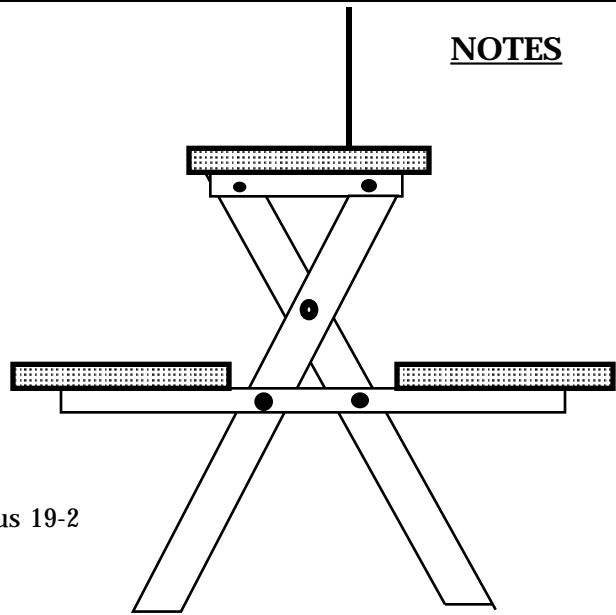
Illus 19-1

2. An alternative to concrete block is to use different lengths and diameters of fire place chimney liners.

Displaying Bonsai, Continued

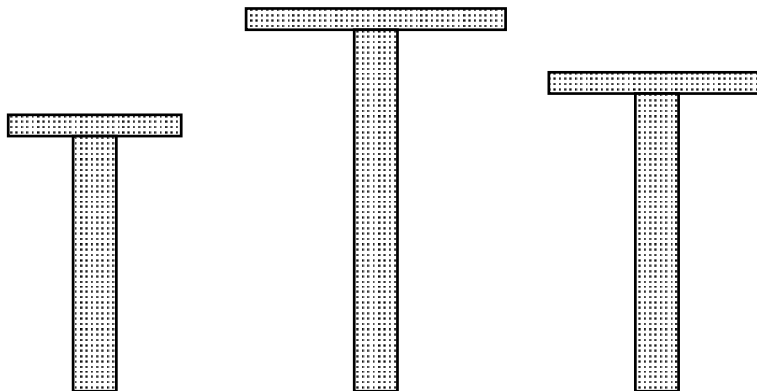
- Another type of support is a pair of wooden "A Frame" supports with three shelves. The two "A Frames" are attached together with a pair of 1" x 4" horizontal boards to prevent side sway.

Illus 19-2



Side View Wooden Shelf Support

- Individual stands may be appropriate. The upright should be 4" x 4" pressure treated material securely set into the ground with a flat shelf firmly attached to the top.

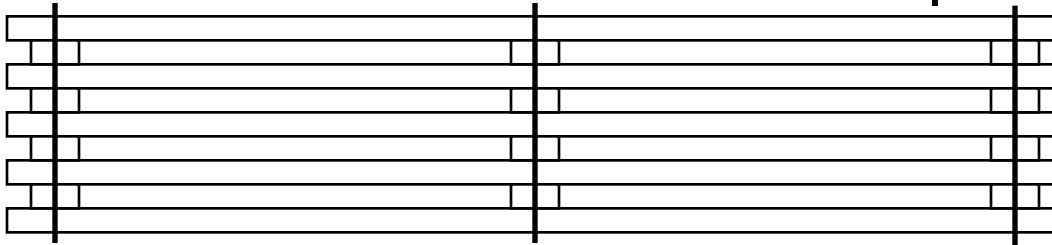


A Grouping of Individual Stands

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C. Shelving

1. Boards or planks may be used as shelving. However, an alternative which provides better drainage and air circulation is to construct a slatted shelf. Materials



Top View of a Slatted Bonsai Shelf

Illus 19-4

include:

- a. 1" x 2" x 6' to 8' long strips of pressure treated wood. Commercially available furring strips provide a source of ready made slats. Alternatively, wider planks can be rip sawed to create the slats.
- b. 1" x 2" x 4" pieces of the slat material as spacers to separate the slats. They can be cut from scraps or from an extra slat.
- c. The slats and spacers can be attached together with threaded rods and nuts. In the example shown of the slatted bonsai shelf, a hole was drilled through the slats and spacers, and a washer and a nut were put on each end of the threaded rod.
- d. The hole through the pieces of the shelf may be drilled using a power drill and a long drill bit. The slats and spacers should be clamped together. Care must be taken to drill the hole level and through the centers of the pieces of wood.
- e. An alternative to drilling a hole would be to attach three spacers to a slat using galvanized screws.

Then attach a second slat to the three spacers.
Continue this process until the shelf is completed.

IV. DISPLAYING BONSAI IN A PUBLIC EXHIBIT

- A. Four factors need to be kept in mind when displaying bonsai: the tree itself, the background behind the tree, the base or stand on which the tree is placed, and the container in which the tree is planted.
- B. The tree. First and foremost consideration must be given to the tree because it is the whole purpose for the exhibit.
 1. The tree must be healthy and not show any evidence of dead or dying tips, pest infestation, sun or wind burn, or wire damage. Jin and shari (dead wood) should be bleached with a lime sulphur solution. The leaf color should be uniform and the same color as a specimen grown in the ground. Any oversize, damaged or off-color leaves should be removed.
 2. Surface roots should radiate outward, but not directly forward, and should not cross each other or be unnaturally exposed with space beneath. The soil surface should be free of debris. Moss, if any, should be healthy and clean.
 3. The trunk should be positioned appropriately in the container for the tree's style, usually off center. The lower third should be quite visible and have a nice taper. Branches which cross the trunk line should be at a minimum.
 4. The primary branches should be arranged to the left, right and rear, avoiding "T" or "bar" branches and crossing branches. Foliage growing on the underside of branches should be removed.
 5. Secondary branches should radiate sideways with no downward growth and with limited upward growth.

6. Any wiring should be neat and as unobtrusive as possible.
7. Provide both the correct botanical and common names to the viewer.

C. The Background

1. After the tree comes the background. If the background is inappropriate even the best prepared tree cannot be seen to full advantage.
2. The tree should be displayed in front of a wall, screen or other hanging of neutral color which will not conflict and compete with the tree. There should be little or no pattern in the background in order that the lines of the tree may be seen clearly.

D. The Display Base

Next, the base upon which the tree is placed should be considered. Some type of a base or stand should be used under the tree. It may be a mat, a slab, a low display stand, or a box which is in proportion to the tree/pot and which harmonizes with the style of the tree.

E. The Container

1. Finally, the container, which is to the bonsai as a picture frame is to a painting, is considered. It has to be in proper proportion to the tree and it should compliment the style, shape and color of the tree. As an example, if the tree is soft and rounded, the container, including its feet, should evoke a similar feeling.
2. The container must be clean and lightly oiled with baby oil.
3. Any secondary plantings, rocks, etc. within the container must be in scale with the tree and not detract

from the tree itself. Ceramic figurines are usually not displayed in the container with a bonsai.

F. When setting up a display of several bonsai:

1. The table cover should be neutral and without pattern like the background.
2. Avoid crowding the table with too many plants. Space is as important as are objects.
3. Try to arrange the trees in groups of three. Each group should be in the form of a scalene (uneven) triangle when viewed from the front and when viewed from directly overhead. The bonsai in the grouping should be of different heights and one should serve as the focal point for its grouping.
4. A singly displayed bonsai may have a decorative rock or a complimentary companion planting shown near it.
5. Care should be taken in placing plants so that texture and shape compliment each other rather than detract from each other.
6. Ideally bonsai should be viewed at eye level and this should be taken into consideration when setting up an exhibit.

G. Plants displayed indoors need to be watered daily, taking care to not allow water to drain onto and damage the stands. Consideration might be given to exchanging plants in the display to prevent damage due to lack of light and humidity.

H. Small name tags may be displayed unobtrusively near each plant. Information on the tags should identify the plant specie and common name and may include the number of years that it has been in training. The age or approximate age should NOT be given. Remember that

bonsai is an art of illusion, and one of the illusions is that of great age. It is also not a good policy to display the name of the plant's owner as this can subject that person to subsequent theft and burglary.

