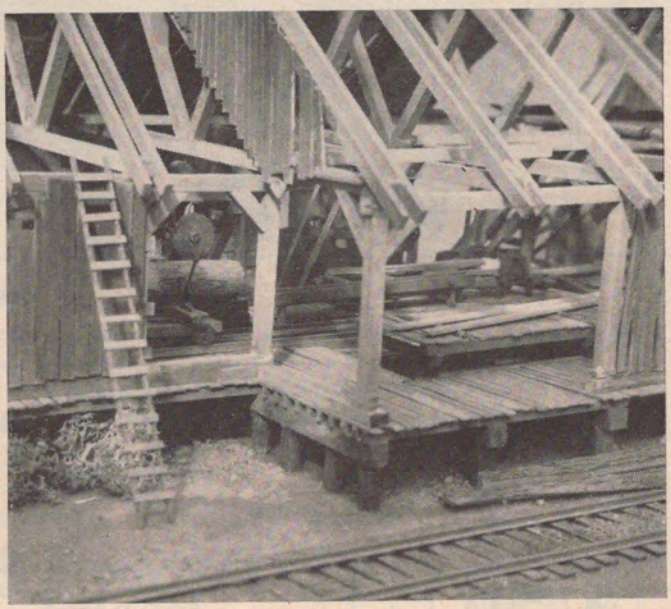
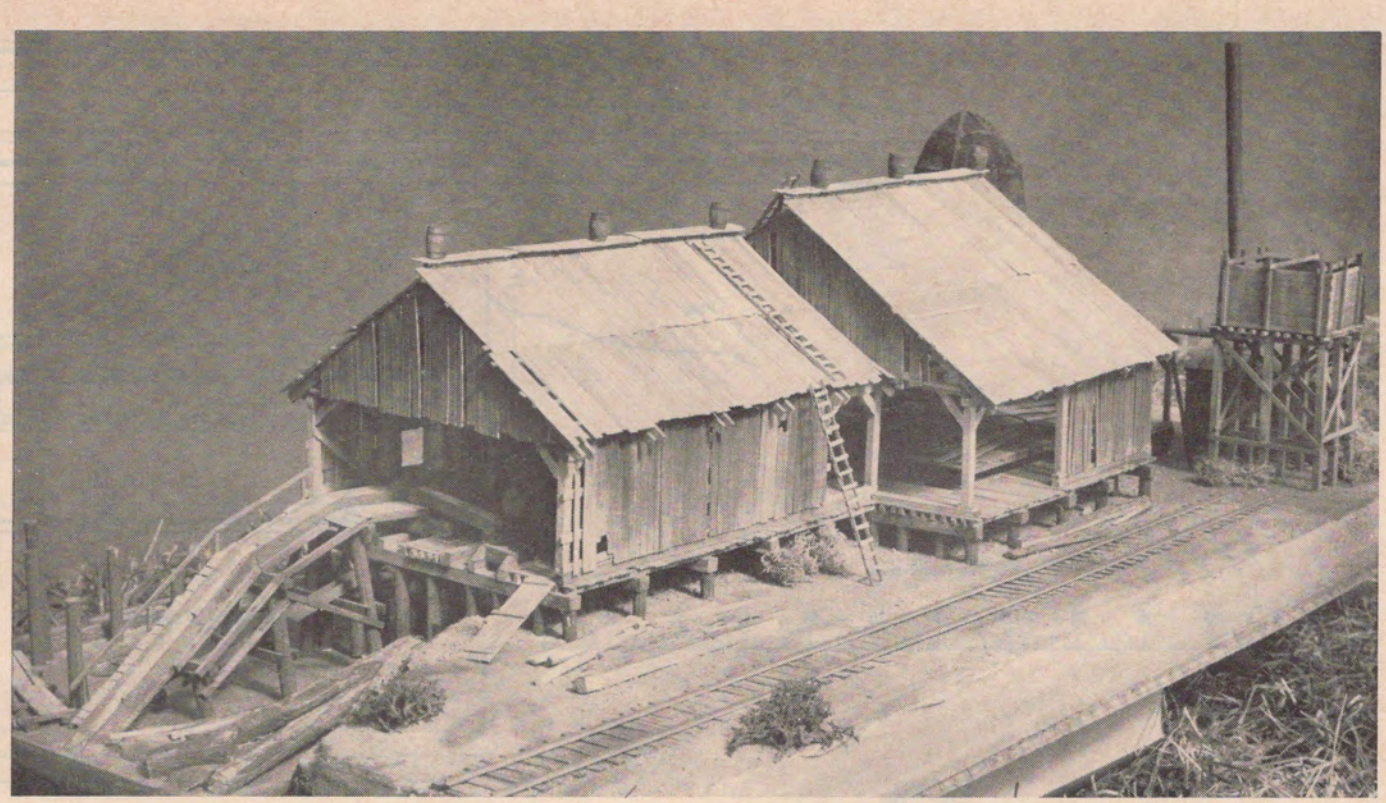
Completed model of sawmill includes ever-present clutter such as sawed ends of boards, shavings, dust and ashes under the burner from waste.

