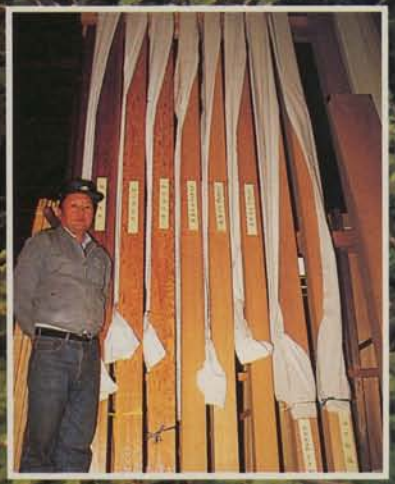
LAND of the PAMPERED PLANTATION

In Japan, forests are grown as crops, and timber management is a ritual.

By JANE BRAXTON LITTLE



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Halfway up a hillside in the Shirakami Mountains, a logger wearing a canary-yellow hardhat and knee-high split-toed boots withdraws a machete from a cherry-bark sheath slung on his belt. After hacking the stiff grasses around a two-foot-diameter cedar, he ceremonially strips the bark on the backside of the trunk, sings out a melodious warning, and cranks a chainsaw. He makes a cut deep enough to steady the saw, then backs off. Standing two feet away from the trunk, holding remote-control electronic cables in each hand, he guides the saw through its cut without danger of contracting "shaking disease." When the tree starts to move, the timber faller shuts down the saw, pulls it free, and blows a sharp blast on a whistle. Five minutes after the process began, the cedar drops perfectly along the line of the undercut.

This is Japan, where forests are grown as crops and timber management is a ritual. After centuries of wood cutting on a land base roughly the size of California, the Japanese continue to enjoy forest reserves on 68 percent of their land. The stands are tended with doting, hands-on care that produces what the Japanese consider the world's highest-quality lumber.

"We think Japanese cedar and cypress are the most beautiful woods in the world," says Osamu Waseda, a retired Japan Forestry Agency official now managing a private forest in Wakayama Prefecture. "Beauty is the most important aspect of wood in Japan, and that won't change."

The reality today, however, includes many forests standing in idle neglect while their dismayed owners watch the nation's dependence on imported lumber explode to a staggering 70 percent of the total supply. Some have been forced out of business or into head-on competition with imported wood. From Kyushu in the south to Hokkaido in the north, they complain about the high cost of production, the shortage of labor, and the abundance of cheap foreign lumber. The number of small sawmills dropped from 24,230 in 1960 to 18,260 in 1985; during the same period the number of forestry workers declined by nearly 50 percent.

Yet high in the mountains of this island country, standing in almost regal contempt of these economic realities, are forests managed for quality, not quantity. The clear fine-grained boards sawn from native cypress and cedar are part of a national tradition that is not threatened by foreign timber. Although some manufacturers worry about a dwindling supply, Japanese consumers appear willing to wait for products grown in stands their foresters have learned to sustain through time.

The fact that Japan can boast of forests at all is the result of a national awareness, cultivated through a series of near disasters, that trees are a key to both environmental and economic stability. Japanese schoolchildren learn the adage, "Mountains are earth's treasures, but without trees, they are without value. To weaken the forest is to weaken the land."

This ethic was not intrinsic to the people who first inhabited the islands. Overcutting began in the sixth century. The emperors who commanded the construction of elaborate temples bequeathed to the world both its oldest and its largest wooden buildings. They also left a legacy of environmental disaster, denuding the hillsides around the ancient capital of Nara and stripping the land of its rich soil.

Centuries later, government officials slowed relentless timber harvesting with a series of regulations. Among them was a ban on crosscut saws that forced poachers to chop down their booty with noisy axes, making detection a simple matter of keen ears. At the same time, villagers began actively replanting their naked hillsides with *sugi* (*Cryptomeria japonica*, Japanese cedar) and *hi-no-ki* (*Chamaecyparis obtusa*, Japanese cypress). The plantation forests established by the 19th century marked the beginnings of regenerative forestry in Japan.

World War II forced a change of priorities. Entire tracts of timber were clearcut, and in a feverish drive to rebuild after the war, the government imposed few limits on how much or what kind of wood could be harvested. When the Japanese recovered enough to notice the swath they had carved out of their timber resources, they returned with fervor to the reforestation practices developed a century before. Trees growing in plantations today, mostly sugi and hi-no-ki, comprise almost half the entire growing stock. Most are less than 30 years old; only around 650,000 acres are growing trees older than 60 years. But these plantations cover 12 million acres and have tripled in volume since 1960.