I. Judging

1. If the bonsai are to be judged, consideration should be given to arranging for a qualified judge from outside the organization to which the plant owners belong.
 2. An excellent and reasonably impartial guide for judging is a publication by the American Bonsai Society titled: Bonsai Manual for Appreciating, Judging and Buying Bonsai, 4th Edition.
- J. When it is time to remove the plants from the display, a representative of the bonsai organization must be present to insure that only authorized persons remove plants.

V. SUMMARY

- A. Four factors (the tree, the background, the stand and the container) need to be kept in mind when displaying bonsai.
- B. There are several types of bonsai display stands which may be constructed for the display of private collections.
- C. There are various considerations in preparing the tree itself for display in a public exhibit.
- D. There are several things to take into consideration when preparing a bonsai's container for display in a public exhibit.

APPENDIX A

Recommended Audio Visual

35 mm Slide and Cassette Tape Programs



Group Planting

The first half of this program was commercially produced and shows the selection and preparation of material for and the creation of group plantings. The second half shows examples of the group planting style. 80 slides with 16 minute cassette tape and printed script.

Harmony in Bonsai

An 80 slides with 25 minute cassette tape and printed script. It analyzes the various elements which influence the success or failure of a bonsai composition. Topics included are: understatement, perspective, line, visual movement, visual mass, rhythm of movement, the soul and spirit of a work, and balance as used in creating bonsai and the display of bonsai.

The program is available on a rental basis from the AV Program of BCI and it is available for purchase from the author.

How to Select a Container

A 96 slide program with a 28 minute cassette tape and a printed script. It provides in depth advice for selecting the proper clay pot while considering color, texture, size, shape and species of tree. Extensive examples are used.

The program is available on a rental basis from the AV Program of BCI.

Introduction to Bonsai

An 80 slide program with a 20 minute cassette tape and a printed script. The program covers the definition of bonsai, sources of bonsai material, the history and the evolution of bonsai and bonsai design considerations. It continues showing and describing the five basic classical styles of bonsai and concludes with examples of the many variations on the five basic styles.

The program is available on a rental basis from the AV Program of BCI and it is available for purchase from the author.

Literati Bonsai

This program covers the basic principles of literati (bunjin) style bonsai. Each principle is illustrated with examples of Chinese literati painting, line drawings to show the technique as it is applied to a bonsai and photographs of literati style bonsai. 80 slides with 24 minute cassette tape and printed script.

The program is available on a rental basis from the AV Program of BCI.

Mamé Bonsai

Defines terms used for various sizes of miniature bonsai. Shows examples from Australia, Japan and USA of very small bonsai along with their accessories. Line drawings are used to describe how to create such bonsai. 80 slides with 33 minute cassette tape and printed script.

The program is available on a rental basis from the AV Program of BCI.

National Bonsai Collection

An 80 slide program with a 27 minute cassette tape. National Bonsai Collection, which is housed in the National Arboretum in Washington, DC, was photographed in 1986 by the Official Photographer of Bonsai Clubs International. The trees, all of which were donated to the United States by Japan in 1976, are shown along with their environs.

The program is available on a rental basis from the AV Program of BCI and it is available for purchase from BCI.

National Collection of North American Bonsai

A 56 slide program with a printed script. The National Collection of North American Bonsai, which is housed in the National Arboretum in Washington, DC, was photographed in 1991 by the BCI Official Photographer. The trees were all developed in the United States and donated by their American owners.

The program is available on a rental basis from the AV Program of BCI.

Penjing (Chinese Bonsai)

Describes various styles of penjing and the grow-and-clip method of training. Penjing techniques are compared with the literati style of painting. A segment shows a portion of the Montreal Botanical Garden's penjing collection. It concludes with 31 slides of the penjing collection donated to the USA in 1986. 140 slides with 45 minute cassette tape and printed script.

The program is available on a rental basis from the AV Program of BCI.

Some Considerations on Chinese Bonsai

This is a detailed study of trees in Mr. Wu's book, *Man Lung Artistic Pot Plants*. It shows how Chinese bonsai differ from Japanese bonsai in style as well as in name. 80 slides with 35 minute cassette tape and printed script.

The program is available on a rental basis from the AV Program of BCI.

Wiring Bonsai

An 80 slide program with a 27 minute cassette tape and printed script. The types of wire appropriate for bonsai and the methods of maintaining wire, along with the purpose of wiring, are discussed. The mechanics of wiring bonsai are shown in detailed sketches and photographs.

The program is available on a rental basis from the AV Program of BCI and it is available for purchase from the author.

Video Tape Programs



Art of Bonsai, Part 1, Informal Upright Style

Yoko Bennett of Sydney, Australia, presents a comprehensive guide to creating and caring for an informal upright bonsai. 55 minutes.

The program is available on a rental basis from the AV Program of BCI.

Basic Bonsai Care I : Northern Hardy Evergreen & Deciduous Trees

Bob Johnston of Pennsylvania discusses pots, soil mixes, watering, feeding, and winter care of northern hardy evergreen and deciduous trees. 25 minutes.

Bonsai : An Introduction to the Art of Bonsai

This program by the Puget Sound Bonsai Association covers the meaning of the word *Bonsai*, its history, and shows the five classical bonsai styles. It discusses where to see bonsai, how to get bonsai and types of plant material, concluding with a bonsai demonstration. 18 minutes.

The program is available on a rental basis from the AV Program of BCI.

Bonsai Design Series, Vol 1, Forests.

Warren Hill of the U. S. National Arboretum covers the various styles and techniques of selection, preparation, arrangement and care of multiple tree compositions. The work is expanded in his Vol #2. 72 minutes.

The program is available on a rental basis from the AV Program of BCI.

Bonsai Design Series, Vol 2, Forests in the Making.

Warren Hill of the U. S. National Arboretum made this video to complement and to provide the catalyst for applying the information in his Vol #1. He creates two forest compositions. One is made from collected larch and the other is nursery grown trident maple. 58 minutes.

The program is available on a rental basis from the AV Program of BCI.

Bonsai for the Beginner

This is a 1 hour commercial program produced in Australia by Georgina Kretschmar. It covers the basic steps to get started in bonsai, beginning with definitions and ending with the potting of a demonstration tree. 60 minutes

The program is available on a rental basis from the AV Program of BCI. It is available for purchase from: The Dancing Crane Art & Bonsai Studio, P.O. Box 32, Pendle Hill 2145, Australia.

Bonsai: The Art of Training Dwarf Potted Trees

This program production by the Brooklyn Botanic Garden which describes the history of bonsai and relates bonsai to trees in their natural state. A nursery stock tree is styled and potted. It concludes with an explanation of the maintenance necessary for bonsai. 22 minutes.

The program is available on a rental basis from the AV Program of BCI. It is available for purchase from: The Brooklyn Botanic Garden, 1000 Washington Ave., Brooklyn, NY 11225.

Claft Style Group Planting with Hal Mahoney

Hal Mahoney of Long Island creates a group planting style bonsai from a single plant. The claft style is a combining of the clump and raft styles. Individual branches of a clump style cotoneaster are wired, bent horizontally along the ground as a raft, placed where needed and then the ends are bent upright to form vertical trees, creating the appearance of a forest. 64 minutes.

The program is available on a rental basis from the AV Program of BCI.

Designing a Bonsai

A 1 hour program filmed in a television studio by the author. It provides a brief history of bonsai and a discussion of bonsai rules. The bulk of the program is a lecture and demonstration of the principles of designing bonsai. It concludes with the selection of an appropriate container and potting of the demonstration tree. 60 minutes

The program is available on a rental basis from the AV Program of BCI.

Grow Successful Bonsai: A Step by Step Guide, Vol 1

Peter Adams of England discusses the bonsai image and what to look for, starting off in bonsai, tools and how to use them, wiring, pots, potting and bonsai soil, cuttings and fertilizers, watering, and developing shape by refining and pruning the structure. He concludes with specific information on formal upright, informal upright and broom style bonsai. 60 minutes.

Grow Successful Bonsai: A Step by Step Guide, Vol 2

Peter Adams of England discusses the art of bonsai, the collection and maintenance of wild bonsai material, styles of bonsai and how to achieve them, developing the image and hard and soft pruning of deciduous and evergreen species. He concludes with a detailed coverage of the group style. 60 minutes.

Both Volume 1 and 2 are available on a rental basis from the AV Program of BCI. They are available for purchase from: Mrs. Sheila Adams, Cherry Trees, 22 Burnt Hill Rd., Wrecclesham, Farnham, Surrey, GU10 4RX, UK.

