

## VIEWS AND INTERVIEWS.

Felling Trees  
By Electricity.

To what ends may electricity be not applied? A successful trial has been made in Sweden to fell trees by means of electricity. The method is very simple and consists in passing the platina wire around the stem of the tree heating it to a glow, cutting through the same much in the same way as one would divide a piece of soap with a piece of twine. One of the chief advantages is that the end of the log being burnt gives the log a better quality.

Heat of  
Trees.

Investigations have been pursued in Belgium by M. W. Prinz for the purpose of ascertaining the internal temperature of trees. He finds, that as a rule, a large tree is warmer than the air in winter, and a little colder than the air in summer. The mean annual temperature of a tree is practically the same as that of the surrounding air, but the monthly mean differs by several degrees. Heat changes are transmitted slowly to the heart of a tree, the temperature of the interior differing sometimes as much as ten degrees C. from that of the air. When the air temperature is below the freezing point, the temperature of the tree appears to remain just above the freezing point of its sap, and in the hot days of summer the internal temperature was not known to vary more than two degrees from 15 degrees C. (59 degrees F.)

The Timber  
Cruiser.

The aborigines have their own peculiar methods of acquiring knowledge and arriving at certain conclusions. Our boyhood days have been delighted with stories of the native red man and his ways of living. But the story comes to us, as told by Julius Chambers in a recent issue of the Century, that forms even a strange parallel to the life of the red man. The tale is of the timber cruiser who is more a child of the forest, says Mr. Chambers, than the native he succeeds. He is the precursor of the lumberman and the saw mill, two important factors in our progressive civilization. He is untaught. Generally he knows nothing of astronomy but the sun's course and the polar star, because the heavens are so often wholly out of sight in the tangled forest that he relies on their guides. The mysterious secrets of terrestrial nature, handed down to him by generations of pathfinders gone before, keep him informed. On the prairie he knows that the tips of the grass always incline toward the south, and that they are less green on the northward side. In the forest the slender twigs on the boughs bend southward so slightly, it may be, that only the trained eye can detect the deflection; yet it is there. The moss on the tree trunks is always on the north side; the bark is smoother and more supple on the east than toward the west, and southward the mildew never comes.

Some Big  
Trees.

The trees of the forest have thoroughly established themselves in literature. The poet sings of them, the descriptive writer finds few themes on which he can dilate with greater ease and picturesqueness than the giants of the woods, or it may be tiny shrub of our gardens. The esthetically inclined finds in the tree, its constitution, and foliage, a subject for endless study. The student of forestry knows full well the important part the trees of the forest play in the regulation of climatic conditions and the fixing and sometimes the unfixing of agricultural pursuits. But in general literature stories of the size of some of our great trees occupy, perhaps, the most popular place. It is a little hard to say just how correct these stories may some times be, for every writer is apt to think he can tell the best tree story. It has, however, been pretty fully established that the big tree is surpassed in size only by the eucalyptus of Australia, while the redwood may claim the honor of being the third largest tree in the world. The largest known redwood is 305 feet in height and twenty feet in diameter. The big tree attains a greater diameter, but does not reach a proportionately greater height. Thus there are big trees recorded having a diameter of forty-one feet, but we have seen none mentioned as being over 400 feet in height. The height of the largest known eucalyptus tree is stated to be 470

feet, but the diameter is only twenty-seven feet. So while taller than the largest big tree, if their proportions are the same, the California tree has about twice the bulk of the one which grows in Australia. With odd exceptions, however, we find perhaps the best average of big trees in the Dominion among the splendid trees of British Columbia on the Pacific Coast.

Foolish  
Bravado.

Can the number of accidents in our mills and shops be lessened? As we have more than once pointed out in LUMBERMAN columns were there a little less foolish bravado and a more serious regard for the value of one's own life there would not be so many accidents. The subject is one where line upon line is an absolute necessity. It is, as another has remarked, familiarity with danger seems to breed often a contempt for it, and an utter carelessness. Our contemporary, The Tradesman, remarks, we have seen the "Mohawk Dutchman," the celebrated expert with a band scroll saw, rub the ball of his thumb in dirty grease and then cut the grease off with the rapidly running saw as clean as could be done with soap and water. We have seen a man put his finger under a powerful trip hammer in motion just to show how well he could manage the machine. Many other foolish things are done just to "show off." But most of the accidents happen through a carelessness resulting from familiarity. As long as an operator is afraid of his machine he is not apt to get hurt. Many human minds are so constituted that they cannot bear a sustained effort in one direction; that is, cannot be always equally on the alert in regard to a certain contingency. A train dispatcher or switch tender may hold a place for years without ever making a mistake, and at last make a terrible one from some cause he could not explain. The only way to lessen the number of casualties—they cannot be avoided entirely—is to take precautions.