Signs of labor-intensive methods range from forest floors swept clean of competing vegetation to meticulous spacing of a single species in an even-aged stand. Along the Kamo River near Kyoto, woodsmen adorn the trunks of 20-year-old Kitayama sugi with red and blue plastic wrappers, an adaptation of a technique used by their ancestors. The saplings are among the millions of board-feet nationwide destined to become polished poles occupying the place of honor in traditional Japanese homes. The loose weave of the colored wraps will imprint a pattern on the wood

Photos by the Author

Most Japanese loggers still build a Shinto torii *shrine as an offering to the gods. Company official Kaga Takashi (inset) stands beside* sugi *worth $7,000 each.*

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that enhances its natural beauty to the Japanese eye.

Near Futatsu in the northwest, Hikimu Takeda tends his 350-acre forest with equal care. One stand on the terraces of an abandoned copper mine is a combination of 60-foot sugi towering over a healthy crop of three-year-old seedlings. The older trees have been hand pruned to within 10 feet of their crowns, giving the stand the look of a coniferous palm grove. Takeda experimented with a mechanical pruner but says it didn't cut close enough to eliminate knots in the finish lumber. He has returned to the age-old system of climbers who scale the slender trunks with wicker fanny-packs to hold their clippers and handsaws.

Nasahiko Yasumuro, head of a Japan Forestry Agency district office, measures a beech tree.

The climbers are among the forest workers who have created a system focused on quality. Though the nation has its share of stands grown as quickly as possible for a one-time profit—to pay for the marriage of a daughter, for example—the ultimate goal of most foresters is continuous supply of clear lumber of excellent grain, the result of one-on-one pampering from seedling to harvest. In a country where wood craftsmen are named as national treasures, even the slickest urban "salary man" can distinguish first-growth from second-growth wood products.

Producing this beauty demands constant attention. On the Ishihara Forest Factory, a 2,300-acre tract near Gifu in central Japan, Shigeki Ishihara regularly cruises his family plantation to monitor growth. When he sees two trees of different sizes planted at the same time growing side by side, Ishihara marks the larger one for harvest. It is growing too fast, he says, and will produce an unattractive coarse-grained board. He leaves the slow-growing trees to mature.

Since 1953, when Shigeki's grandfather bought cut-over mountain slopes abandoned to untended broadleaf trees, the Ishiharas have gradually converted to more commercial sugi, experimenting

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JAPAN'S "GREENS"

In October when American loggers are hustling the last loads of the season out of the woods, the forests of Japan are teeming with mushroom hunters. Some of them are local villagers whose harvests of shiitake *and* enokitake *have made mushrooms a forest product second only to lumber in economic importance. Others trek from crowded cities to the forests in search of recreation. As ultra-industrial Japan basks in the profits of one of the world's most powerful economies, its 129 million residents are increasingly seeking solace in their forests.*

Mushroom hunters pressured foresters to abandon herbicides.

To accommodate them, the Japan Forestry Agency has mandated that future management of its 19 million acres must include "human green plans"—areas devoted to recreation. Near the Tamagawa River in northern Japan, for example, a section of national forest previously managed for beech production will become a hot springs resort, bumping timber to a secondary product.

Along with welcome income for rural economies, the rush to forest recreation has called the attention of the nation to the management of its natural resources. Not everyone likes what they see; environmental groups have sprung up throughout Japan to fight dams, nuclear power plants, and river pollution. They blocked completion of a Forestry Agency road through Japan's largest remaining beech forest, forced the agency to abandon its practice of replanting clearcut beech stands with Japanese cedar, and limited the size of clearcuts to around 12 acres.

Under pressure from the public, the Forestry Agency recently designated 12 areas as conservationist zones that will remain "untouched by human activity." Says Yoshio Utsuki, forest management director on the Akita Forest, "This will not end with these 12 areas. The public will continue to demand greater protection for natural areas."

The current surge of public interest may actually represent a return to a traditional awareness of the importance of maintaining a stable environment. There is nothing new, for example, about planting black pines along the Japan Sea to prevent erosion, but many such conservation techniques were abandoned during and after World War II.

*"Before, they somehow took it for granted that they had to accept these environmental conditions," says Tatsuya Tanami, program officer at International House of Japan in Tokyo. "Now people feel that when something happens to the environment, even in the cities of Kyushu or Hokkaido, it's important to their lives."—*JANE BRAXTON LITTLE

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along the way with a variety of management techniques. A test replacing traditional tidy forest floors with natural organic litter convinced them that they could reduce erosion and labor costs and increase soil productivity by leaving forest materials in the woods.