Growing Art of Bonsai, The

Canadian bonsai artist Arthur Skolnik leads the viewer to a wide variety of locations, talks to professional bonsai growers and hobbyists, and gives practical demonstrations in many techniques needed to successfully grow a bonsai. 58 minutes.

The program is available on a rental basis from the AV Program of BCI.

Introduction to Bonsai, Vol 1

Mary Corrington, a bonsai teacher from Oregon, presents an answer to the question, "What is Bonsai". She does this by explaining the concept of bonsai and does not try to demonstrate the process by which a bonsai is created. 30 minutes.

The program is available on a rental basis from the AV Program of BCI.

Kei Do: The Way of Display and Appreciation, Vol 1

Appendix A, Recommended Audio Visual, Continued

A commercial production providing an introduction to "Kei Do" in which space is filled with elegant staging to recreate nature in miniature. In a limited space a tone of nature and living things is expressed. In this program the art of display and spring and summer displays are covered. 45 minutes.

The program is available on a rental basis from the AV Program of BCI.

Kei Do: The Way of Display and Appreciation, Vol 2.

A commercial production showing autumn and winter displays as well as the display of suiseki. 45 minutes.

Literati Bonsai

This program covers the basic principles of literati (bunjin) style bonsai. Each principle is illustrated with examples of Chinese literati painting, line drawings to show the technique as it is applied to a bonsai and photographs of literati style bonsai. 24 minutes.

The program is available on a rental basis from the AV Program of BCI.

National Bonsai and Penjing Museum, The

A 1993 compilation of pictures of all the trees and viewing stones in the Bicentennial, N. American, and Penjing collections at U.S. National Arboretum, Washington, D.C. 27 minutes.

The program is available on a rental basis from the AV Program of BCI.

APPENDIX B

GLOSSARY OF TERMS

ABS	American Bonsai Society. A national organization of member clubs and individuals which have an interest in bonsai.
Aesthetics	“The theory of the fine arts and of people’s responses to them; the science or that branch of philosophy which deals with the beautiful; the doctrine of taste.” (Webster’s New Twentieth Century Dictionary.)
Aging	In bonsai it is the visual cues which give bonsai the illusion of an age greater than actual.
Anneal	To subject a material, such as copper wire, to a process of heating and slow cooling in order to toughen and reduce brittleness. The process of annealing copper wire restores its original molecular structure making it more pliable.
Apex	The top or crown of the tree.
Apical	Relating to the apex. Apical dominance refers to the tendency of a plant to provide a large share of food to the development of its apex or branch tips.
Asymmetrical balance	A type of balance created through asymmetry or imbalance. The elements combine to effect balance without displaying static balance.
Attitude	The angle of the trunk which may be upright, slanting, cascading, etc.
Auxin	Any of several plant hormones that affect growth by causing larger, elongated cells to develop.
Axillary buds	Dormant buds which stand ready to replace a nearby leaf or branch.
BCI	Bonsai Clubs International. An international organization of member clubs and individuals which have an interest in bonsai.
Back of tree	That portion of the tree opposite from the front. Normally it will have branches originating there to create depth.
Bar branch	A pair of branches which originate at the same general location on a trunk which may cause a swelling of the trunk which detracts from its tapering.
Bonkei	Miniature landscapes using artificial trees, rocks, moss, statuary, etc.
Bonsai	Literally a tree in a tray. Aesthetically, a miniature representation of a mature tree in nature.
Bonsai-in-training	Plant material which has been placed in a bonsai container but still needs more

Appendix B, Glossary of Terms, Continued

	extensive training before it is ready to be shown as a bonsai.
Branch	Lateral extensions of a trunk. Primary branches grow from the trunk. Secondary branches grow from primary branches.
Broom style	A bonsai style with a short, straight trunk whose foliage looks like an upside-down broom.
Bunjin style	The Japanese term for literati style bonsai. See literati.
Calcinated clay	Kiln-fired clay which is ph neutral and is highly water absorbent. Kitty litter is an example of calcinated clay.
Cambium	A layer of cells in the stems and roots of a tree that makes new wood and bark.
Cascade style	A bonsai style in which the trunk bends sharply down and the tip of the cascade is below the feet of the container.
Chlorosis	A condition in plants in which they lose their green color or turn yellow.
Claft style	A type of raft style bonsai in which a plant, growing as a clump with many trunks, has those several trunks first trained horizontal in the soil and then upright to appear to be individual trees. Bonsai artist Hal Mahoney of New York has termed this style bonsai a claft style. "Cl" for clump and "aft" for raft
Clump style	A bonsai style which has one root system and more than three trunks.
Concave cutter	A tool with a curved blade for making concave cuts.
Conifer	A cone bearing tree such as a pine and juniper.
Deciduous	A plant which drops its leaves in the winter.
Driftwood style	A bonsai on which dead wood is the dominant characteristic.
Evergreen	A plant which does not drop its leaves in the winter.
Exposed root style	Bonsai which exhibit a significant amount of roots which have been exposed above the soil, becoming the dominant element.
Focal point	That part of the bonsai composition which captures and dominates the viewer's observation.
Formal upright style	A bonsai style in which the trunk is straight and erect from base to apex.
Front of tree	That side of the tree which should be directly toward the viewer and has few or no branches coming directly toward the viewer.
Grafting	A propagation technique in which a plant part (scion) is inserted into the trunk

Appendix B, Glossary of Terms, Continued

	or branch of the stock plant in such a way that the scion becomes a part of the stock plant.
Group planting style	A bonsai style having more than three separate trees.
Harmony	“Fitting together, agreement, a combination of parts into an orderly or proportionate whole, congruity, proportionate arrangement of color, size, shape which is pleasing to the eye...” (Webster’s New Twentieth Century Dictionary.)
Heading back	A pruning technique which shortens branches.
Heartwood	The older, inactive central wood of a tree, usually darker and harder than the sapwood.
Informal upright style	A bonsai style in which the trunk is curved and the apex is generally above the base of the tree.
Internode	The space between nodes.
Jack	In bonsai it is a bending device used in shaping trunks and branches.
Jin	A dead tip on a trunk or branch.
Layering	A propagation technique in which the flow of fluids in the trunk or branch of a plant is interrupted, the upper portion strikes roots, and is later separated from the stock plant.
Lime Away®	A commercially manufactured cleaning product used to remove mineral deposits. Available in grocery stores.
Line	In art and in bonsai, is a series of points which cause the eye to move along a particular path.
Lingnan technique	A method of training bonsai by alternately allowing them to grow and then clipping much of the new growth.
Literati style	A bonsai style in which the trunk is long and slender and the foliage is sparse.
Mamé bonsai	A miniature bonsai under six inches tall. It is pronounced “maw’-may”.
Minor elements	Nutritional elements which are needed by plants, but in low dosages. Included are: copper, manganese, iron, sulfur, magnesium, zinc, boron, and molybdenum.
Nana	A genetically dwarfed plant.
Node	An enlarged point on a stem where leaf or bud growth begins.
Perspective	In bonsai is used to further the illusion that the bonsai has greater mass, or

Appendix B, Glossary of Terms, Continued

	greater age or greater maturity based on the organizing of its various parts.
Penjing	A term for Chinese bonsai.
Petiole	The stalk by which a leaf is attached to a branch.
pH	A measure of the acidity or alkalinity of a solution. Low ph (4.0 - 5.5) is acidic. pH 7.0 is a neutral solution. High pH (6.5 - 9.0) is relatively alkaline. pH comes from p(otential of h(ydrogen)).
Phloem	The food-conducting tissue of the tree which moves food from one part of the plant to another. Pronounced "flow-em".
Pigeon breast	A significant curve of the trunk which bends directly toward the viewer. This configuration is considered aesthetically undesirable.
Pinching	A type of heading back (pruning) which is done with the fingers.
Pre-bonsai	Plant material in training to become bonsai. Usually grown in the ground or in nursery containers while the trunk enlarges and roots and branches develop.
Proportion	The relationship of the various parts of a bonsai.
Raft style	A bonsai style in which the tree are usually planted on its side. Roots grow along the underside of the trunk and branches become individual trees.
Ramification	Proliferation of branching.
Reverse pigeon breast	A significant curve of the trunk which bends directly away from the viewer. This configuration is considered aesthetically undesirable.
Rhythm	Straight or curved and repetition which affect the speed at which the viewer's eyes explore the bonsai and its container.
Roots	Underground extensions of the tree which anchor it to the soil and which absorb fluids.
Roots-on-rock style	A bonsai style in which the root ball is planted in a pocket in a rock or on a slab.
Roots-over-rock style	A bonsai style in which the roots wrap around and grow down a rock into the soil.
Rule of thirds	A design principle in which the lower third of the tree is bare of branches, the middle third emphasizes branches and the top third is devoted to small branches.
Saikei	A grouping of plants and rocks forming a miniature landscaped scene.
Sapwood	Newly formed outer wood that lies just inside the cambium of a tree and is