View from conveyor end of mill shows the continuous chain log hoist, pond and log deck. Logs are caught up by the lugs on the chain hoist.



Interior detailing was necessary because of openings in the walls. Shown are the saw, log carriage with kickers, and steam engine power plant.



The realistic appearance of the sawmill resulted from using scale lumber for walls and roof, careful weathering, and attention to small details.

Modeler's notes for building a freelance

Western sawmill

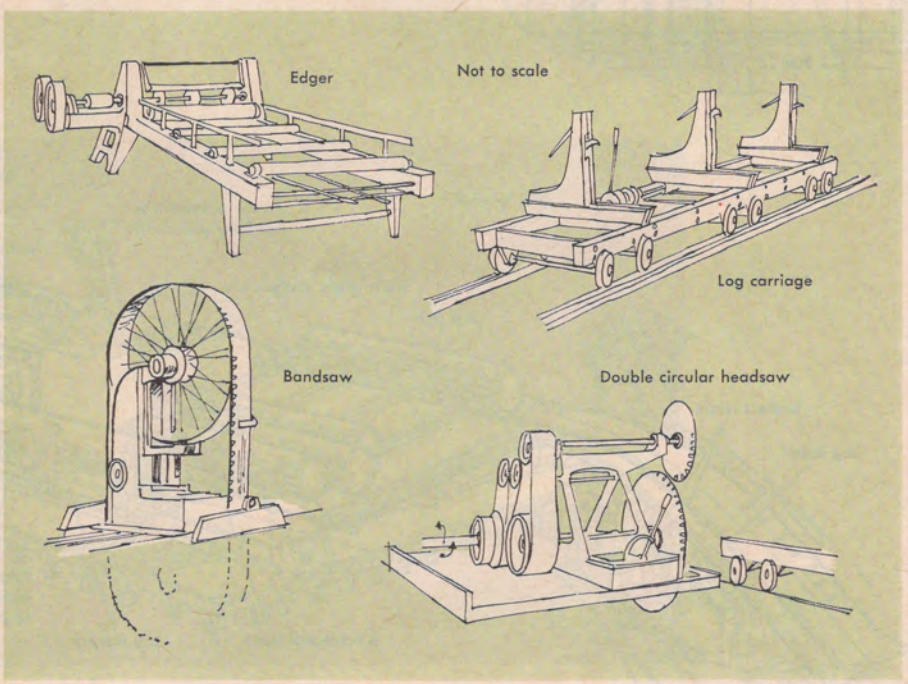
Story by Don Reschenberg

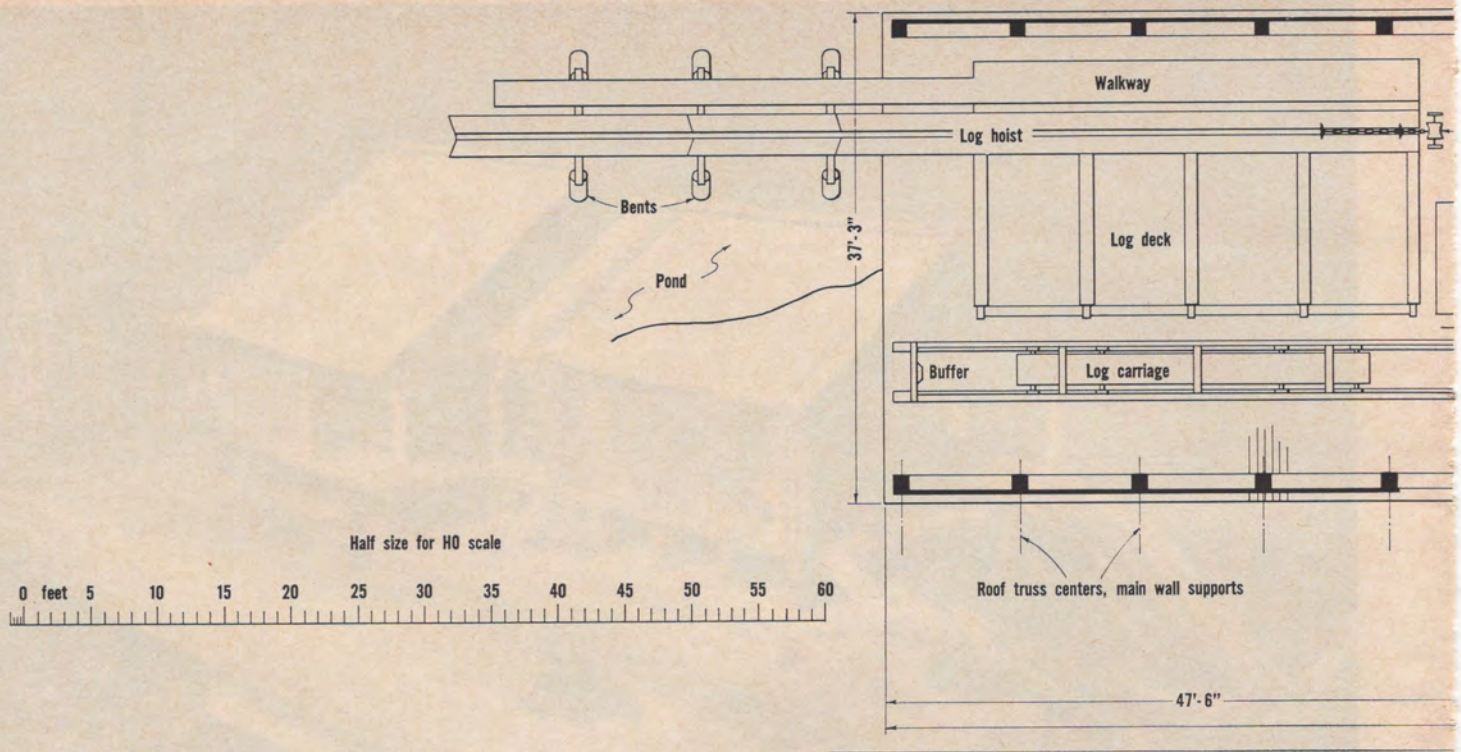
Model, drawings, and photos by Charles W. Swanberg

