

Timber

What it means to cut a tree

by George Nakashima

When trees mature, it is fair and moral that they are cut for man's use, as they would soon decay and return to the earth. Trees have a yearning to live again, perhaps to provide the beauty, strength and utility to serve man, even to become an object of great artistic worth.

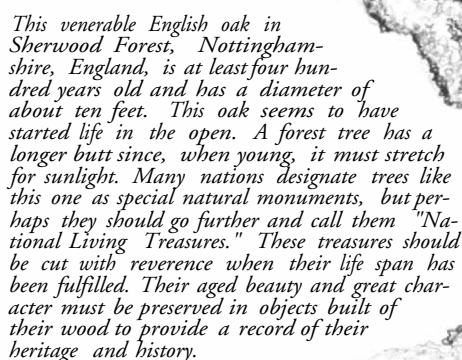
Each tree, every part of each tree, has only one perfect use. The long, taut grains of the true cypress, so well adapted to the making of elegant thin grilles, the joyous dance of the figuring in certain species, the richness of graining where two large branches reach out—these can all be released and fulfilled in a worthy object for man's use.

How to acquire logs and what to do with them calls for creative skill. There is so much that is wasted and unrealized. Consider the great timbers, some ten feet in diameter, piled across slopes and gulleys to make railroad beds in the early days of this country. Or the magnificent zebrawood log, from which boards fully four feet wide and eight feet long could be cut, but which instead is cut into pieces $\frac{3}{8}$ in. thick, six inches wide! What a waste of a majestic opportunity! This is the psychology of match-stick manufacture. And the tragedy of once-in-a-lifetime timbers cut into veneers so thin the light can shine through. What a waste, simply for money!

Logs from all over the world make their way to my storehouse. Some are of great value, some quite inexpensive but with interesting possibilities. There is need always to select and to search, even to look underground where the most fantastic grains can often be found.

Each species of tree has its own characteristics. Extremely long fibers and resistance to rot are characteristics of the cedar, the cypress, and, in a way, the spruces and hemlocks, the firs, and the other evergreen trees. These characteristics are important where tautness and resistance to weather are necessary. The woods from these trees often have beautiful, very straight graining and are useful in architecture for grilles

EDITOR'S NOTE: George Nakashima's furniture is special because it is not designed in the objective sense. Rather, it evolves in the subjective organic sense, and it stands at the end of its manufacture as a record and symbol of the natural forces that created the wood, as well as of the human understanding that gave it new life as a useful object. Nakashima works in the tradition of Karma yoga, and thus he is concerned with the active process of bringing objects into being, not for the sake of what they become at the end of it all, but for the sake of the work itself, for the interplay and rapport between maker and material. As a maker, Nakashima believes his chief job is to read each log with a knowing eye and to have it cut to unlock its essence. In this excerpt from his new book, *The Soul of a Tree* (Kodansha International Ltd., 10 E. 53rd St., New York, N.Y. 10022, 1981, \$52), Nakashima illustrates and discusses his relation to his material. In other chapters in the book he talks about the formative influences on his career as a designer and how he creates balance between useful and natural forms. For more on George Nakashima see *FWW* #14, Jan. '79, p. 40.



This venerable English oak in Sherwood Forest, Nottinghamshire, England, is at least four hundred years old and has a diameter of about ten feet. This oak seems to have started life in the open. A forest tree has a longer butt since, when young, it must stretch for sunlight. Many nations designate trees like this one as special natural monuments, but perhaps they should go further and call them "National Living Treasures." These treasures should be cut with reverence when their life span has been fulfilled. Their aged beauty and great character must be preserved in objects built of their wood to provide a record of their heritage and history.

like the starburst *asa-no-ha*, and even musical instruments. One of the finest perhaps is the Japanese cypress, and not far behind are the Port Orford cedar and the Alaska cedar, neither of which is a true cedar at all, but a cypress.

The European walnut, whether from Kashmir, the area around the Caspian Sea, southern Russia, northern Iran or eastern Turkey, or from western Europe, is among the finest of furniture woods, and one I use with frequency. American walnut, a different species, is also greatly admired, especially by Europeans at this time.

Cherry and other fruitwoods produce material of great quality. Black persimmon, often considered the finest of Japanese woods, is now extremely rare.