Appendix B, Glossary of Terms, Continued

	usually lighter in color and more active in nutrition than the heartwood.
Scalene triangle	A triangle whose three sides are of unequal length.
Semi-cascade style	A bonsai style in which the trunk grows up and out at a considerable angle, with the tip of the cascade between the rim and the feet of the container.
Shari	Bark is peeled from a branch or trunk to give the appearance of a mature tree that suffered a lightening strike or years of weathering.
Sinuous raft style	A tree's original trunk is curved or twisted or wired and bent in a curving (sinuous) fashion and laid on its side in the soil. Its branches are trained upright to appear to be individual trees.
Shohin bonsai	A miniature bonsai under nine inches tall. Pronounced, "show-hin".
Slanting style	A bonsai style in which the trunk is leaning to one side with the apex generally above the rim of the container.
Soil	The medium in which the roots of a plant grow. It must be sufficiently porous to permit water drainage but retain sufficient moisture to keep the plant healthy between watering.
Straight raft style	A tree's relatively straight trunk is laid on its side in the soil. Its branches are trained to grow upright directly out of the original trunk. Each is then trained to appear to be individual trees.
Sphagnum peat moss	A special type of peat which is relatively low in pH.
Suiseki	Viewing stones; stones which suggest specific views such as mountains, islands, waterfalls, lakes, plateaus, etc.
Superthrive®	A nontoxic solution of vitamins, hormones and trace elements. It helps the plant to uptake carbohydrates, something which is difficult, if not impossible, for it to do on its own when under stress.
Surface roots	Relatively horizontal roots whose upper surface is exposed as is seen when some surface soil has eroded around a mature tree.
Systemic insecticide	An insecticide which enters the vascular system of the plant and is consumed by sucking type insects. An example of a systemic insecticide is one which contains the active ingredient Cygon®.
T Branch	See Bar branch.
Tapered trunk	A tree's trunk which has a larger diameter at the base and a smaller diameter at the top with a gradual change between.
Texture	Smooth, rough, soft or hard characteristics which affect the speed at which

Appendix B, Glossary of Terms, Continued

	the viewer's eyes explore the bonsai and its container.
Thinning	A pruning technique in which unwanted branches are removed.
Triple trunk style	A bonsai style with three trunks and a single root system.
Trunk	That portion of a tree when grows from the roots.
Trunk height/ girth ratio	For planning purposes, the ratio for individual trees is 1 to 8 or 1 to 10. An example would be a tree with a 1" diameter base would ideally be 8" - 10" tall. The ratio as it applies to two or more trees would mean that the shorter tree should have a proportionately smaller girth that the taller tree. Another guide is that the shorter and smaller diameter tree should be proportionately shorter than the taller tree.
Twin tree style	A bonsai style involving two separate trees.
Twin trunk style	A bonsai style which has two trunks and a single root system.
Understatement	An aesthetic premise that the less powerful a thing may be, the more effective it can be.
Unity of design	Accomplished in a bonsai composition by the repeated use of similar or related elements.
Uro	A hollow trunk.
Variegate	Varying, especially in color. A variegated juniper is basically green with portions that vary from white to yellow. The variegation is caused by a natural absence of chlorophyll.
Viewing stones	See Suiseki.
Visual speed	The speed at which the viewer's eyes explore the bonsai. Influenced by texture, rhythm and branch placement.
Wabi	Simplicity, richness by not needing, absence of adornments.
Weeping style	A bonsai on which foliage growing in a weeping fashion is the dominant characteristic.
Windswept style	A slanting style bonsai which has most of the limbs slanting in the same direction as if blown by prevailing wind.
Wound dressing	A salve or liquid preparation to be applied to tree wounds to prevent rotting and to deter disease.

Harmony in Bonsai

I. INTRODUCTION

This **APPENDIX** in addition to containing all of the material in Chapter 2, has expanded coverage of the subject which it was felt more appropriate to present in an **APPENDIX** than in the text of the Syllabus.

II. GENERAL

A. Definitions

1. **Harmony.** Harmony means fitting together, agreement, a combination of parts into an orderly or proportionate whole, congruity, agreement or proportionate arrangement of color, size, shape, etc., that is pleasing to the eye.
2. **Bonsai.** Bonsai is the art of creating a miniature replica of a mature tree or group of trees which could be found in nature. The bonsai artist attempts to create an **illusion** by changing normal plant material into a mature tree.

III. ELEMENTS OF HARMONY

- A. Various elements, concepts and conditions contribute to the existence of harmony in a given composition. They include: understatement, perspective, line and its continuity and rhythm, balance and the soul and the spirit of the creation.
- B. **Understatement.** When a bonsai exhibits harmony, it is because of the presence of a variety of factors which, when acting in a concerted fashion, provide a unified structure, a work of horticultural art which is pleasing to the eye. One of these factors which contributes to harmony is **understatement**. There is a basic aesthetic premise in the orient which states that the **less** powerful a thing may be, the **more** effective it can be.
 1. The power of quietness and understatement is the core of much of Oriental art's approach to beauty be it architecture, interior design, flower arranging, bonsai or nature itself.

Appendix C, Harmony in Bonsai, Continued

2. Understatement is present when a background is neutral or otherwise subdued. Such a background gives dominance to the tree.
3. The importance of **space** should not be underestimated. Space, the opposite of mass, provides something for the viewer to see, something which is **not** there. This is a major difference between Eastern and Western art. Mass too is important, but it should be effectively alternated with space to provide for an interesting balance.

C. **Perspective.** Another factor contributing to harmony in a bonsai is **perspective**. Perspective refers to a method of organizing forms in space to create an illusion of depth on a two dimensional surface or of greater depth in three dimensions. Perspective in bonsai is used to further the illusion that the bonsai has greater mass, greater age and greater maturity and is in a much larger environment than is really the case.

1. The Western concept of perspective uses what is called a “single point” perspective. It is a linear perspective whose lines converge to mark the diminishing size of forms as they recede into the distance. In Leonardo da Vinci’s “Last Supper” every line in the painting converges on Christ’s head. This “single point” perspective provides a focal point; it visually unifies all aspects of this work into a harmonious whole.
2. Eastern art often uses other types of perspective to create a sense of depth and space. One of these is called “**atmosphere illusion**”. Atmosphere illusion subtly blends parts of the picture into space. In many of the early Japanese wood block prints the mist or the snow trails off into a void leaving the viewer to create in his own mind what is there and what is not.
3. Another visual device for showing perspective is “**comparison**”. Consider the creation of a mountain that gives a feeling of great height by the use of tiny figures or other recognizable objects, close to its base, and in proportion to the mountain. This device is seen frequently in Chinese plantings using a vertical rock placed in a tray containing a shallow layer of water and ornamented with tiny people and boats.

Without the effective use of perspective the object lacks depth and the interrelationship of its parts is confused and unharmonious.

D. **Line** in art refers to a series of points which cause the eye to move along a particular path. This path controls the way we view, the way we “see”, a

Appendix C, Harmony in Bonsai, Continued

particular composition. The **visual movement** along the path created by these points of interest should be smooth and fairly continuous to preclude the eye's becoming confused and lost in the composition. A principal line to consider when evaluating the composition of a bonsai is that of the **trunk line**.

1. The **trunk line** is an early consideration when planning the styling of plant stock into bonsai.
 - a. The trunk line is a series of connected and continuous points which guide the viewer's eye.
 - b. The trunk line, to a large degree, predetermines the path of visual movement. It establishes the way in which the tree is viewed. The trunk line influences the entire structure and balance of the composition.
 - c. In a formal upright style bonsai the trunk line is straight and vertical causing the viewer's eye to move rather quickly from the base, up the trunk, to the apex. Visual movements to side branches are minimized. Untoward interruptions create disharmony.
 - d. Conversely, in a semi-cascade style bonsai the trunk line thrusts dynamically to one side with a counterbalance in the opposite direction. The series of points which guide the viewer's visual movement not only go from the base, up the trunk and out to the apex of the semi-cascade, but must also allow for a chance to view the counterbalancing branch. If this side trip to the counter balance is not easily accomplished, disharmony occurs.

