

Guardians of Forest



FIRE IN BLACK HILLS NATIONAL FOREST

THE latest word in the protection of the forest from fires comes from the Black Hills, where by means of a lookout on a high peak, who locates incipient fires by means of a map and telephones their exact location to various ranger stations, hundreds of thousands of acres of fine timber lands are made immune from the scourge that threatens the nation's lumber resources, says a writer in the New York Tribune.

The national forests of the Black Hills have been the scene of many disastrous fires in recent years. The country is sparsely settled, and it is difficult to get sufficient help to fight a fire that has gained any headway. On that account the forest service has been bending every energy to catch fires in their incipency.

The first step toward solving the fire problem was the selection of a lookout station. A station was established on Harney peak, the highest point in Harney National forest, at an altitude of 7,242 feet above the sea level. The peak itself is a barren rock, from which a clear view can be had on every side. The approximate forest area which can be seen from the lookout station is 400,000 acres, and it is estimated that the amount of standing timber in this area is 1,200,000,000 feet. The radius of a circle which can be covered from any lookout station depends entirely upon the topography of the surrounding country, the weather conditions and the condition of the atmosphere. Fires have been definitely located from the Harney lookout station twenty-five miles distant. Some of the area thus covered is in the Black hills forest and some is outside national forest boundaries.

Useful Maps and Phone System.

Telephone connection is maintained between the lookout station and various ranger stations in the national forests. In fact, without an adequate system of telephone lines the lookout station would be of little value. But after sighting the smoke of a distant fire the lookout steps to the telephone box on top of the barren peak and is soon in communication with the nearest ranger station.

To describe the exact location of a fire, even when it is sighted from the peak, afforded a pretty problem. In most cases the smoke from the fire would not be visible to the rangers. The rolling hills, covered with the heavy growth of timber, effectually shut off all signs of distant fires. It would not do to depend entirely on general instructions, as there are few trails through the forest. The exact location must be described if an effective

fight was to be made against the fire.

The solution was worked out by providing the forest officials with maps. On sighting a fire the man at the lookout station figures out its exact location on the map of the forest. He then telephones the location to the chief ranger, who is familiar with all the roads and trails in the forest and knows instantly how he can best reach the fire.

On receiving a fire warning from the man at the lookout station, with the map location of the blaze, the fire fighting force departs for the scene of the fire, armed with shovels, axes and other fire fighting paraphernalia. The effectiveness of this plan was shown last summer in a unique way. The lookout described a column of smoke arising from a certain part of the forest and called up headquarters, describing the location on the map. The fire fighters were rushed to the scene of the fire in wagons and found it in a gully only a few hundred yards from a ranch house. Yet so well screened was the smoke from those at the ranch house that it had not been seen there, and the farmers were amazed when a fire fighting crew descended on the ranch with the information that a fire threatened destruction almost at the very door of the farmhouse.

Great Saving at Small Cost.

Besides being connected with the office of the former supervisor and with the various ranger stations in the forest, the Harney forest lookout is also connected with the ranger stations on the Black hills forest. A shelter is constructed at the top of the peak for the use of the lookout. The guardian of this immense forest area lives a lonely life, but his wants are well provided for. He has a tent at the base of the spire of rock which forms the top of the peak. All his supplies and water have to be carried to him. He gets a salary of \$75 a month, but is required to pay for his own supplies and the transportation of the same. Transportation of forest service equipment to and from the station is furnished, but that expense for a season does not exceed \$25. It is difficult to estimate the amount of money saved by the establishment of this permanent lookout, but the sum is very great. The only other feasible method of patrol would be to select a number of less important peaks and establish lookout stations on them.

This would multiply the expense by at least four, but would result in no better service. To increase the number of guards would mean a heavy expense, and probably would not give as good results, for the reason that the heavy forests on the lower hills

act as a screen, which makes it practically impossible to descry fires at a distance.

Between July 12, 1911, when the station was ready for use, and September 30, 28 forest fires occurred in the Harney forest. Seventeen of those were reported by the guard at the lookout station, and in only two cases where the lookout reported fires had a previous report been received. Six fires were reported from the lookout station which were within the Black hills forest, and one fire was outside forest boundaries. In every case the rangers were able to get to the scene promptly and to extinguish the fire before any appreciable damage had been done.

It is probable that the success of the Harney lookout will result in the establishment of similar stations in other forests. The old adage that an ounce of prevention is worth a pound of cure seems particularly applicable to Uncle Sam's fire threatened timber reserves.

Always Leap Year in New Guinea.

So far as proposals of marriage are concerned in New Guinea it is always leap year, for in that island the men consider it beneath their dignity to solicit women, much less to make overtures of marriage. Consequently the proposing is left to the women to do. When the ebony belle falls in love with a man she sends a piece of string to his sister, or if he has no sister, to his mother, or another of his lady relatives. Then the lady who receives the string tells the dusky Adonis that the particular damsel is in love with him. No courting follows, however, for it is considered bad form to waste time in such a pursuit. If the man thinks he would like to wed the lady, he meets her alone, and they decide straight away whether to marry or drop the idea. In the former case the betrothal is announced. The man is then branded on the back with charcoal, while a mark is cut into the woman's skin. No breach of promise actions are possible in New Guinea, though if the lady is jilted her friends may hunt her lover up and "go" for him.