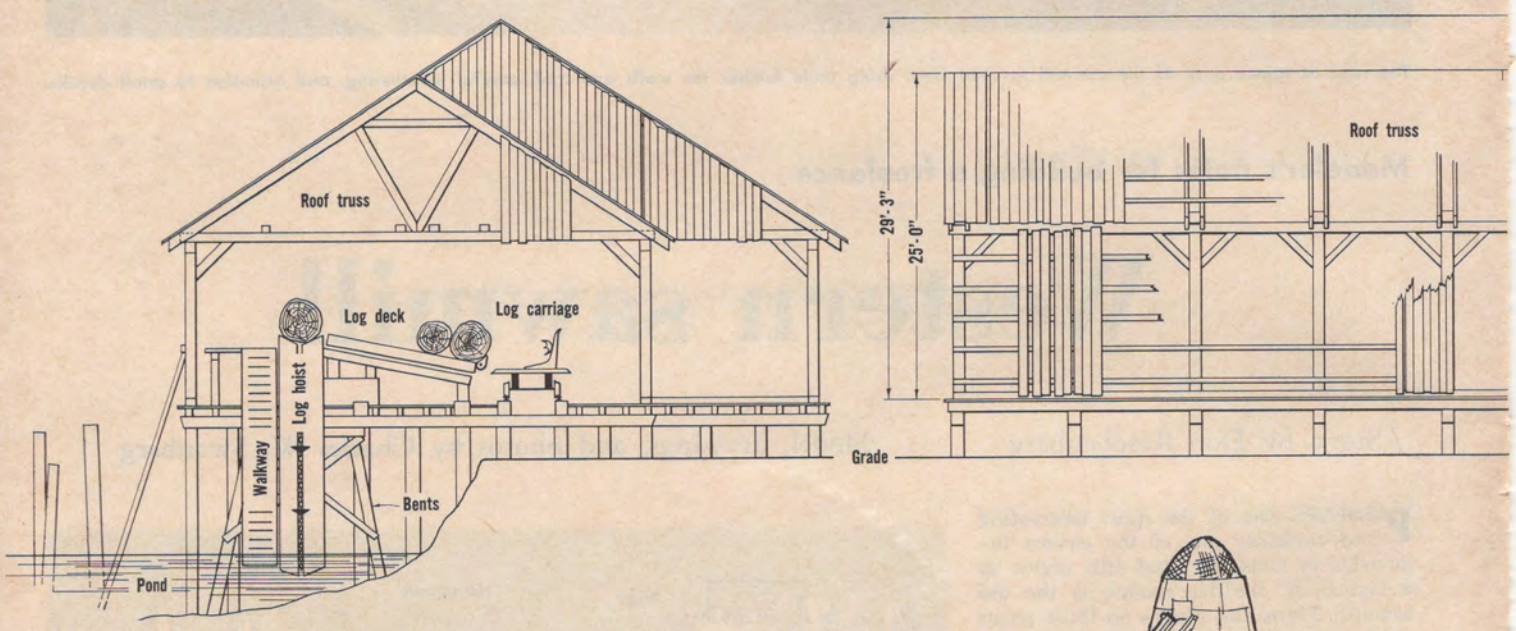
PERHAPS one of the most interesting and certainly one of the easiest industries to freelance, and still arrive at a logical or credible model, is the old sawmill. Plans and photos on these pages were supplied by Charles W. Swanberg, who collected the information and pictures from a variety of sources and used the data to build the model shown. (Photos of this model also appeared in the February 1961 MR.)