2. The trunk line must be **logical**. In order to have a unified structure a bonsai must have logical trunk and branch direction and be in proper proportion. It must make "sense", it must really look like a truly mature tree which would be found in nature.
 - a. The trunk direction should not suddenly turn at an unexpected and illogical angle from its intended course.
 - b. Branch direction should complement the trunk line in a harmonious and natural way.
 - c. The proportions of the bonsai have to be balanced and therefore appear logical to the viewer, otherwise, there is poor harmony in the composition.
 - d. There also must be established what appears to be a logical proportion between the mass of the tree and that of the pot. One which is out of proportion, too small or too large, is unbalanced and disharmonious.

Appendix C, Harmony in Bonsai, Continued

- e. In designing and evaluating a bonsai, the “Rule of Thirds” assists in determining proportions. The lower third of the tree should be devoted to surface roots and to a proportionately tapered trunk, the middle third of the tree emphasizes branching and the top third consists of small branches and the apex.

The design must harmonize with what the viewer logically expects to see in a mature tree.

3. There should be a **continuity of the line**. The viewer’s eye should move up the trunk line in an unconscious but pre-determined fashion.
 - a. Most viewers begin at the base of the trunk and allow their eyes to move upward toward the apex.
 - b. Diversions to side branches are permissible and often desirable as long as there is an effortless return to the trunk so that the upward visual movement can continue. A slight interruption of the upward visual movement along the trunk line is acceptable and sometimes desirable as a means of regulating the speed of the eye movement. An interruption in the form of a bit of foliage crossing in front of the trunk line can cause the eye to pause, but not to get lost. As long as there is reason to believe that there is continuity in the line, and the direction which the eye is to follow is clear, the harmonious movement along the line will not be disturbed.
 - c. However, when the eye encounters a **break in the continuity of the line** in the form of “V” or a “T” or “bar” branch, confused and random visual movement may occur which results in visual tension.
4. In addition to the trunk line, there is another line which governs visual movement throughout the composition of a bonsai. That line involves the **visual mass** of the tree.
 - a. The line of the visual mass is the **outline of the tree** and to some extent, the outline of individual branches. It is the bounding box, the boundary, or the perimeter which aids in restraining the eye from leaving the composition. It also helps to redirect the visual movement from the outer boundary back into the scene.
 - b. To enhance harmony in the bonsai, the **visual mass**, whether it be foliage or wood, must complement rather than conflict with the trunk line.

Appendix C, Harmony in Bonsai, Continued

- (1) In the vertical formal upright style bonsai the visual mass should be fairly equally distributed laterally and there should be proportionately more of it towards the bottom than at the top.
- (2) However, in a slanting style bonsai in which the trunk line flows decidedly to one side, the visual mass of the tree should be heavier on the side away from the direction of visual movement in order to provide a harmonious counter balance.

The successful bonsai consists of a series of harmonious lines, some of which define the trunk and its branches, others provide the outer boundaries of the visual mass.

5. The line of the bonsai affects the **position** in which the tree is placed in its container.
 - a. A tree, whose visual movement is to one side or the other, is placed off-center in the container with the side having the greatest visual movement placed over the largest expanse of soil.
 - b. In the case of a slanting style bonsai whose visual movement is towards the left, it would be planted to the right of the center of the container. This provides visual balance, unity of tree line and container space, and thus a more harmonious visual movement.
6. **Surface roots and trunk taper** have an effect on visual movement which affects line.
 - a. Visual tension can occur when the eye attempts to follow a line which is so irregular the eye cannot flow smoothly along the line.
 - b. This is apparent when there are no **surface roots** and little **taper** to be seen. The surface roots and lower trunk taper provide a smooth transition for the visual movement from the plane of the horizontal soil line to that of the vertical trunk line.
7. There needs to be a mutual relation, an agreement, between the tree's line and that of the **container**.
 - a. If the tree's line is soft and curving, then the container might have soft and curving lines in the form of rounded corners. There may even be rounded designs on the container's surface to complement the visual movement of the lines of the tree.

Appendix C, Harmony in Bonsai, Continued

- b. The color of the container also should provide continuity in the composition. By having the container complement the tree, a repeated rhythmic pattern is created which gives a balance and a harmony to the composition.
8. All of these factors are important in achieving a **rhythm of movement**.
- a. Rhythm of movement may be attained by having a line repeating itself, as seen in the rhythmic but variable curving of the trunk towards the apex.
 - b. Any rhythm must vary using differing values in order to avoid repetitious duplication. The curves of the trunk near the base should be wide and gradual while those nearer the apex become smaller.
 - c. Rhythm of movement should be apparent in the rhythmic and repeated spacing and drooping of the branches.
 - (1) As the trunk rhythm varies its curving, so must the rhythm affecting the placement and angle of branches.
 - (2) Lower branches should be spaced wider than upper ones, and the lower branches should appear to descend at a greater angle. This creates a rhythm of movement which creates the illusion of height.
 - d. Rhythm of movement also occurs in the repetition of foliage masses. A particular bonsai's foliage may have been trained in the form of clouds. The foliage clouds repeat themselves to create a rhythm but vary their size and placement to avoid dull repetition.
- E. **Balance.** Balance fosters harmony. However, unlike much of Western art, Oriental art, on which bonsai is based, relies on **asymmetrical balance** rather than on symmetrical balance.
- 1. The unequal triangle, lacking equality or symmetry, is the concept upon which a unique type of balance can be achieved.
 - 2. Eastern painting, flower arranging, garden arrangement and bonsai all rely on the unequal triangle to provide an interesting balance and harmony to the composition.

Appendix C, Harmony in Bonsai, Continued

3. In bonsai, the three points of the asymmetrical triangle generally touch on the apex, a side branch and on a branch on the opposite side or on the edge of the container.
- F. **The soul and the spirit.** Many years ago an early Chinese art critic attempted to establish a criterion by which to judge landscape paintings.
1. In effect he said that a work of art may be technically perfect, exhibiting perfect technique in execution and workmanship, and it may follow all of the rules, do everything right. But unless it has a **soul and a spirit**, it has not been “divinely inspired”. This soul and spirit separates the great bonsai masterpieces from other specimens.
 2. The Japanese terms “**wabi**” and “**sabi**” may be applicable. They involve a quiet consciousness or state of mind which involves an appreciation and a communication which is largely unconscious, which is intuitive. Two well known works which seem to have been “divinely inspired”, which evoke the feelings associated with wabi and sabi, are:
 - a. Leonardo da Vinci’s Mona Lisa is a simple small painting not unlike many others, yet it is different. It has an indescribable feature: that enigmatic smile.
 - b. John Naka’s *Goshen*, a bonsai forest made of junipers collected from the High Sierras. The result is equal to more the sum of its parts. There is that, “something extra” which makes it the best of the best.
 3. In order for the soul and spirit of the tree to be intact, the tree must have **dignity**. It has dignity by being permitted to look like a tree rather than looking like a freak. The artist should put himself in the place of his tree and ask if he would be proud to look as the tree looks?

IV. NATURES PLACE IN BONSAI HARMONY

- A. **Nature** provides our most basic lessons on harmony. Some of the greatest artists spent their lives studying nature. Mountains, streams, rocks and trees in their natural environment usually exist in simplistic harmony with each other and with their surroundings. The bonsai artist learns by observing nature.
1. Early masters of Eastern art tried to distill the essence of nature’s simple yet subtle harmony by studying many of its structural relationships.

Appendix C, Harmony in Bonsai, Continued

- a. They studied the relationships between the limbs and the trunk of a tree.
 - b. They sketched the relative proportions and positions amongst trees, rock groupings, and trees and rocks.
 - c. They attempted to understand, document and recreate the subtle yet simple and harmonious relationship of elements in nature.
2. Rocks and trees are seen as objects having an energy force which flows in a rhythmic patterns between the parts of a rock or a tree and between adjacent trees and rocks.
- B. The **Japanese garden** is the most difficult horticultural landscape to create successfully because it tries to recreate nature in all of its subtle harmonies.