Question of Grammar.

The ready wit of the late Eugene V. Ware, author of "The Washerwoman's Song" and other poems, is shown in the following story:

He was giving a dinner, says Lippincott's, at his home in Kansas City, Kan., the place to which he had retired after he resigned from the office of pension commissioner at Washington under Roosevelt.

The guests were equally divided between Missourians from the twin city across the line and Kansans. All present had imbibed the spirit of their genial, humorous host.

Said a Missourian: "You Kansans always have your brass bands going and your flags flying. We from Missouri get tired of your cocksureness. Tell me, what have you decided about the hen, for instance; does she sit or does she set?"

"We don't bother about things like that," flashed Ware. "What concerns us, when she cackles, is has she laid or has she lied?"

For a Rainy Afternoon.

On wet days children are apt to find time hanging heavily, but this difficulty is overcome if games are provided.

Bubbles always find favor with young folks, but some little preparation beforehand needs to be made when bubbles are the attraction, otherwise the children are likely not only to make their dresses wet, but the tablecloth and carpet also.

The table on which the bubble bowl is to stand should be covered with sheets of newspapers, and an old blanket or something of the kind, and the carpet near by should also be spread with newspapers.

To make the necessary suds, dissolve finely shaved white soap in a very hot water, adding a little glycerine to make the bubbles tenacious. Clay pipes are, of course the other implements needed.

Somewhat Incomplete.

Besides prophesying "warres, revolutions and the death of kynges," an almanac of the fifteenth century told you the proper day to take medicine. Monday was the day for ailments of the legs, Tuesday for affections of the head. But what the sufferer was to do who had a pain on the wrong day it does not state.

Paper From Cotton Stalks.

Cotton stalks, it is thought, may be used for the manufacture of paper. A machine has been patented which will separate the brown bark from the inner pith, and it is claimed that excellent paper pulp may be made from the latter. From the bark a substitute for excelsior is manufactured.

Still There's Generally a Supply.

Marriages, we are told, are made in heaven, but it takes all kind of marriages to use up the raw material.—Puck.

Seldom.

A man seldom has the courage of his wife's convictions.

ENCOURAGING REFORESTATION

By H. S. NEWINS, Department of Forestry, Oregon Agricultural College

During the fall of 1911 the United States Forest Service purchased in Oregon and Washington more than 10,000 two-bushel sacks of Douglas Fir seed cones. The price paid was an average of 75 cents per sack. In some localities the cones were purchased for 50 cents per sack while in other places the price ranged as high as \$1, this being dependent upon local conditions, as much as upon abundance and quality of the seed and the degree of competition with private collectors in making the purchase. The cones were accepted at the nearest railway point and shipped in carload quantities to the government drying plant at Wyeth, Oregon. Here they were properly stored, later placed in trays and subjected to a temperature of 120 to 140 degrees F., until the cones opened and the seed fell out through the screened bottoms of the trays to canvas sheets below. The seeds were not subjected to a higher temperature than that necessary to open the cones and as soon as freed from the cone they were removed from the drying room, because a temperature of 140 degrees or more, if continued for any length of time, would reduce the vitality of the seed. The work at the seed drying plant was continued until April 1, 1912, and while in operation the plant required night and day shifts. The seed thus extracted is now being used to reforest desolate and barren areas of the government land which are valuable only for the support of forests. The reforestation is done in general by two methods, either "direct seeding," or that of "planting." Direct seeding is cheaper than the planting method and with Douglas Fir produces good results. The seed is sown either in the fall or early spring, and sometimes in the winter where the snow conditions will permit. When sown on the snow the seed are attractive to birds and consequently this method is only used to advantage upon soft or melting snow where the seed may quickly settle below the surface and seem to disappear. The seed is occasionally sown in seed spots by which method the ground is prepared in spots and the seed is sown and covered, much as in the seeding of corn.

This practice economizes on the amount of seed per acre, but the results show that for the direct seeding of Douglas Fir the method of distributing the seed broadcast is preferable.

"Planting" infers the setting out of stock which has been developed in the tree nursery. Naturally it is more expensive than the method of "direct seeding," because of the added cost of germinating the seed in the nursery and the subsequent transplanting. Nursery stock is about ready to be planted when three years old, although some two-year-old seedlings are planted to advantage. The "planting" method gives more certain results than that of "direct seeding." The federal government is at present carrying on extensive planting operations in Oregon. It is expected that the planting of 1000 acres will be completed this spring on the Siuslaw National forest. On the Oregon National forest a large area in Tp. 3 S., R. 6 E., has recently been planted. The area has been burned over several times, the latest burn being two years ago. From 600 to 700 seedlings were planted per acre and the total cost averaged \$5 to \$6 per acre.