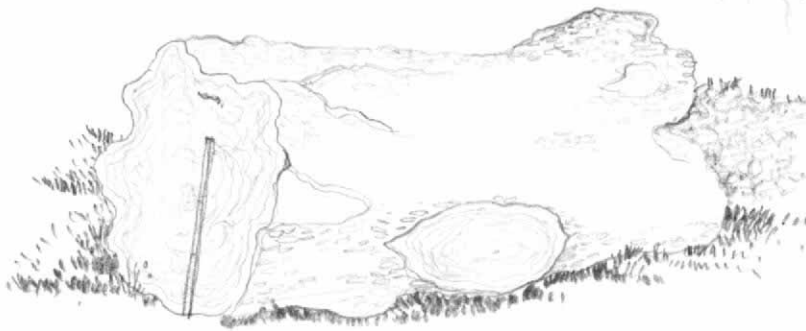
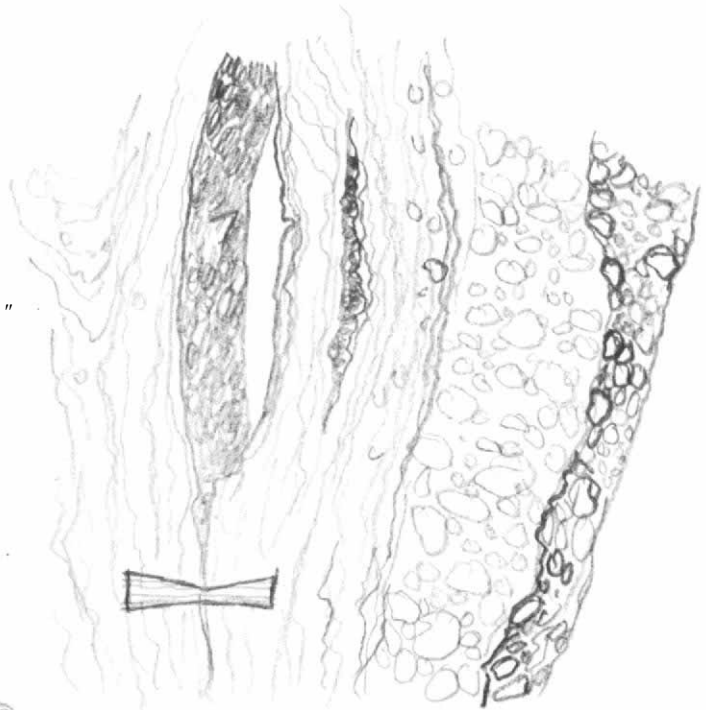
All woods have graining—patterns created by the trunk fibers. However, the grain of many woods, pine and maple for instance, is regular and comparatively uninteresting, while that of walnut, cherry and other fruitwoods is intricate and exciting.

Quite often the finest of grains exist in the root structure of many fine trees that are condemned to rot. The roots are difficult to pull out, and often are deeply imbedded with stones which can be the nemesis of a sawyer. Some roots preserve their beauty even if left underground for a hundred years, for example, those of the California redwood.

Burls, growths on the trunks of many trees, in the shape of flattened hemispheres, are also very much esteemed. Sometimes they grow in a single clump, but at other times they may cover most of a tree. They do not seem to be particularly harmful to the health of the tree, and they seem to have a joy and exuberance that greatly enhances the tree's charm.



Butterfly-shaped inlay of rosewood reinforces the area below an opening, most likely a "wind-shake," in highly figured English walnut. The separated fibers have weathered as they healed.



Deciding how to cut this great walnut log—with a crotch at one end about nine feet long and four feet in diameter (note the scale)—was quite a challenge. Seven limbs had been cut from it, and the general configuration, contour and characteristics gave promise of spectacular, "once-in-a-lifetime" graining.

The judgments in sawing must be swift and exact. Thickness, trimming, and direction of the cut are vital considerations that ultimately determine whether you produce magnificent lumber or firewood.

The sawing of logs is of prime importance. Each cut requires judgments and decisions on what the log should become. As in cutting a diamond, the judgments must be precise and exact concerning thickness and direction of cut, especially through "figures," the complicated designs resulting from the tree's grain. If a figure is cut properly, the beauty locked in the tree will gradually emerge. If cut improperly, most is lost. Gradations in color, owing to the chemical composition of the soil in which a tree grows, as well as the sharp contrast between dark heartwood and light sapwood, will add their charm.

There is drama in the opening of a log—to uncover for the first time the beauty in the bole, or trunk, of a tree hidden for centuries, waiting to be given this second life. There are fine surprises, but also disappointments.

