

# FIGHTING A FOREST FIRE



MAKING A TRENCH FROM WHICH TO FIGHT FOREST FIRE



BURNING THE "SLASH" TO PREVENT FIRES



SWEEP BY FOREST FIRE



SOIL SOWN FIRE PROTECTED FROM FIRE



HOW THE REFORESTATION IS DONE IN BURNED DISTRICTS

**F**OREST fires! There is something awe-inspiring and terrible in the very thought of them. You may never have traveled hours, on a railway train, through the choking smoke. You may never have seen the light of a blazing forest. Yet, though you have not come as near as this to a forest fire, the words carry a feeling of danger and of tremendous might for evil.

It is hard for the average layman to realize how fires can assume such magnitude in territory supposed to be under supervision of men appointed for the particular purpose of preventing fires, but the fact is quite readily comprehended by those who have had occasion to travel through some of the remote and inaccessible regions within the national forests. As a matter of fact, the lands withdrawn as national forests are almost entirely of a rugged, mountainous nature. Necessarily, there are large and comparatively open portions included, particularly in the range country, but instances point to the fact that the sections subject to the most severe fires are invariably those of the most rugged and inaccessible nature, made up of high, steep mountains, covered with a dense forest and heavy underbrush. Many places are in their present condition, practically impenetrable; and while they are being opened up as rapidly as funds will permit of trails being built, yet there is so much area, so many other duties are required of the forest officers and the funds mentioned are so limited and inadequate, that progress of such work, while keeping pace with the available resources, is necessarily slow.

Before enlarging upon conditions under which large fires begin, it might be well to mention briefly a few of the forest fire terms with which the layman frequently meets and may not understand.

Forest fires are classified generally as crown or top fires—those where the fire travels through the tops of the trees with surprising rapidity and working disastrous results; and ground or surface fires, where the fire travels along the ground, consuming soil covers or humus, brush and litter, seedlings and often small trees, and, consequently, doing little or no damage to mature timber. Luckily, in most cases forest fires are ground fires and it is these that are the most quickly controlled. Yet a single top fire can cause vastly more damage than a great number of ground fires. However, it is generally under unusual conditions that crown or top fires occur—such as high winds, very bushy or steep country and severe drought, when such conditions can in an incredibly short time change a creeping ground fire into a sweeping crown fire, leaving a path of ruin and often death in its wake. In brief, drought and wind are the two dominant conditions favorable to severe fires. The wind is always the most dreaded factor during the fire season, its freakishness and uncertainty upsetting the best of plans. So fierce was the wind at the time of the destructive fires of 1910 that whole hillsides of timber were uprooted and men were forced out of their saddles. The fire leaped across rivers half a mile wide at a single bound, traveling nearly a mile a minute at times and devouring everything in its path. Often wide canyons were spanned as by a great jump, the fire continuing on the opposite side and leaving the canyon timber green and unharmed. Numerous instances of the absolute freakishness of the fire could be cited, and all tend to show its very uncertainty.

In fighting a fire there is constructed around the burning area what is called a fire line or trench. This consists of clearing away all debris and brush, generally for three or four feet, though wider when conditions allow or warrant it, and exposing the mineral soil for one or two feet or wider as necessary. An ordinary ground fire, unfanned by a strong wind, will die out on reaching the strip of mineral soil, often as effectively as if the line were a stream of water. When the fire is moving slowly and men can stand the heat and smoke, it is always desirable to build the trench close to the fire so as to prevent its gaining momentum as it progresses; but where the fire is traveling quite rapidly, often the fire line has to be placed some distance away from the fire, and where adequate patrol or supervision is assured the burned material on the inside of the line is fired in order to meet the advancing fire and destroy the inflammable material in its path. Backfiring, as this is called, is generally used only in an emergency and by experienced hands. Often, of course, where the fire is severe, strips of timber

for variable distances are cleared, but in the ordinary ground fire such work is usually too slow and unnecessary.

The best tools used by a fire-fighting crew in the mountains are axes, shovels and mattocks or grub hoes, the hoes being usually in greatest proportion and most effective. Often one or two crosscut saws are useful, particularly where the fire is traveling through a lot of down timber. The axmen generally go first, clearing out and cutting away the heavy stuff along the line; then follow the grub hoe or mattock men, breaking through the heavy sod and roots; and last the shovel men, who clean out the trail, or, as might be stated, put the finishing touches on the work of the others. The amount of work a gang of men can do depends upon various circumstances, such as the nature of the country, tools available, etc., but roughly it might be said that a gang of twenty men can build a mile of line a day.