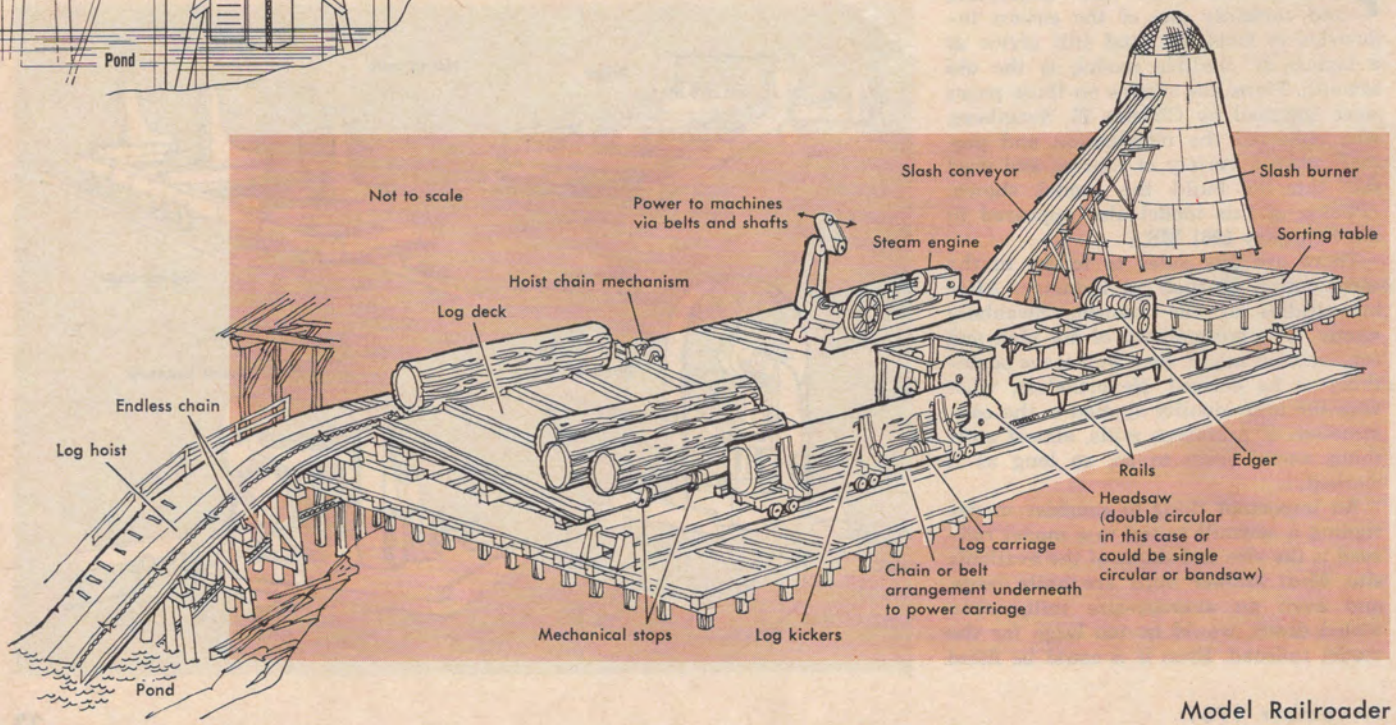
There are few rules to follow in the construction of such an industry. After his studies of the subject, Swanberg wrote, "The authenticity of my plan and construction might very well leave something to be desired. Nevertheless, what with the individuality applied to the construction of prototype mills, almost anything would seem to go, so long as it worked."