A great walnut, above five and a half feet in diameter, was once given to me. It seemed to have great character. A small limb pocket was filled with concrete at the top but neither a tree expert nor I imagined that the whole center had rotted out and was filled with concrete! There was only a foot and a half of wood around the circumference. The tree had not fallen because it was a concrete column! We were finally able, with great effort, to take it down. The wood was interesting, but like many aged logs it had a tendency to be soft and weak.

I recall another instance when two logs were on the platform ready for sawing. They were English walnut. At first, there was only a suspicion that we were in the presence of a great natural wonder. The saw was a large, commercial band saw. The logs were close to six feet in diameter. They were too large! The only recourse was to hack off protrusions and excess

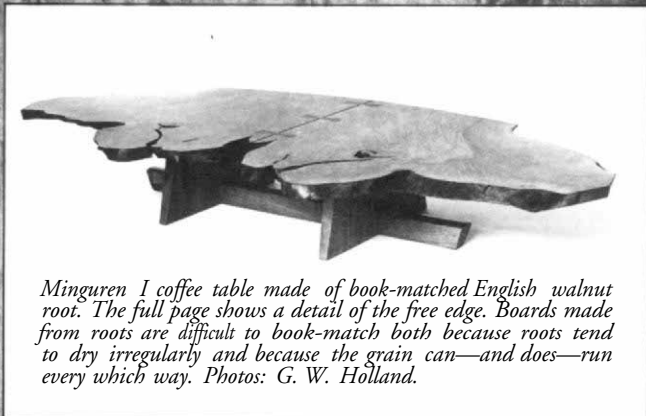
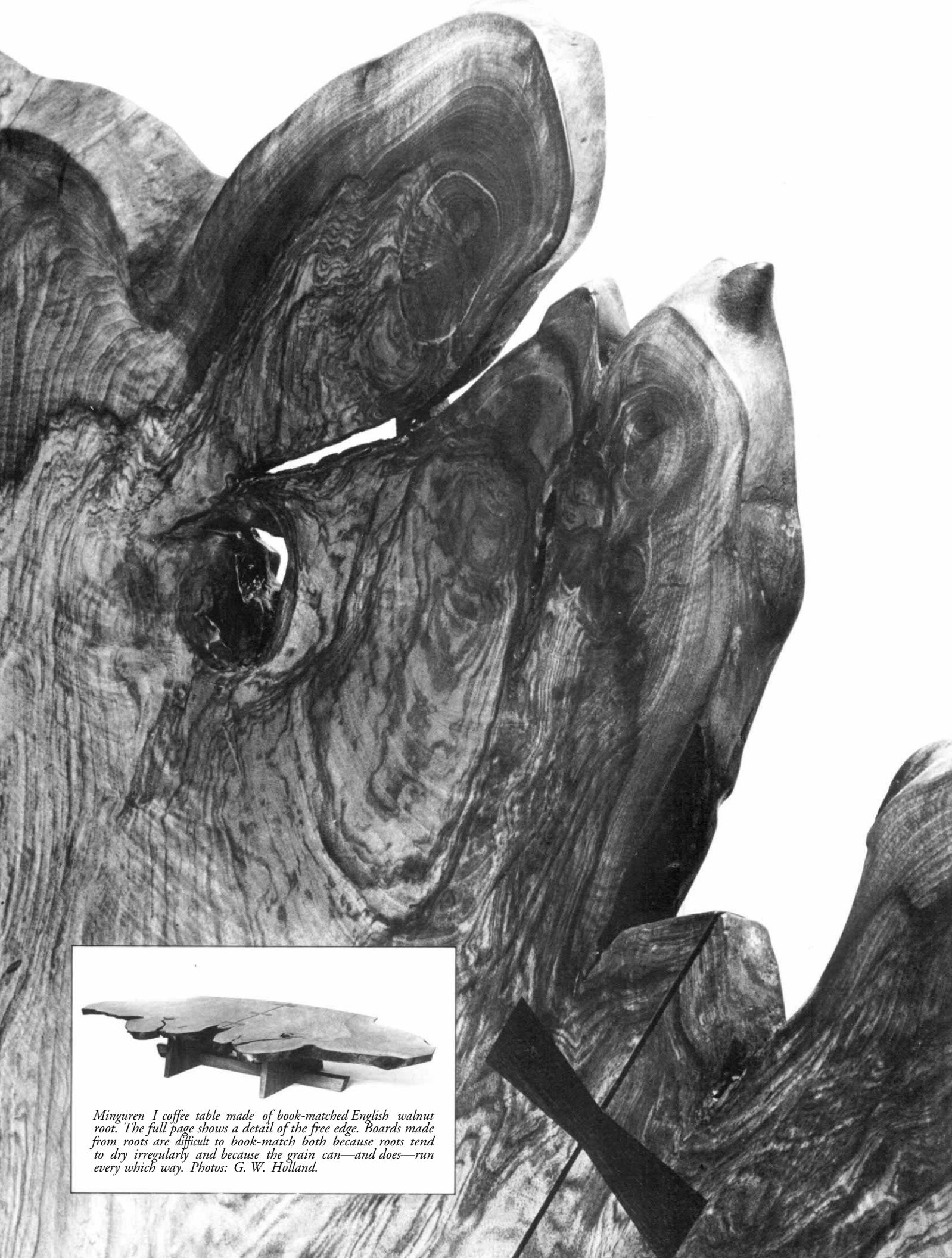
width with a chainsaw and an ax. It was devastating to see this magnificent wood handled in such a fashion, but there was no other way. Even before the log was opened up, the experienced eye could see the incredibly lovely grain, figuring and color where a bit of bark had been knocked off. Here indeed was precious timber.