Aside from a few general principles there are no set rules for fighting forest fires—in fact, it is far from a black-and-white proposition. Rather, it calls into play initiative and headwork, and the result attained bears mute evidence of the success or failure of the supervising officer, although always it must be remembered that that uncertain and uncontrollable factor, the wind, can snatch victory from the hands of man so quickly and easily as to make it seem sometimes a veritable mockery of his efforts. And, too, the unbelievable action of fire, even when apparently under control, makes it absolutely necessary that it be watched closely and continuously until there is not a single remaining vestige of its existence.

Among the principal causes of forest fires are locomotive sparks, lightning, camp fires left unattended, burning of slash in clearing land, logging operations—principally from fire in the resultant slash accumulated by the average logger in cutting over an area. There are minor other ways, such as incendiary fires, a pipe, a lighted cigar or cigarette stub or lighted match cast thoughtlessly aside. The first three mentioned, however, are the most general.

When a fire has once assumed the proportions of a large top fire, it is generally inadvisable to attempt to check it; rather, it is good judgment to consider the safety of the fire fighters themselves, so that they may be in readiness to attack the fire when it again leaves the tops of the trees and assumes its slower progress along the ground.

It might be mentioned right here that forest fires, with particular reference to ground fires, do not always destroy standing timber, but often only the very small trees, brush and surface cover or humus. Potential timber, of course, has a distinct value, and the destruction of a good soil cover is a decided detriment to the forest, but many trees, such as Douglas fir, tamarack and yellow pine, have a thick, heavy bark which forms a good resistance to fire and will often withstand periodic ground fires for years. Other trees with thin bark, of course, succumb quite readily.

In the report of the secretary of agriculture, embodied in the Yearbook of the department of agriculture for 1911, he states that "the fires of the calendar year 1910 covered more than 3,000,

000 acres of government timberland and 800,000 acres of private timberland within the national forest boundaries, and inflicted damage to national forest timber, including young growth, estimated at a little less than \$25,000,000. The loss in timber destroyed or damaged was slightly over 6,500,000,000 feet. . . . In fighting the fires, special expenditures were incurred totaling over \$1,000,000, besides the cost in time of the regular protective force." In addition to this, there was an added toll of 74 human lives lost in fighting the fires and a large number injured, to say nothing of many ranchers, settlers, prospectors, etc., who perished. Altogether, it certainly puts the fire season of 1910 down as one of the country's great catastrophes, to be listed with the great Hinkley fire in Minnesota in 1894, which did such devastation.

One watches quite breathlessly a serious conflagration in a city and admires the fearless and systematic work of the firemen fighting to subdue the flames. Here they are but minutes away from the source of the fire, with speedy conveyances for reaching it and every possible assistance of human ingenuity to control the fire.

Compare this with the many obstacles with which the forest fire-fighter has to contend. Sometimes he is more than a day's journey from the fire. He has a limited and often inexperienced crew to help him. He must travel on foot or on horseback, and he cannot hope along as they do in the city parks—mountain trails are not made for loping horses. He must rely on packhorses for conveying commissary supplies, because it may mean many days of hard work ahead of him on the burning area. Very often, indeed, he must blaze his way a number of miles through a trailless wilderness, carrying his bed and grub on his back, and through a country where every step seems a greater impediment to rapid progress; and when he reaches the fire it may be of such proportions as to appall a less sturdy nature.

The rapidity with which fire can spread in the mountains is almost unbelievable. For instance, in 1910, by the middle of August over 3,000 small fires had been put out by patrolmen and over 90 large ones had been brought under control by crews of from 25 to 150 men. And yet, when the cyclone of August 20 came, that work was all undone so quickly as to make one gasp with wonder and awe. Within 48 hours a strip of country more than 100 miles long and more than 25 miles wide had been burned over. And still the fire was advancing. Against all this an army of more than 3,000 men fought persistently and courageously and always in the face of overwhelming odds, yet never did they falter until the rains came.

In passing, it is but fitting to give credit to the brave men in the government's employ, who risked and lost their lives in earnest endeavors to carry out their duties, and many are the tales of heroism and unselfish devotion during those strenuous times, when men toiled and sweated shoulder to shoulder.

