CONSERVATION

Modern Science Helps To Combat Forest Fire Menace

Airplane and Radio Contribute in Attempt to Spot Blazes and Quench Them Before the Losses Mount

See Front Cover

ABNORMALLY high temperatures and dry periods which have lasted months instead of weeks are responsible for the roaring and crackling forest fires sweeping the Northwest. In no sense has there been any let down in the vitally important efforts of the U. S. Forest Service to decrease the annual $50,000,000 loss from forest fires.

On the contrary new methods of training forest rangers, new techniques in fire fighting in the woods and improved detecting methods are more in use than ever. In a year with normal precipitation and temperatures the fire toll in the forests during 1936 might well be less than ever before. What has happened is that the forest fire "season" of September and October has been moved forward a whole month by the severe drought conditions. Sections normally damp and moist at this time of the year are now timber-dry and have been for weeks. Despite all precautions fires now wage through wide areas and the total loss may well exceed the $60,000,000 damage in the northwestern 1918 holocaust.

Use Airplanes and Radios

The most apparent change in modern forest fire fighting methods lies in the use of the airplane and the radio as detecting and communicating devices. Twelve hundred shortwave radio sets were in use in 1935 in the National Forests alone, as only one example. Aerial photographs are now quickly taken high over the forest fires and speeded to "headquarters" where forest rangers and fire marshals can map their best plan of attack.

As anyone at the firehouse nearest your own home will tell you, the best way to stop fires is to prevent them. And the next best thing is to discover them with all possible speed. The same rule applies to the much larger forest fires with added emphasis. Getting the jump on a forest fire is quite like the swift get-away needed in a 100-yard dash. The first brief interval of time counts most.

Right now throughout Montana and Idaho visibility meters are being installed in lookout stations which tell the forest rangers the distance at which a small smoke should be detected, under the atmospheric conditions existing.

See Fire 10 Miles Away

On good seeing days a fire lookout, with his trained sight, can detect a tiny pinpoint of smoke from an embryo fire at a distance of ten miles. On other days similar smoke only five miles away may escape detection. Low visibility means added fire menace and that extra lookouts should be assigned to the station to spot the fires while they are still small enough to control. The visibility meter gives a quick index of the danger from poor seeing conditions. It will be a mechanical means of getting the jump on an incipient fire.

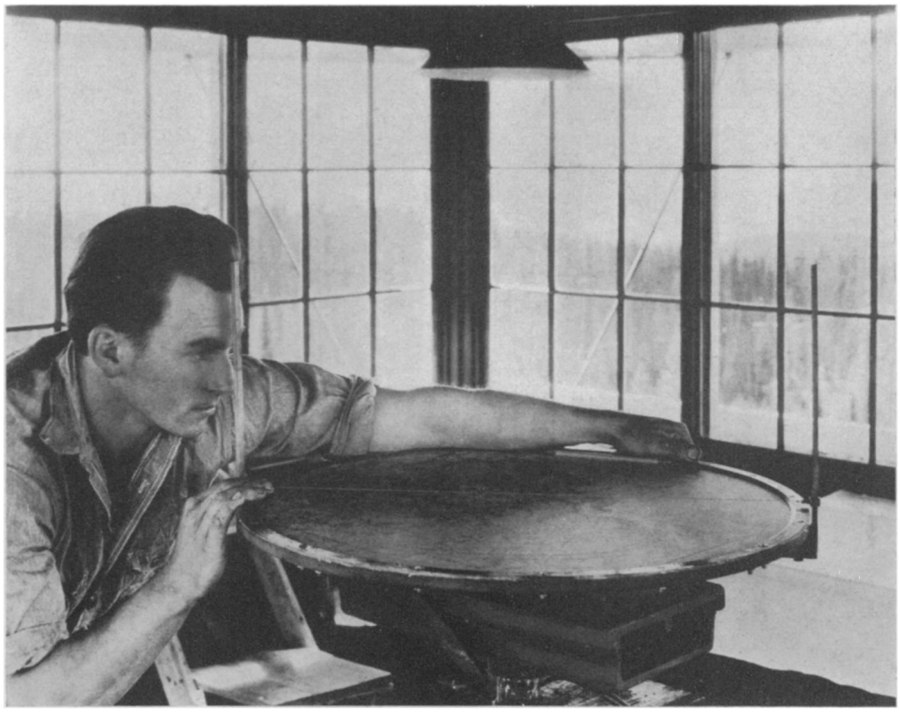
Aid from the airplane in fighting the menace of forest fires is progressing beyond mere detection alone. Roy Headley, chief of the Division of Fire Control of the Department of Agriculture, has announced that a new program of fire combat from the air is being tested on an experimental basis. The hope is that by dropping water or chemicals directly on small fires their spread will be retarded until the ground crews can reach them.