The revelation in the opening of the log with the first cut or two was amazing. Sensitivity, instinct and long experience came to the fore at this point. The graining and the quality of the slabs made them an English treasure. One wonders why the English timber merchants allowed these logs to leave the country. Not being able to cut the full width of the prime boards was a disappointment. I even considered calling several hand sawyers from Asia to execute the sawing.

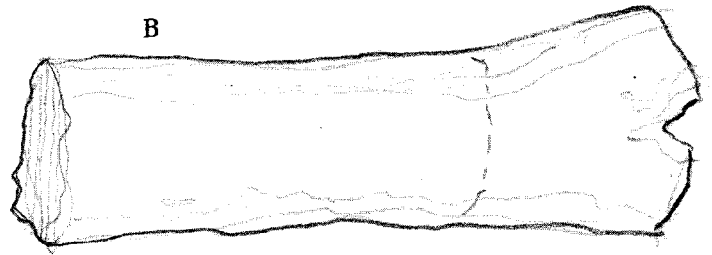
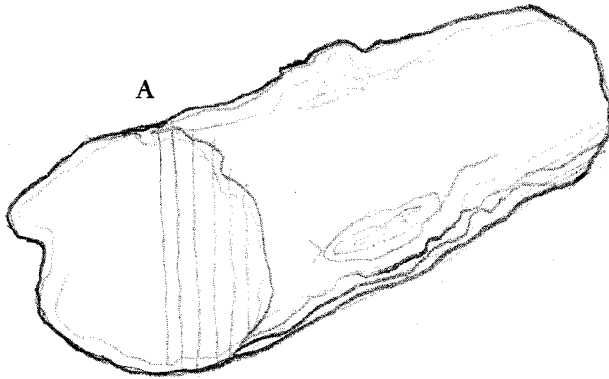
Although we could not realize the full potential of these logs, they were of amazing quality, with a graining that would never happen again. We were able to cut boards about four feet wide and seven feet long, each board unique, each board magnificent.

The key man in the process of cutting logs is the sawyer, one of the great craftsmen of our age with steady nerves and experienced judgment. It is necessary to have an almost silent dialogue with this sawyer. Few words are spoken, but thickness, the direction of the cut, the positioning of the log—all must be decided with precision.

During a day we saw perhaps thirty logs, some giant in size, each different from the others. Each must be analyzed to produce its full potential. As the hours pass, a silent symphony of visual tones unfolds, the beautiful expressions of nature's treasures, an occasional crescendo where the beauty