Men can and will, in the course of time, make effort to reforest the great devastated areas, but the scope of years to carry out such work is broad indeed. Man's best work, now and for always, lies in the prevention of a recurrence of such calamities as have gone before. Through legislation man can compel the railroads to use contrivances to prevent sparks from leaving the engines; he can educate campers into the necessity for their co-operation in extinguishing camp fires (a truly little thing, yet big in results) and exact a severe penalty for failure to abide by the law; he can appropriate more money for improvement and protection work, to place the forests under closer supervision and make them more accessible, so that the fires caused by lightning, for instance, can be caught at their very inception; but mostly, he must enlist the co-operation of all his fellowmen to help in the great work of preserving and perpetuating the forests because they represent a source of wealth and necessity and beauty, not to any single individual, but one in which every member of our great country is, and always will be, directly or indirectly, a participant, even unto our children's children, ad infinitum.

## INTERNATIONAL SUNDAY SCHOOL LESSON

(By E. O. SELLERS, Director of Evening Department, The Moody Bible Institute, Chicago.)

### LESSON FOR NOVEMBER 16

#### THE DEATH OF MOSES.

LESSON TEXT—Deut. 34:1-12.  
GOLDEN TEXT—"Precious in the sight of Jehovah is the death of his saints." Ps. 116:15.

I. The Old Leader, vv. 1-8. We have now come to the last of our lessons which have to do with Moses. Following his lamented failure at the time of the second arrival at Kadesh-Barnea, Miriam dies; at Mt. Hor, Aaron departed and his office is bestowed upon his son, Eleazar. Then quickly followed the plague of serpents, the defeat of the Amorites, Balaam's folly, the apostasy of Israel which was cleansed by blood through the zeal of Phinehas, and finally the arrival upon the plains of Moab.

**Law Confirmed.**  
Here Moses repeats and confirms the law to this new generation of Israel, delivers his last charge, sings his last song, ascends Mt. Nebo to view Canaan, and is "forever with the Lord." In the passage marked out for this lesson we have the account of the passing of this wonderful servant of God. Returning to ch. 31:1-8 and 32:44-52 we see this journey in prospect, after that we read Moses' parting blessing and in this section we read of the fulfillment of that prospect. Moses anticipated his departure by a quiet dignity, absolutely divorced from haste or fret, that was characteristic of his life of submission and was the essence of his life of faith.

Before departure Moses solemnly charged this newer generation to observe the law, declaring that it is not a vain nor an empty thing, but in deed and in truth to them the way of life. Then comes the simple dignified account of this last act of obedience, simple, yet sublime. Yonder we see him, viewed by the hosts of Israel, as he ascends the mountain alone—yet not alone—prepared to spend his last hours upon earth with Jehovah, who doubtless appeared as the angel—Jehovah and pointed out to him the land he so much longed to enter, but could not because he failed to sanctify God in the sight of the people at a critical moment. Taking the glory to himself on that occasion demanded an act of punishment as a warning to the people, hence, "it went ill with Moses for their sakes," Ps. 106:32. There upon the mount God's covenant with Abraham is confirmed and with undimmed eye and undiminished vigor (v. 7), Moses was shown the fulfillment of that promise, his body was laid at rest by God himself, in an unknown and unmarked sepulchre, "over against Beth-Peor," v. 6.

II. The New Leader, v. 9. God never leaves his people without a leader and hence Joshua is exalted to compensate Israel for the loss of Moses. "The king is dead—long live the king." The worker dies, the work goes on and many times the victories of the new leader are fully as great and far reaching as any won by the former leader. Joshua was not Moses, he was Joshua and as such called to face new problems.

III. A Great Character, vv. 10-12. The description of Moses is of one who saw Jehovah face to face, a peculiar dignity, and the secret of his greatness. When Aaron and Miriam murmured God declared that Moses was different from all other prophets in that, "with him will I speak mouth to mouth, even manifestly, and not in dark speeches, and the form of Jehovah shall he behold," Num. 12:6-8. Moses himself declared to Israel that when God spoke to them out of the midst of the fire, "I stood between the Lord and you," Deut. 5:4, 5. The supreme teaching of this lesson is the fact that great as Moses was, he was nevertheless excluded from the promised land as a warning to Israel.

On the other hand this story is a wonderful illustration of the tender compassion and watchful care of Jehovah even to the end. Even the discipline of Jehovah is accompanied by gentleness. If he must needs be excluded yet he is not excluded from communion with Jehovah.