The Ishiharas also experimented with clearcutting and have now entirely replaced it with single-tree selection harvesting. It was not the aesthetics of clearcutting but the appetite for high-quality timber that caused them to abandon clearcutting. The trees replanted in the large openings got too much light, grew too quickly, and were coarse-grained, says Ishihara, and fetched lower prices.

His boldest experiment is direct slip cultivation. Instead of buying sugi seedlings from government nurseries, the Ishiharas have returned to reforestation by scions, a method used in Japan as early as the ninth century. Foresters select finger-size branches from "mother" trees of known quality. Finding just the right branch is time-consuming, but it determines the value of the new tree. Ishihara gives it the kind of attention an Ikebana flower arranger gives her boughs.

Fastidious attention to growing stock may produce high-quality lumber, but it has done nothing to satisfy the growing Japanese demand for wood products. Very few plantations are mature enough for climax harvesting. Ishihara estimates a 200-year wait before his family's stands reach the final cutting stage. What few domestic sawlogs are harvested command breathtaking prices.

Hishika Lumber Co. Ltd., a sawmill in Noshiro on the northwest coast, deals exclusively with Japanese sugi, turning out products that range from traditional wooden cake boxes and lanterns to 20-foot polished planks destined for Shinto shrines. Deep in a warehouse behind the Hishika sawmill, company vice president Kaga Takashi stores what he calls his treasures: 4 x 4 sugi beams 13 feet long, each labeled in careful calligraphy. Takashi draws back protective white cloth covers, revealing elaborately grained patterns in some, stark simplicity in others. These beams are worth $7,000 each.

"You feel the spirit in such wood," says Hiroshi Masuko, a forestry Agency logging specialist who helps Takashi procure raw lumber for his mill. "This is Japanese lumber at its finest."

But cost has driven such traditional materials out of the reach of most Japanese, and many have come to accept veneer as a substitute. Special slicing machines in the Hishika Lumber Co. sawmill produce paper-thin strips of sugi, which are glued onto cheap imported beams. Most Japanese prefer their own cedar veneer to a solid beam of imported wood, says Masuko.

Others are critical of Japan's recent role in depleting tropical rainforests and the effect of wholesale imports from North America on the temperate forests of western Canada and the Pacific Northwest.

The use of foreign timber for veneer core is just one instance of Japan's growing dependence on non-native wood products. Each year more than 16 million board-feet are imported, 40 percent from Canada and the United States. Japanese use American pine and fir for structural framing, door and post cores—places where it will not show. Tropical hardwoods from Southeast Asia are used for concrete forms, cheap boxes, and throw-away chopsticks. The Japanese reserve their own high-quality domestic lumber for aesthetic end uses—posts and planks in the honorary alcoves of traditional houses, specialty artifacts, and Shinto shrines.

Japanese growers and manufacturers of cheaper dimension lumber are struggling. Many small private forests have been abandoned, their owners content to allow hardwood "weeds" to take over what might have been productive stands. Others have been clearcut, a harvest method used these days for fast money from quick sales without regard for a continuous supply of lumber. In Akita City, Masaaki Shingo operates his family sawmill at 75 percent capacity because he cannot find enough low-quality sugi for full operations. Each year he has to go farther and farther for logs.

Despite these shortages, there is widespread optimism that once its post-war plantations begin to produce in 10 to 20 years, Japan will enjoy a domestic supply to satisfy its traditional demand. Some, including Jiroh Namura, executive director of Japan Overseas Forestry Consultants Association, worry about the long-term supply of imports, citing poor forestry practices in developing nations where Japan has satisfied much of its appetite for wood. Others are critical of Japan's recent role in depleting tropical rainforests and the effect of wholesale imports from North America on the temperate forests of western Canada and the Pacific Northwest.

But few Japanese are concerned about their own forests, where managed stands continue to produce board after beautiful board, however slowly, and foresters continue to replant after they have harvested. Although it has made its share of mistakes during a millenium of forest management, Japan has reached the stage where foresters understand the importance of reforestation, says Waseda, the retired Forestry Agency executive.

"There are no natural forests left, and we'll never get them back," he says. "So we have to replant wherever we cut trees—everywhere in the world. With forestry, if you don't think in terms of hundreds of years, you're making a big mistake." **AF**