C. Natural Style

1. Styling a bonsai is largely about making decisions: how to shape and to angle the trunk, which branches to keep and which to remove, how to shape the branches and where to position them.
2. One of the basic elements to consider when making styling decisions is the style in which that species tree grows naturally.
 - a. In the natural environment each species has a genetically programmed branch pattern and crown shape which, within environmental limitations, it adopts.
 - b. The style of a bonsai should be in harmony with the species natural style. Do not force a species into a style to which it is foreign, i.e., don't make a beech pretend to be a pine nor a pine a beech.
3. Bonsai styling should, within reason, reflect the natural growth habit, shape and form of a species. The bonsai artist combines horticultural and design skills to create a miniature replica of the tree which is in harmony with what might be seen in the wild.

V. HARMONY in the DISPLAY of BONSAI

- A. In the **display** of bonsai, concepts of understatement, space, perspective, visual movement, rhythm, balance, and natural appearance apply in order for there to be harmony.

Appendix C, Harmony in Bonsai, Continued

1. **Focal point.** Each display and each segment of a display should have a bonsai as a focal point.
 - a. It is less interesting to see a display of trees of equal height and which are equally distanced in a display than it would be to see a major tree grouped with ones of lesser mass. As in a bonsai group planting or in an Oriental garden, one of the elements in a display needs to be the focal point.
 - b. Once a focal point is fixed, to the left or to the right of center, an **asymmetrical triangle** is created using the line of the foliage mass, a container edge, the edge of the display table or area, or the mass of a companion display item.
2. **Empty space** on a display table is as important as space which is filled. The empty spaces in front of, between and behind the displayed items establish perimeters or borders to assist the eye in remaining within the viewed grouping.
3. The **background** should be neutral. A cluttered background is distracting and makes it difficult for the eye to follow the line in the nearer image. A neutral background avoids drawing the viewer's eye away from and behind the objects which have been placed in the grouping for viewing. It also makes it easier for the eye to discern detail in the nearer image.
4. **Triangulation** is not only considered in the vertical dimension but also in the horizontal plane on the surface of the display table.
 - a. As the placement of objects on the soil surface in a group planting is considered, so is the placement of objects on the table surface in a display important. Objects should not be displayed in a straight line from side to side or from front to rear.
 - b. There can be triangulation within triangulation. The overall display of trees in the grouping creates an asymmetrical triangle while smaller groupings also have triangulation.
5. **Stands** must be in proportion to the bonsai being displayed and should complement the color, shape or texture of the item being displayed.
 - a. The shape of the stand should complement the shape of the tree and its container.
 - b. Stands should not be overly ornate so as to detract from the primary object.

Appendix C, Harmony in Bonsai, Continued

- c. The mass of the stand should complement the object.
 6. The shape and texture of bonsai, companion plantings, rocks and other objects within a grouping should complement each other rather than conflict.
 7. The **visual movement** of a displayed bonsai, as indicated by its overall form and the direction of its trunk line, should be toward the center of its grouping rather than away from the grouping. This creates a subtle feeling of harmony and balance. It tends to evoke a feeling of peace, cooperation and communication rather than one of stress and imbalance.
- B. Most of these concepts of harmony involving the display of bonsai apply to the outdoor display also. Plants should be thoughtfully grouped, should have adequate empty space, should not be lined up side by side and should have a relatively non-distracting background.

VII. SUMMARY

- A. In summary, a harmonious bonsai is one whose lines, shape, size, container and display environment blend together to present a coordinated and beautiful scene.
- B. Various elements, concepts and conditions contribute to the existence of harmony in a given composition. They include: understatement, perspective, line and its continuity and rhythm, balance, the soul and the spirit of the creation and its display.

Appendix D

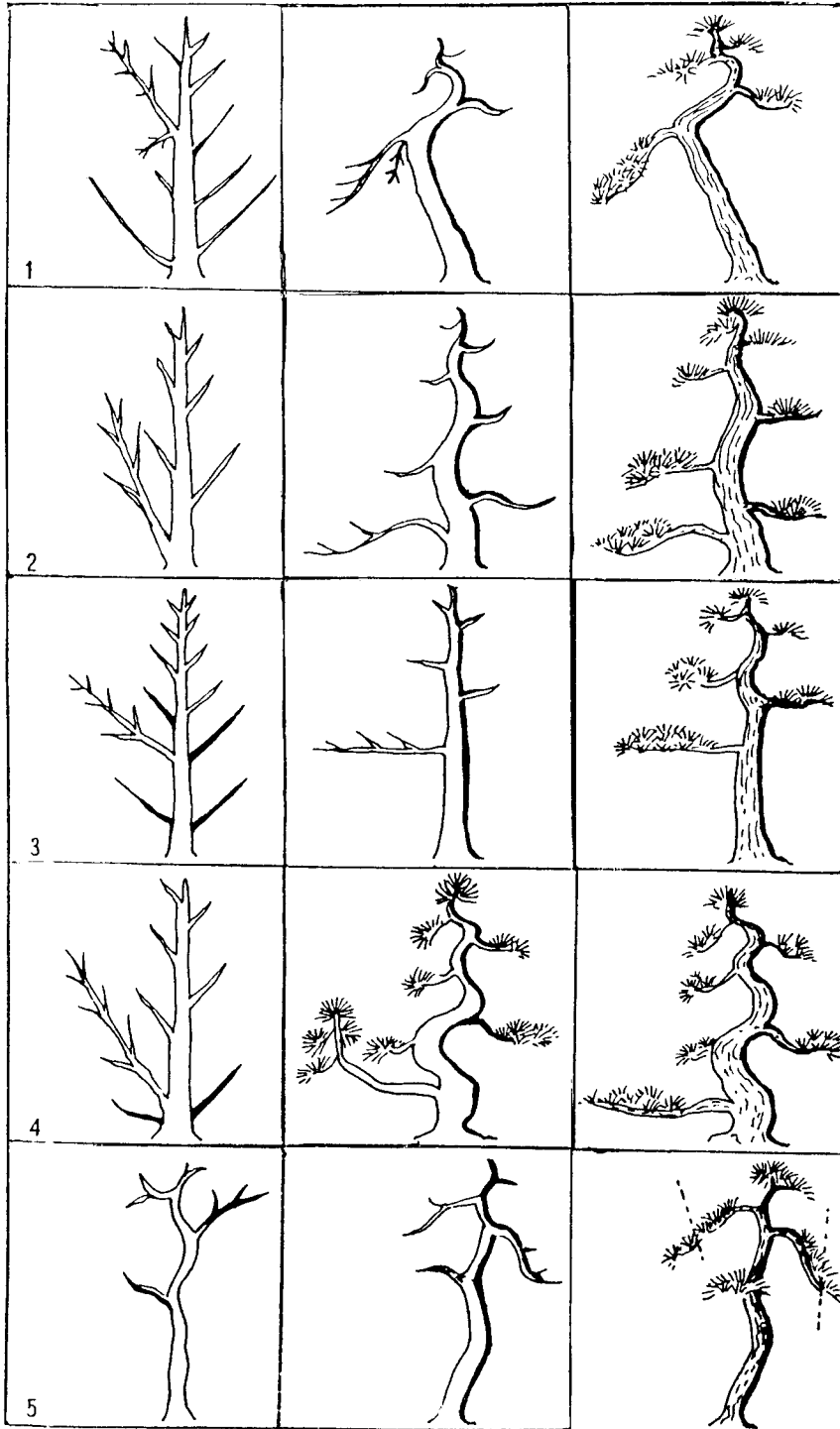
GROUP PLANTING ELEMENTS of the TWO EXTREMES

<u>DESIGN ELEMENT</u>	<u>NEAR VIEW</u>	<u>FAR VIEW</u>
Main Feature.	Mass and height. See the trees, not the countryside.	Distance, overall outline. See countryside, not the trees.
Tree Size.	Individual trees dominate, taller, more massive. Big difference between size of main tree and smaller trees.	Individual trees subdued, blend. Less difference among trees.
Placement in pot in relation to center line.	Forward. Little foreground. Viewer is right up against trees.	Rearward. Open foreground. See trees in the distance.
Height of #1 tree vs. length of pot.	Greater, enhances impression of height.	Less, de-emphasizes height.
Depth of pot vs. girth of #1 tree.	Equal to or a little larger.	The shallower the better. Thin slabs especially good.
Branching height of main trees.	Relatively high, over the heads of imaginary viewers.	Lower.
Perspective within the forest.	Pronounced. Sense of depth. Rear trees shorter, may be tilted back and/or out to enhance perspective. Aware of height and mass; they tower over viewer. Foreground is swallowed up. Trees recede into distance.	Diminished. Smaller trees used for variety and development of outline. See trees as a group. Foreground is of major importance. Often an open area to one side.
Placement of main trees.	Main trees in front.	Smaller trees in front of and around main trees.