## FOREST PROTECTION.

PROF. B. E. FERNOW, the forestry chief of the United States government, has summed up the forestry legislation of Europe in the following manner in the April Century:—

In Germany, the various governments own and manage, in a conservative spirit, about one third of the forest area, and they also control the management of another sixth, which belongs to villages, cities and public institutions, in so far as these communities are obliged to employ expert foresters, and must submit their working plans to the government for approval, thus preventing improvident and wasteful methods.

The other half of the forest property, in the hands of private owners, is managed mostly without interference, although upon methods similar to those employed by the government, and by trained foresters, who receive their education in one of the eight higher and several lower schools of forestry which the various governments have established.

The several states differ in their laws regarding forest property. Of the private forests, 70 per cent. are without any control whatever, while 30 per cent. are subject to supervision, so far as clearing and devastation are concerned.

The tendency on the part of the government has been rather toward persuasive measures. Thus, in addition to buying up, or acquiring by exchange, and reforesting waste lands—some 30,000 acres have been so reforested during the last 25 years—the government gives assistance to private owners in reforesting their waste lands. During the last 10 years \$300,000 was granted in this way.

In Austria, by a law adopted in 1852, not only are the state forests (comprising less than 30 per cent. of the total forest area) rationally managed, and the management of the communal forests (nearly 40 per cent.) officially supervised, but private owners (holding about 30 per cent.) are prevented from devastating their forest property to the detriment of adjoining. No clearing for agricultural use can be made without the consent of the district authorities, from which, however, an appeal to a civil judge is possible, who adjusts the conflict of interests.

Any cleared or cut forest must be replanted or reseeded within five years; on sandy soils and mountain-sides clearing is forbidden, and only culling of the ripe timber is allowed.

In Hungary also, where liberty of private property rights, and strong objection to government interference, had been jealously upheld, a complete reaction set in about 15 years ago, which led to the law of 1880, giving the state control of private forest property as in Austria.

Under a law adopted in Italy in 1888, the department of agriculture, in co-operation with the department of public works and in consultation with the forestal committee of the province and the respective owners, is to designate the territory which, for public reasons, must be reforested under government control.

The owners may associate themselves for the purpose of reforestation, and for the purpose may then borrow money at low interest from the State Soil-Credit Institution, the forest department contributing three-fifths of the cost of reforestation upon condition that the work is done according to its plans, and within the time specified by the government.

In Russia, until lately, liberty to cut, burn, destroy and devastate was unrestricted; but in 1888 a comprehensive and well considered law cut off, so far as this can be done on paper, this liberty of vandalism. For autocratic Russia this law is rather timid, and is in the nature of a compromise between communal and private interests, in which much, if not all, depends on the good will of the private owner.

A federal law was adopted in Switzerland in 1876 which gives the federation control over the forests of the mountain region embracing eight entire cantons and parts of seven others, or over 100,000 acres of forest. The federation itself does not own any forest land, and the cantons hardly 1000,000 acres, somewhat over 4 per cent. of the forest area, two-thirds of which is held in communal ownership, and the rest by private owners.

The federal authorities have supervision over all cantonal, communal and private forests, so far as they are "protective forests;" but the execution of the law rests with the cantonal authorities, under the inspection of federal officers.

In France, not only does the state manage its own forest property (one-ninth of the forest area) in approved manner, and supervise the management of forests belonging to communities and other public institutions (double the area of state forests), in a manner similar to the regulation of forests in Germany, but it extends its control over the large area of private forests by forbidding any clearing except with the consent of the forest administration.

## NOTES ON STEAM.

The expense of restoring worn-out piston rods is much greater than the difference in cost between a good and a poor packing. If fibrous packings are used select those which have the greatest amount of elasticity. Those having a flat surface next the rod allow of a more perfect bearing and require less pressure to keep them tight. Packings should not remain too long in use, or long enough to become hard, otherwise the rod will be sure to be scored. A perfect piston rod is one of the surest indications of a careful engineer, as a scored rod indicates the careless and unthinking engineer.

We would like to inquire what a safety stop is on a governor for, if not to be used? It is by no means an uncommon thing to go into an engine room and find the blocking-up pin left in the governor of a Corliss engine or the lever hooked up, or the collar thrown around on a Greene, or the top motion on a Wheelock not in position. The excuse that the engineer has is usually no excuse at all; that he is always around, and if anything happens he is right at hand. These devices can be thrown in position for use in a second, and surely an engineer can spare that amount of time every day. When an accident happens it is almost invariably when some one is not at the throttle, and it only takes a few seconds to bring an engine to the danger point of speed. Do not be found with this protection against racing not in position, if there is one on your engine, is our advice to engineers.