Thus this saint who was separated to the will of God passes out of life. In the hour of the consummation of his life work his spirit passes into yet closer fellowship with God. The Psalmist in the words of the golden text most beautifully suggests that such an hour is a delight to God, and suggests the welcome which must be awaiting his saints. Do not forget the last glorious appearing of Moses after the lapse of the centuries when:

"On the hills he never trod Spoke of the strife that won our life With the incarnate Son of God."

"Death and judgment were a constant source of fear to me until I realized that neither shall have any hold on the child of God." D. L. Moody: Do not put death out of consideration, but welcome it as Moses welcomed it. When we stand on Pisgah, can we say we did our full duty? In that hour the plaudits of men will be stilled.

Moses was a great hero, prophet, priest, law-giver, poet and general, yet Israel could erect no monument over his grave to do him honor. It was a greater honor to follow his admonitions and obey the law.

## IS CHILD CROSS, FEVERISH, SICK

Look, Mother! If tongue is coated, give "California Syrup of Figs."

Children love this "fruit laxative," and nothing else cleanses the tender stomach, liver and bowels so nicely.

A child simply will not stop playing to empty the bowels, and the result is they become tightly clogged with waste, liver gets sluggish, stomach sour, then your little one becomes cross, half-sick, feverish, don't eat, sleep or act naturally, breath is bad, system full of cold, has sore throat, stomach-ache or diarrhoea. Listen, Mother! See if tongue is coated, then give a teaspoonful of "California Syrup of Figs," and in a few hours all the constipated waste, sour bile and undigested food passes out of the system, and you have a well child again.

Millions of mothers give "California Syrup of Figs" because it is perfectly harmless; children love it, and it never fails to act on the stomach, liver and bowels.

Ask at the store for a 50-cent bottle of "California Syrup of Figs," which has full directions for babies, children of all ages and for grown-ups plainly printed on the bottle. Adv.

Every guest who cannot play always tries the hotel piano

The most effective, yet simplest remedy for coughs is Dean's Mentholated Cough Drops—get at Drug Stores.

The Condition.  
"Do you like a good send-off?"  
"Yes, if there's no come-back."

WHEN RUBBERS BECOME NECESSARY  
And your shoes pinch, Allen's Foot-Paste, the Antiseptic powder to be shaken into the shoes, is just the thing to use. Always use it for breaking in new shoes. Sold everywhere, 25c. Sample Free. Address, A. S. C. Co., Omaha, Neb. Don't accept any substitute. Adv.

Some Soufflé.  
"The girls say he is very 'oufflé'."  
"He is. That fellow can talk romantically about the tariff."

During the Spat.  
"John, there's just one thing I want to say to you."  
"What's the matter, M'ria? Aren't you feeling well?"—Puck.

Figuring It Out.  
"How many people do you suppose Boston wants to put into her Hall of Fame?"  
"I can't tell you till I take a look and learn what her population is."

Overheard.  
"That is a great title for a play," said the head usher.  
"Yes," replied the ticket taker; "it's a shame to see how many good titles are spoiled by the plays."—Washington Star.

Survival of the Fittest.  
Employer—Yes, I advertised for a strong boy. Do you think you can fill the bill?

Applicant—Well, I just finished lickin' fourteen other fellers that were waitin' out in de hall.—Boston Evening Transcript.

Maid Had Helped.  
Young Van Windle waited nervously in the parlor for Julia to appear. He had been sitting there, twiddling his thumbs, for half an hour. Finally a step was heard in the hall and he rose to his feet expectantly.  
But it was not Julia. It was her maid.  
"Marie," said the impatient young man, "what keeps your mistress so long? Is she making up her mind whether she'll see me or not?"  
"No, sir," answered the maid with a wise smirk. "It isn't her mind she's making up."

### Toasted to a Golden Brown!

Sounds "smacking good," doesn't it?

That's

## Post Toasties

Tender thin bits of the best parts of Indian Corn, perfectly cooked at the factory, and ready to eat direct from the package—fresh, crisp and clean.

There's a delicate sweetness about "Toasties" that make them the favorite flaked cereal at thousands of breakfast tables daily.

Post Toasties with cream and a sprinkling of sugar—

Delicious

Wholesome

Easy to serve

Sold by Grocers everywhere