Most bonsai forests incorporate some of each and few are purely a near or far view.

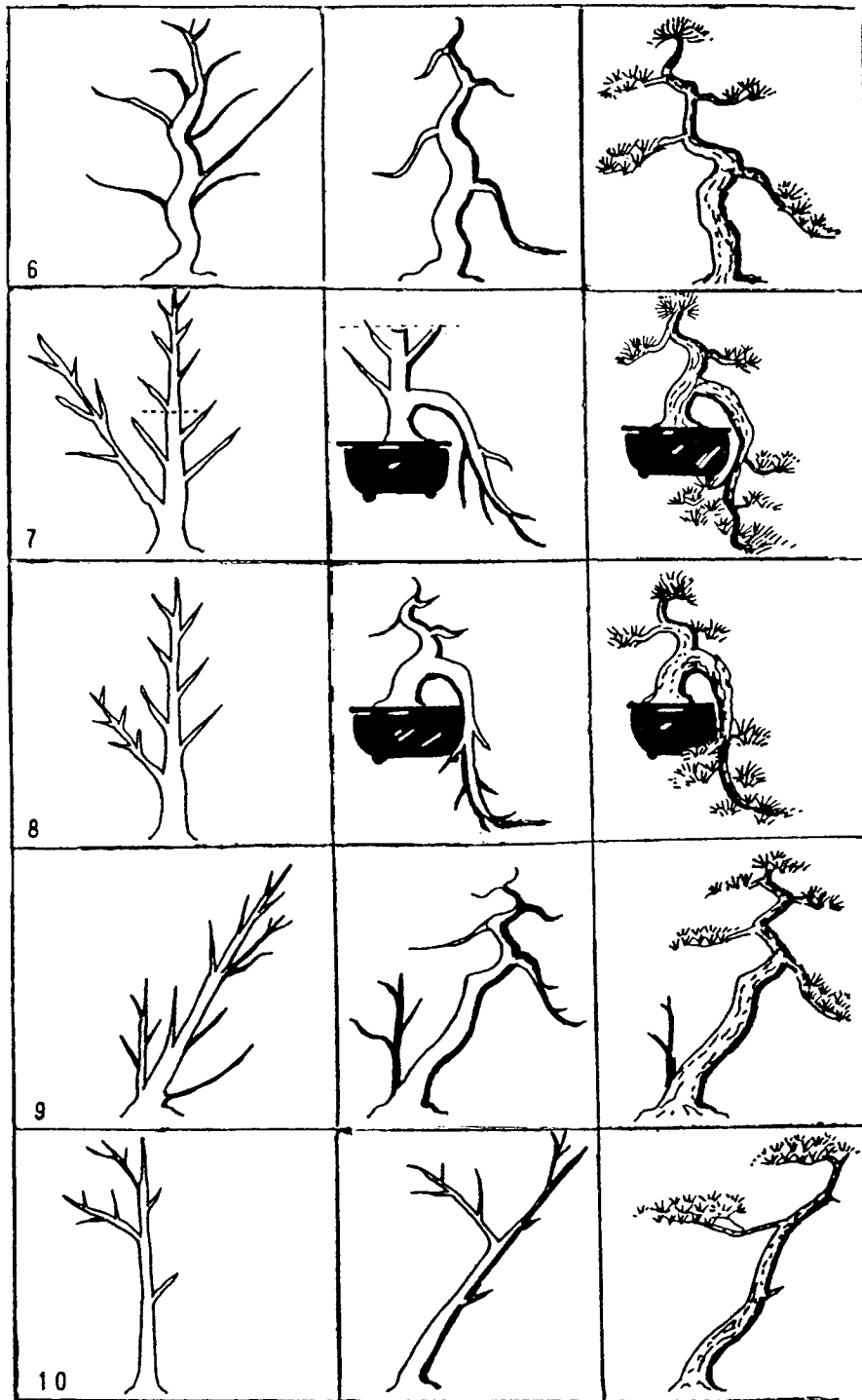
Appendix E

Examples of Styling Miniature Bonsai



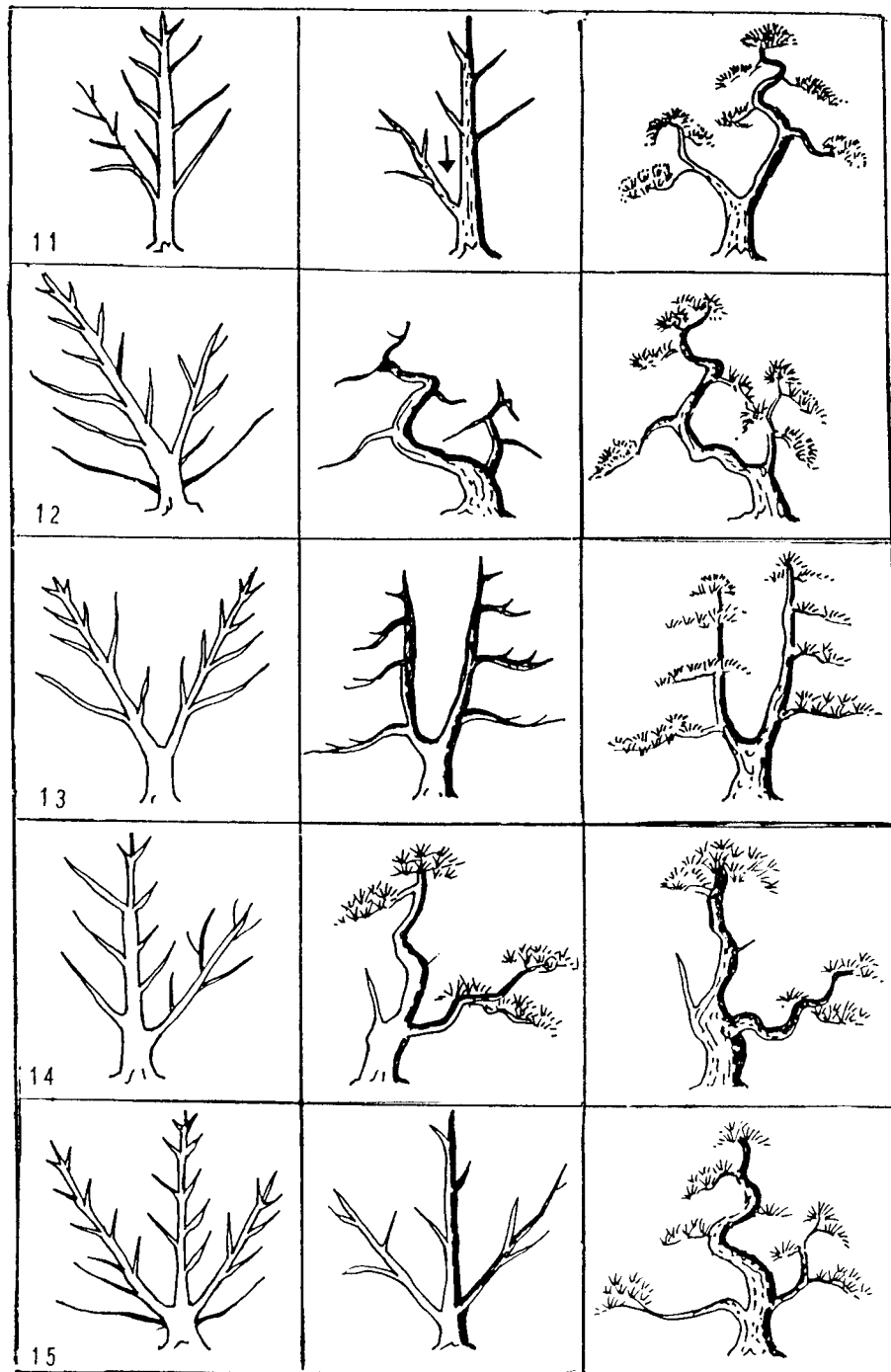
These sketches are examples of styling miniature bonsai by pruning and wiring. They are from the Fall 1982 issue of Florida Bonsai, magazine which published these four panels of sketches as part of a short article by Charles Lloyd titled: "Ideas for Mame Bonsai". Those sketches, appear on pages 14-17.