However, the government work of reforestation is by no means restricted to the Coast states. During the fall of 1911 there was collected at Fraser, Col., on the Arapaho National Forest, 2833 bushels of lodge pole pine cones at an average cost of 40 cents per bushel delivered at the mill. These cones were treated in the mill in much the same manner as those of Douglas Fir were treated in the plant at Wyeth, Oregon. However, the plant at Fraser, Col., is small and suited only to the local demands of an individual forest rather than large and on an extensive scale. At this small plant 2439 bushels of clean seed were extracted. Each bushel of cones averaged 3.32 pounds of seed. The cones were found to average 29.4 individual seeds. The cost per pound of clean seed totaled \$1.99. This figure includes labor, collecting, freight, equipment and supplies. The seed is being used to reforest certain areas of the Arapaho National Forest.

The officers on the forest expect to collect as much as 8000 bushels of cones during the fall of 1912, and they predict that during a favorable season a maximum of not to exceed 5000 bushels can be reached. They also predict that the cost can be reduced from \$1.99 to \$1.75 per pound.

Halsey, Neb., is also a center for activities in reforestation. The problem here is not one of re-establishing growth upon desolate and barren mountain burns, but is rather to reforest the non-productive sand hills of the state. Yellow pine is the tree best adapted to such conditions and it

is used extensively. The planting season this year opened at Halsey, Neb., two weeks later than usual, due to the hard winter which preceded. During the month of April 150 acres were planted in the sand hills and one million seedlings were transplanted at the nursery. In connection with this work certain interesting experiments were carried on. A forest officer with crews of from three to seven men installed silvical plots in the hills, using various species, and ages of stock which had been subjected to certain treatments in the nurseries, such as shading, watering, acid treatment to prevent blight, or different species were tried on different sites. The greatest care was taken with each plot, the trees being spaced exactly 4 feet by 4 feet, 2 feet by 2 feet, etc., and planted by the cone method. This is a German method; a hole is dug one foot square and one foot deep, a mound of earth shaped like a cone is formed at the bottom of the hole, and the roots of the plant are then carefully arranged over this mound so that they occupy their natural position in the ground. Then the ground is packed very firmly around the roots. A planter can plant only about 200 trees per day by this method, so that it is not used in all silvical experiments. Also transplanting and seed sowing is experimented with under different silvical conditions.

The movement toward reforestation is universal. The several states which have efficient boards of forestry are planting up denuded and exploited state lands, and the large tree seed and nursery companies are each year making extensive collections of fresh seed with which to supply their customers.

The following is a table showing the average quantity of seed per bushel of cones of the most important Western species:

Douglas Fir, 1.25 pounds; Western Yellow Pine, 1.50; Engleman Spruce, .80; Sugar Pine, 1.60; Western Birch, .50; Sitka Spruce, 1.25; Western White Pine, 1.00; Western Red Cedar, .75; Lodgepole Pine, .25.

The collecting season for the seeds of the above species comes at a time when such industries as hop picking and harvesting call most men into the fields, but when the market is good the man who turns his attention toward collecting Douglas Fir cones will earn high wages.

A certain co-operative company in Iowa is typical of many similar cases. Besides buying 400,000 bushels of grain, this organization has in a year sold to the farmers 100,000 pounds of oil meal, 40,000 pounds of barbed wire and nails, 44,000 pounds binder twine, 2500 tons coal, 2400 sacks flour, 1500 sacks salt, 400,000 feet lumber and 1000 grain sacks, besides handling \$17,000 worth of clothing, shoes and miscellaneous merchandise. Yet in this town also competitive dealers in all these commodities are still doing business and unquestionably are making a reasonable profit.—Farm and Home.

FASHION HINTS



If its on your mind to have a pannier gown, here is one that is very attractive. It may be developed in almost any light weight material.

WIGWAM HAS PASSED AWAY

Indians in Canada Now Make Use of Canvas Tents and Iron Stoves.

A novelist would find a veritable mine of data for stories of the severe life in the woods among any of the northern Indian tribes. During my stay among the Montagnais at Lake St. John two families descended from their winter hunting grounds to the post, being forced on the way to boil their moccasins and peltries for soup to avoid starvation. Yet these same people were strong enough to travel and attend to the necessities of their camp. Within five days they returned again to the forest.

The canvas tents, which have entirely replaced the native birch bark wigwams, came into general use about twenty-five years ago. The first Indians to introduce them set up their tents and made camp in the space of an hour without having to cut the numerous wigwam poles or dig away the snow underneath, while the old bark lodge required the snow to be

cleared to the ground on account of the fire in the center, the whole task consuming about two and one-half hours. The box iron stoves heat the tents very well and consume less wood than the open fires.—Southern Workman.

Retribution.

J. Henry Peck emerged from the voting booth with a triumphant smile. "This equal rights stunt is a great business," he remarked to a friend. Then, glancing around carefully and drawing nearer, he whispered: "I voted against my wife."

Sisterly.

Nell—Here is the engagement ring George gave me. Lovely, isn't it? I wonder what it's worth?

May—I know just what it's worth, dear. When George gave it to me I went down and asked the price. It's \$47 on installments of a dollar a week!

All Has Root in Wisdom.

Our highest hopes are often destroyed to prepare us for better things.—William George Jordan.