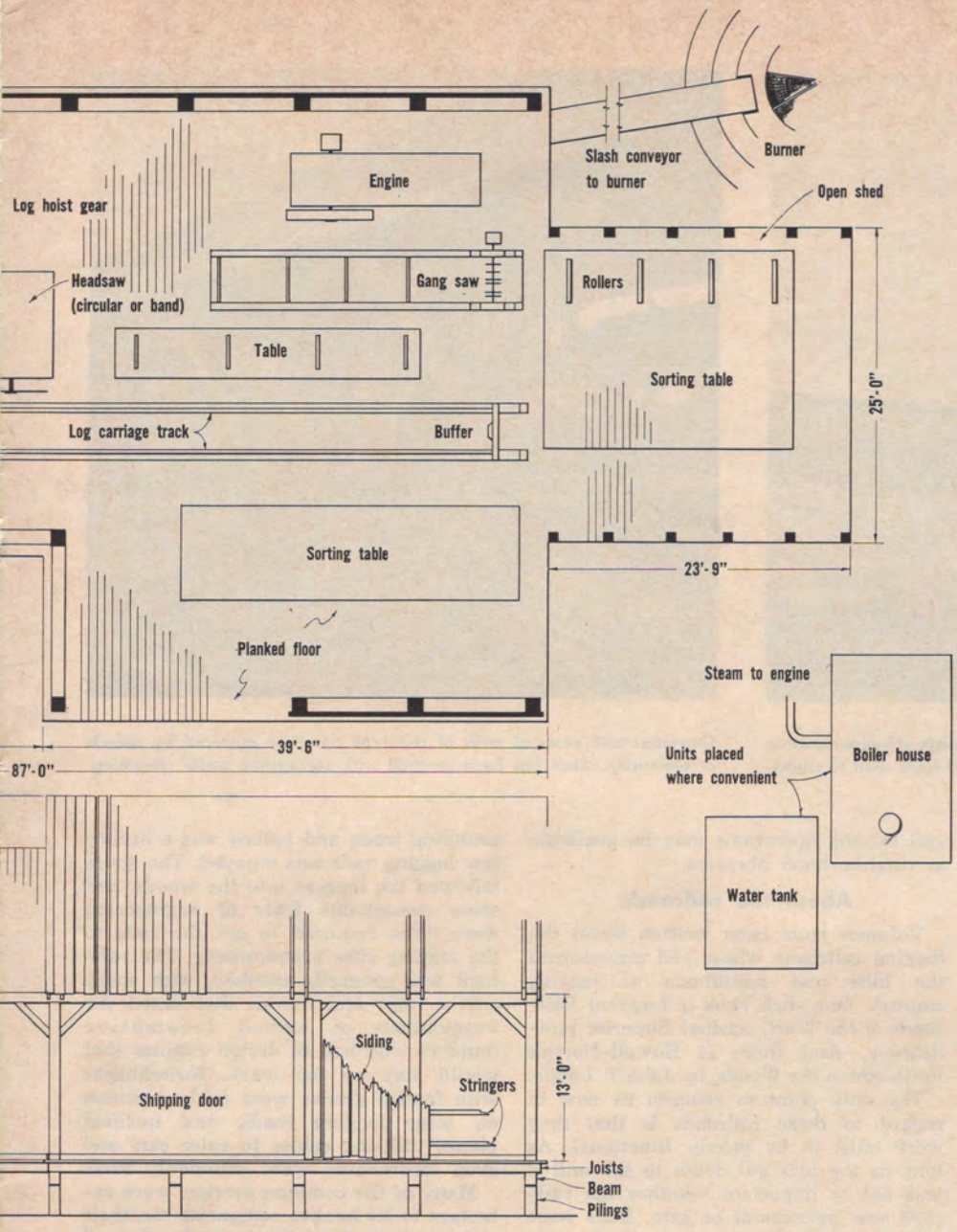
An important thing to consider in designing a sawmill suited to a model railroad is the size and shape of the available site. Most lumber mills are quite large, and even an average-size mill, when scaled down, would be too large for the model railroad. Even if it could be fitted




Walkway
Log hoist
Bents
Log deck
37'-3"
Pond
Buffer
Log carriage
Half size for HO scale
0 feet 5 10 15 20 25 30 35 40 45 50 55 60
Roof truss centers, main wall supports
47'-6"


Roof truss
Log deck
Log carriage
Log hoist
Walkway
Bents
Pond
Roof truss
29'-3"
25'-0"
Grade


Not to scale
Power to machines via belts and shafts
Slash conveyor
Slash burner
Steam engine
Sorting table
Hoist chain mechanism
Log deck
Endless chain
Log hoist
Rails
Edger
Headsaw (double circular in this case or could be single circular or bandsaw)
Log carriage
Chain or belt arrangement underneath to power carriage
Mechanical stops
Log kickers
Pond



in the space, it would dominate the scene.

One answer is to build one of the small "farm" type mills. This might be driven by a traction engine or perhaps a water wheel. Such mills were, and still are, generally operated to cut fenceposts, barn timbers, and other rough lumber for local uses.

In most cases the shed of such a mill was barely large enough to cover the main saw and only part of the log carriage. The rest of the works was in the open air. Only occasionally are such small mills found with railroad service.

While logs are taken by sled, wagon, or truck to the log deck at a farm mill, larger mills often have more elaborate means — river rafting, in later years a railroad, today trucks. In the railroad mills a tilted track or some other sort of unloading scheme is used to unload the cars, the logs rolling into a pond for storage. The pond makes it easy to move the logs about when needed.