Illus E-1



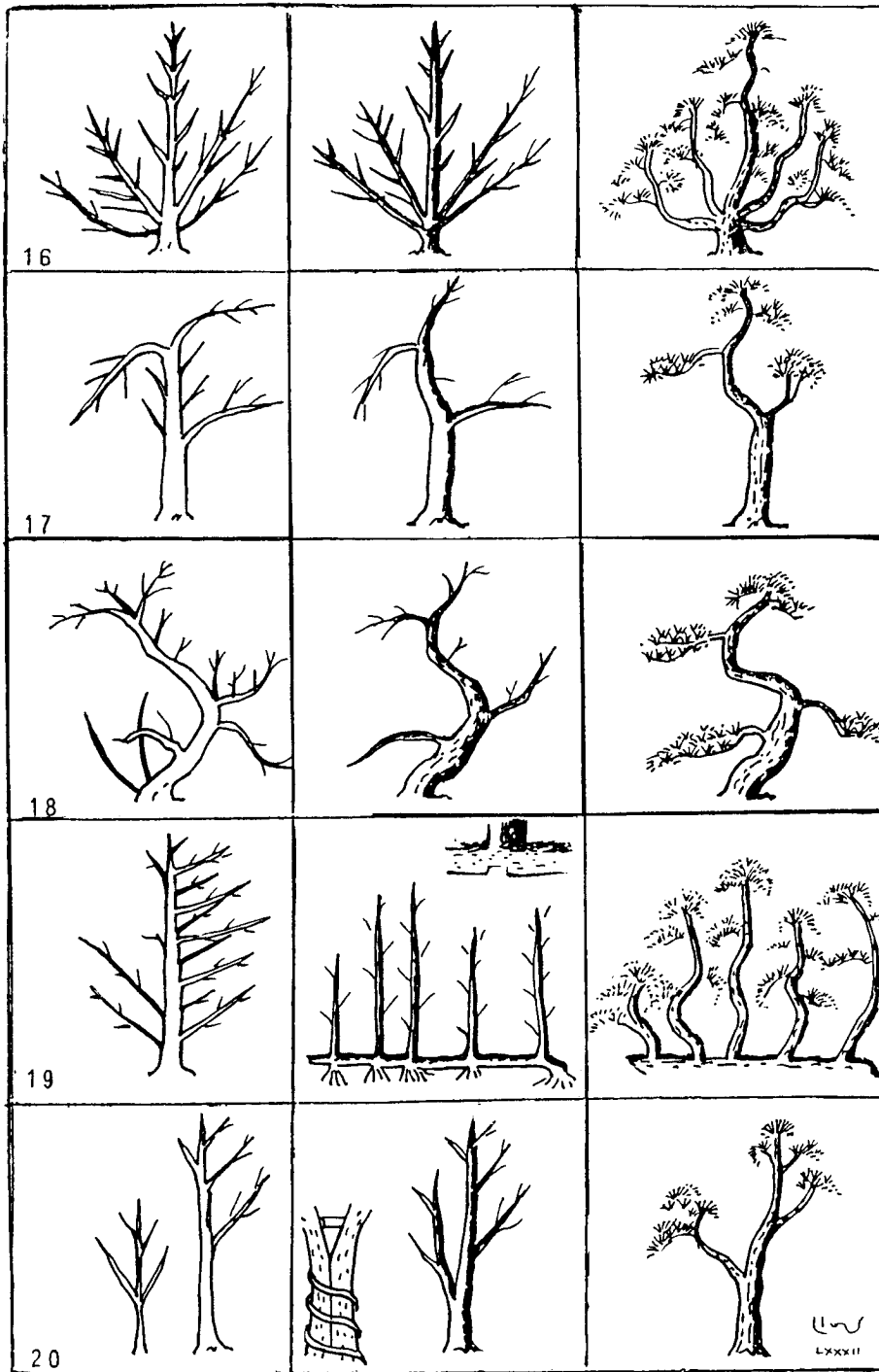
Illus E-2

Appendix E, Miniature Bonsai, Continued



Illus E-3

Appendix E, Miniature Bonsai, Continued



Illus E-4

A Brief History of the *Literati* Style of Bonsai

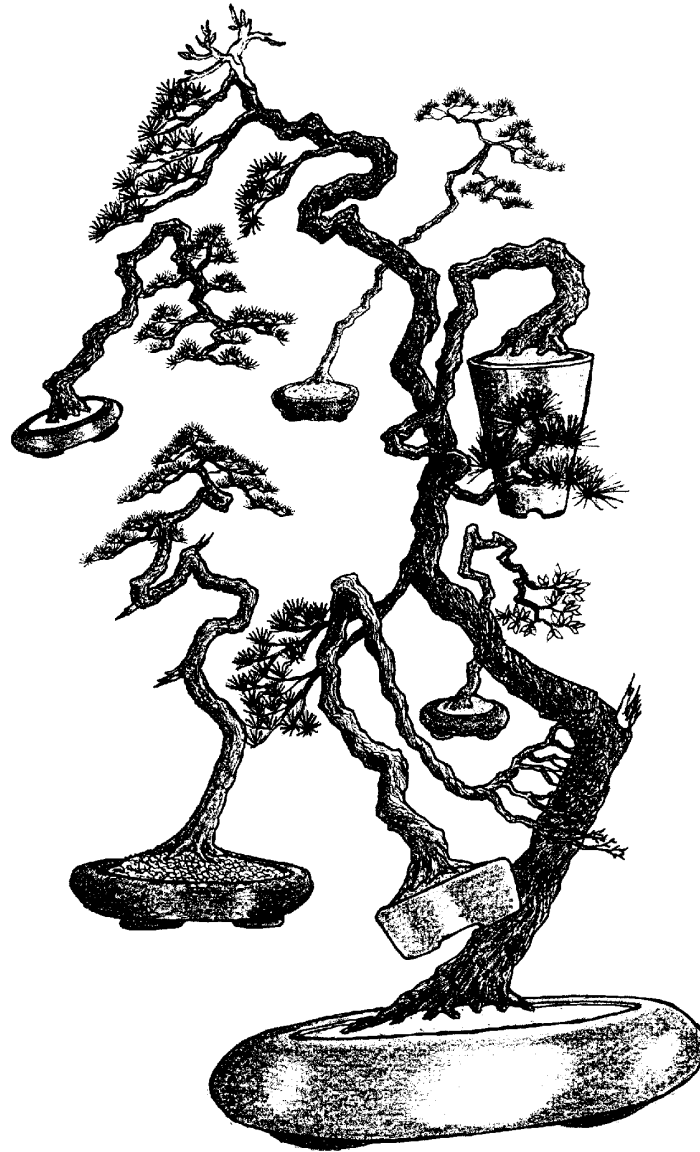
In China, many years ago, the “Southern School of Chinese Landscape Painting” developed. These painters were scholars specializing in the study of religion, philosophy and the arts. They became wanderers and hermits living in remote mountain areas to better devote themselves to contemplation and to the study of calligraphy (brush writing), poetry and painting. They were called the *literati*, men of letters, scholarly, or learned people. The Japanese term, *bunjin* means essentially the same thing - men of letters or a man who has been able to express something in a different way.

Their search for release from society’s controls was portrayed in the freedom with which they portrayed elements of their landscape paintings. Many of the trees portrayed have elongated trunks with just a few branches which are dramatically placed. The lines are strong and sometimes with radical shifts in direction.

Over two hundred years ago two Japanese artists, Hokusai and Hiroshige, painted landscape scenes replicating much of the style of the *Literati school*. Many of the trees pictured in their paintings have long, untapered trunks, foliage only at the top of the tree, crossed trunks, crossed branches, and branches which cross the trunk. A composite sketch of various *literati* styles is attached.

Japanese bonsai masters learned from these examples of landscape painting and they created a style of bonsai which in Japanese is called, *bunjin*. The *bunjin* style of bonsai is both simple and complicated; incorporating the principles of both *wabi* and *sabi*. Much of the Western world calls this style, *literati*.

Composite of Literati Bonsai Styles



Norman Stoddick '94

Illus F-1