Fire retardent chemicals and even small explosive bombs are also on the program. By carefully aiming and "planting" bombs around a small fire, it might be possible partially to smother it with dirt or even throw up a narrow trench of earth which, for a time, would stop the spread of the flames. The method again illustrates the need for quick action to prevent the forest fire "infant" from becoming a gigantic uncontrollable demon.

The present use of the airplane to transport supplies and equipment quickly has already demonstrated its success. In some cases the planes merely fly over the working parties on the ground and drop the supplies in specially wrapped packages.

Special Eyesight Tests

Training fire lookouts is a special task in itself wherein unusual types of eyesight testing are now employed. Particularly desired is the man whose eyes



SPOTTING THE BLAZE

The lookout in a National Forest station is sighting at a new blaze with the alidade, an instrument which enables him to locate it accurately.

OFF TO THE BATTLE

Pack on his back, a smokechaser leaves a two-man lookout station in Idaho. The photographs here, on the facing page and on the front cover are official photographs of the U. S. Forest Service.

can spot a tiny fleck of gray on a background of green or reddish brown. Smoke and the summer and autumn foliage of the forests are the three shades, of course.

The success of the government's forest fire protection in past years is best told by figures showing acres burned.

In 1935 there were about 10,000 forest fires started in the National Forests from one cause or another. That figure is high compared with the 8,000 a year average for years from 1931 to 1934. But note this fact: in 1935 only 178,133 acres of national forests were burned over, compared with 440,802 acres average for the four preceding years.

Even more significant is the fact that in 1935 there were only 156 "extra-period" fires compared with an average of 270 yearly from 1931 to 1934. An "extra-period" fire, it might be explained, is one which is still out of control after 10 a. m. of the day following its discovery.

Cause of Fires

How do forest fires start? Man, mainly, is responsible either through carelessness with campfires, matches and pipes and cigarettes or in some cases by deliberate arson. Lightning is the next largest cause.

The Forest Service is at the point today where it is only the so-called "freak" fire that outwits the fire-fighters. Out of the thousands of forest fires each year only about a score cause real trouble.

It now takes a combination of extra-dry weather over a sizable period of time, a rugged inaccessible terrain and conditions favorable for exceptionally rapid spreading to bring about a "freak."

Forest fire protection costs money, it is true, but the significant fact is that about 90 per cent of all the nation's forest fire losses now occur on lands without organized protection.

Science News Letter, August 29, 1936

MEDICINE

Truants From Medicine Found Fame Elsewhere

THE GIFTS of medicine to humanity —conquests of diseases, relief of suffering and prolongation of life— have never been minimized. Yet from early times there have been medical men who, turning aside from their profession, have made outstanding contributions in other than medical fields.

A roster of these medical "truants" was called by Lord Moynihan of Leeds in the latest Linacre Lecture at Cambridge University, given in memory of one of the earliest and most distinguished of the truants from medicine. In this lecture, now available in book form (Truants; Cambridge University Press), Lord Moynihan refers to some hundred men, trained as physicians, who won distinction as writers, artists, scientists, statesmen, explorers, actors and even athletes.

Among the latter Lord Moynihan lists the great cricketer, W. G. Grace; Lennard Stokes, outstanding Rugby player; and the lawn tennis player, Joshua Pim, who won four championships.

Most persons will recall that Clemenceau deserted medical practice for politics; that Keats and Goldsmith studied medicine; that Oliver Wendell Holmes carried on simultaneously in medicine and literature, winning fame not only as the author of the Breakfast Table series but also as the first person to point out that puerperal or childbed fever is contagious.

The name of Sir Francis Seymour Haden is well known in the art world but perhaps less well known is the fact that this eminent etcher carried on a large and important medical practice, often making professional rounds with an etching plate in his pocket.

"Sherlock Holmes" owed his methods of solving a mystery to the fact that his creator, Conan Doyle, studied medicine under Joseph Bell, a Scottish surgeon who impressed on all his pupils the "endless significance of trifles and of small distinctions."

John Bull

The name of John Arbuthnot, physician and wit of the early 18th century, may not be familiar to many 20th century readers, but who does not know John Bull? This famous character and name was probably created when Arbuthnot published *Law in a Bottomless Pit, or the History of John Bull,* Lord Moynihan states.

A physician of the 16th century, William Gilbert, gave the word electricity to the English language, while important additions to knowledge of electricity were made by an Italian physician, Galvani. Copernicus, the founder of modern astronomy, Linnaeus, father of modern scientific botany, Galileo, Robert Boyle—all held medical degrees and are ranked with the other "truants" by Lord Moynihan.

Honor of being the first truant goes to Imhotep, the Egyptian physician of nearly six thousand years ago, who combined with his duties of physician those of being the Pharaoh's chief Lector, Priest, Architect, and Grand Vizier.

Science News Letter, August 29, 1936