When a log is needed, it is floated to the log hoist, a chain conveyor at the entrance to the sawmill building. The hoist raises the log to the deck. On the deck the log is transferred to the log carriage and locked in place with hooks called kickers. The operator then pulls a lever, engaging the clutch of the engine, which starts the log on the carriage moving toward the saw. These parts — deck, carriage, engine and saw — were all that were required in the small rural mills. There is, of course, much more to the big mills in the way of machinery, depending on the type of milling to be done.

The model mill shown does not include such things as trimmer, cutoff saws or planers, mainly because the mill might be used primarily for the production of rough building lumber.

Reference books that are good sources of material on sawmills are *This Was Sawmilling* and *This Was Logging*, by Superior Publishing Co. Besides these books, a wealth of information on milling

Detail view of log hoist shows the massive continuous chain with its lugs to catch the logs and the rails on which they slide up to the log deck.

Shed in back of mill houses boiler which feeds steam to the engine by pipeline. Note how the pipe has been insulated between buildings.

Sawmill near New Westminster, B. C., Canada, consists of hopper-bottom shed on pilings and roof over saw. Slash is dumped from shed to trucks.

Carriages and saws of mills of this type are now powered by diesels or electricity. Roof has been covered with corrugated metal sheathing.

End view of the mill. From appearance of the surrounding area, slash conveyor is out of order!

Log about to go through a large mill at Marysville, Wash. This old mill produces mainly wood shakes (shingles) for building contractors' use.

and logging operations may be available at neighborhood libraries.

About the railroads

Volumes have been written about the logging railroads whose rail crisscrossed the hills and mountains of logging country. One such book is *Logging Railroads of the West*, another Superior publication. And there is Howell-North's *Railroads in the Woods*, by John T. Labbe.

The only point to concern us now in regard to these railroads is that they were built to be purely functional. As long as the logs got down to the mill it was not so important whether the railroad was permanent or safe. Rails were laid on untreated ties cut from the surrounding trees, and ballast was a luxury few logging railroads enjoyed. The spurs followed the loggers into the woods, and some remarkable feats of engineering were often required to get the rails to the logging sites economically. The railroad was generally crooked, with sharp curves, dips and humps that taxed the imaginations of various locomotive builders who had to design engines that would stay on the track. Switchbacks with fearful grades were fairly common on some logging roads, and inclined planes utilizing cables to raise cars and even locomotives were commonly used.

Many of the common carriers were reluctant to let lumber companies use their rails to haul logs. Some roads charged

Close view of another mill, above opposite, reveals materials used in its construction. Wood, tar paper and corrugated sheathing all add to its character and value as a modeling subject.

Over-all view shows the mill's size, many odd roof angles and small outbuildings. Main structure is in a dilapidated condition, due in part to the use of pilings instead of more substantial foundations.

exhorbitant prices, and this prompted some logging companies to build their own railroads to the mills.

A number of logging roads were converted into public service corporations in later years, a practice used by the loggers mainly to get authority to condemn rights of way. As a public carrier, the lumberman had as much right as any railroadman to secure land for his railroad.

A place on the layout

If there is a place on the layout for a small mill and pond, you don't have to worry too much about finding a suitable prototype. The structures are basic, sometimes consisting of no more than a roof covering the working area. Buildings can be constructed of stripwood, or, if modeling one of the buildings that has been sheathed with corrugated iron, sheetwood or Suydam's metal could be used. Perhaps the most difficult part of the scene to model is the machinery. Steam engines made in England for the Matchbox Series can be used for an HO model, though they are not exact 3.5 mm. scale models. The saw can be simulated with a fine-toothed gear from an old watch, and writing-paper straps, guided by pulleys cut from dowels, will serve as belts to power the machines. Most other parts of the project can be made of wood or cardstock, as in the case of the slash burner. Add clutter as shown in the photos.

Brick slash burner with tie-bands is covered with wire mesh as protection against fires.

Mill structure has been added to a number of times through the years with the result that it now looks like a cluster of small buildings.

Pond area of a sawmill is a study in clutter, mud and floating debris. Detail like this is what makes a sawmill an asset to a model railroad.