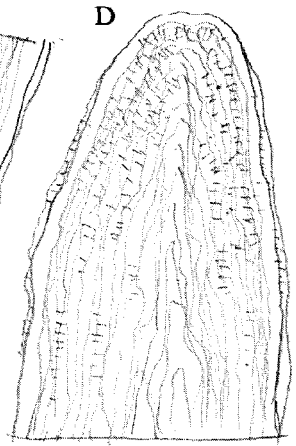
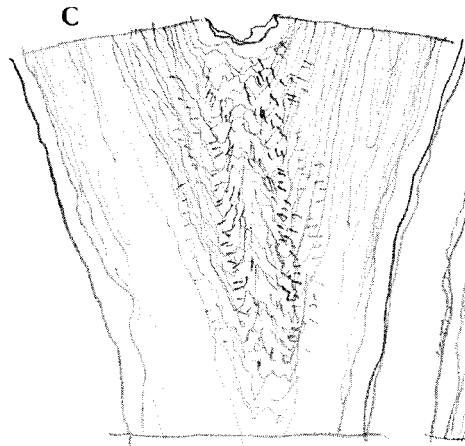
Minguren I coffee table made of book-matched English walnut root. The full page shows a detail of the free edge. Boards made from roots are difficult to book-match both because roots tend to dry irregularly and because the grain can—and does—run every which way. Photos: G. W. Holland.



Whichever name it goes by—plainsawing, "sawing for the boule," or sawing "through and through"—this method is by far the best way of realizing the full potential of a log in terms of graining and figuring. If the timber is fairly even and round, lumber may be sawed from the log consecutively, without any interruptions. If the log is uneven, with many knots, as in A, it is usually better to saw lumber only to the middle of the log, as shown, and then swing the remaining half-log 180 degrees and "re-dog" it, with the flat side flush against the saw guide.

For the best figuring, the log should pass through the saw with the crotch upright as in B. Large knots should be placed at the top, however, so that most of the boards can be cut "clear," that is, without having the knot appear in the center of the plank.

Usually, cutting across the crotch produces the finest figuring as in C. This cut also provides the greatest usable width. Cutting along the crotch, as in D, results in a somewhat triangular piece of lumber with less surface area to work with. The figuring is less intense too.



touches one's heart. There is nothing like it. The workday finally ends. I am exhausted, but happy to have witnessed this unfolding spectacle.

How thick a plank should be depends chiefly on the diameter of the log. To avoid splitting, wide planks are cut relatively thick. Trees usually grow vertically without twisting, but sometimes they grow in a spiral. Some trees change direction, twisting a few years clockwise and then counterclockwise, making a natural plywood. A tree that grows in a spiral must be cut extra thick to prevent warping. Sometimes outside cuts are thicker still to prevent cupping.

Cutting logs is a great responsibility, for we are dealing with fallen majesty. There are no formulas, no guidelines, but only experience, instinct and a contact with the divine.

Commercial grade sawing by rolling the log, the method used with almost all hardwoods in this country, is one of the most barbaric of practices. No attempt is made to bring out the log's inherent beauty. No slice is wide enough to do justice to the tree's figures and graining. The potential of the log is lost, and it ends up only as expensive yet uninteresting lumber. Quartersawing—sawing parallel to the rays which radiate from the log's center—is also popular. And it too is undesirable since it is wasteful and also fails to make full use of the log's width with its great potential for spectacular figuring.

The proper way to treat fine timber is to cut for the *boule*, starting from one side of the log and cutting through it without slabbing or squaring the log. This method of sawing is also known as "sawing through and through." If the log is a proper shape, with no unusual branching, and the equipment appropriate, this can readily be done.

Some trees in particular should be cut at the precise mo-

ment of maturity. Then the curing and drying should begin. The sapwood of American walnut is quite white when freshly sawn. A gradual process of graying takes place in the weathering until only a thin strip of white is left next to the heartwood. This is the moment for the most gracious of grains. A short while later the white is gone, and all becomes gray and less interesting. For some woods, like cherry and ash, the air drying should last only a few months, as after that an unattractive blue stain sets in. Other species are almost indestructible. I recently cut a magnificent rosewood which must have been left out to weather for about a dozen years.

The best lumber should be air-dried for one or two years, the rate of drying depending on factors such as the species, the season and the climate. In India, where it is dry and hot, the drying time can be short.

The best time to log and saw is during the fall and winter, when the weather is cool and the sap is not rising. The final process is to kiln dry, which removes the excess moisture and "sets" the grain. Kiln drying of raw lumber produces unnatural-looking lumber. To rectify the "raw" look of kiln-dried lumber, it is often steamed with sawdust to produce a "mature" appearance. More often than not this process "kills" the grain and produces a dead-looking wood.

Planks and boards are the stock of the woodworker's trade. We store them in sheds in *boule* form, all the planks cut from a log grouped together. We memorize the qualities and potential uses of all of them. Planks are best stored upright, since it is easier to leaf through them. Selections are made as required and taken to the shop.

These rough but majestic "bodies" go on to be made into objects to enhance the lives of men. □