

Forest Insect Investigations

The relation of Forest Entomology to the actual management of the Forests is becoming more apparent as the scope and seriousness of insect depredations increases its interference with long term forest products programs.

In recent years the inroads into our available supply of timber made by the Spruce Budworm, European Spruce Sawfly and The Bronze Birch Borer have resulted in frantic appeals by timber and pulp producers to the Science Service for solutions to these problems. Field workers of the Science Service have foreseen many of these problems and certain cases advised industry about them but, the usual immobility of the public to heed a timely warning has been evident by the deaf ears turned to these crusaders. It has been only after the damage has become widespread and permanent that the shocked operators have come to our men looking for quick miracles and in this business there are none.

Problems arising from insect threats to our forest or parts of forests almost invariably call for years of research. This type of long term studies, often involving investigation does not lend itself to sudden demand for solution, but, does indicate the necessity of sustained investigative work. Presently the forest products industry is just beginning to realize the inadequacy of the meager organization that the Federal Government has set up to carry on this vast work. With this realization there arises a demand for increased activity but, funds and personnel are at too high a premium for immediate expansion. Return to the normal should remedy this situation.

Too often the Forest Engineer listens with tongue in cheek to the methods and talk of the Forest Entomologist but solid examples of needlessly wasted tracts of previously merchantable timber has made many a doubting engineer an ardent supporter. Sometimes even

Courses of study in Forest Engineering	
First Year	Mathematics, English, Chemistry, Physics, Drawing, one of (French, Spanish, German), Forestry Camp.
Second Year	Mathematics, Botany, Surveying, Railroad Curves, Organic Chemistry, Forest Mensuration, Forest Mathematics, Engineering Camp.
Third Year	Mathematics, Economics, Geology, R. R. Drawing, Mechanics, Forest Mensuration, Silviculture, Dendrology, Forestry Camp.
Fourth Year	Meteorology, Forest Utilization, Topographic Surveying, Wood Technology, Forest Protection, Forest Management, Accounting, Reports.
Forest Entomology	
First Year	Same as for Forest Engineering.
Second Year	Mathematics, Botany, Zoology, Surveying, Organic Chemistry, Forest Mensuration, Forest Mathematics, Engineering Camp.
Third Year	Economics, Geology, Forest Mensuration, Dendrology, Silviculture, Entomology, Plant Anatomy, Systematic Botany, Forestry Camp.
Fourth Year	Meteorology, Forest Utilization, Plant Pathology, Forest Management, Wood Technology, Forest Entomology, Forest Protection, Accounting, Thesis and Reports.

as simple an answer as selective cutting has proven to be the difference between utilized timber and total loss. Simple as it sounds, there were years of investigation behind the answer. The Forest Entomologist must be sure of his ground before prescribing any treatment. Natural, then, is the tendency for operators to seek the advice of the forest entomologist when an area is considered for cutting. With increased insect threats and decreased forest supply the forest entomologist may well be the first technical man consulted in operation planning in the near future. J. F. F. '45

REUNION

A decrepit helicopter of vintage 1971 hit the deck of the Todd mountain lookout station and skidded to a stop. Out of the body of the old bird tumbled a hulk of a man bundled up to the whiskers in spite of the balmy air of an August morning. He was growling to himself and as he walked toward the hotel a string of unmusical oaths vent the air. It sounded a bit like "the blankety blank government service and its blankety blank worn out equipment." The monologue was brought up short by a nail from the roadside below. "Hiya Pole cat". It was the high pitched squeaky voice of "Doc" Forbes who reclined



peacefully on the right antler of his 'ding bush-master. The shoo-fly cut in. Doc barked in the centre of a 20-ft. safety zone. Outside the flies kept up a futile buzzing in their attempt to break through to the shiny bald pate which mocked them. Polecat didn't need any shoo-fly. MacKay, the District protection chief, broke into another trade of oaths. This time they were beamed at the recumbent "Doc". "You insectivorous son of a --- you're out here, I'll bet to start more bug trouble just where we have things snugged up. Why the bloody * * * ? ! ! don't you stay in that crazy house you call a lab, and leave the bush work to us? Say—how did you know I was heading in to Todd mountain"? "That's easy, Mac. I whiffed away the time on my way over from Maple Grove by rubbering on the tele. grapevine. The boys keep a close check on your geographical position. Mac and it's in code. Come down off your perch and we'll swap stories over a bit of lunch. Mrs. Forbes put up some of your favorite rough-lock sandwiches on the off chance that we would meet. Too bad you still have to rustle your own grub Mac."

MacKay disappeared into the cabin still mumbling. He threw his big carcass into the cable seat and with a "hello" to the tower man set out and tripped the counter weight and slid to the ground. The two men shook hands. "Roach in the cold box Mac and bring out those two units of spruce beer. It is after my latest formula" said the Doc as he peeled the esloptane from the sandwiches. "I parked the jalopy at cabin 8 on the S.W. primary and picked up the Warden's amphibian. Driving in the tower road to meet you. Intend to push over to Hovey brook this afternoon. Never saw the traffic so heavy for this time of year. Met 5 Banst trucks with mixed veneer stock and passed their wood waste concentrator working in last year cutover. Tom and Bill are making a nice profit out of that machine. The bush is full of fishermen and there are hikers and tourists around every bend. Mac, times sure have changed since we went to school in Fredericton."

Mac had jimmied the cap from a bottle of spruce beer and was letting the cool stream trickle down his gullet. His reply was conservative. "Sometimes I think we are getting ahead Doc. We have the live bug ticked and with your help we have made a fight of it with the insects. And the people are working with us most of the time. We know a lot more about the bush now. This year we took our fourth periodic inventory of forest conditions in N.B. covering 30 years of continuous use. We have the good will of the Agricultural authority. The picture is becoming clear. We have come a long way in getting industries to cut the right wood at the right time and now our forest is more in balance with our requirements. Our efficiency in putting wood to work

(Continued on page seven)

POST WAR FORESTRY

Many plans are being made these days for work that must be done particularly in New Brunswick, when the war ends. In Canada, forests and forestry have an important place in these plans. Our forests provide the ideal opportunity for useful work during the period of adjustment from war to peace-time living. If wisely planned, this work will soon pay for itself in increased production and a better way of life.



To say that there are many opportunities for improvement is not to reflect blame on the methods of the past. Exploitation and waste are natural when markets are limited and there is a large surplus of raw material. But when markets are expanding and supplies are limited, attention is turned to ways and means of using supplies efficiently and increasing production. Fortunately for us, new equipment and new methods are making forest management practical. Modern trucks and road building machinery have solved the transportation problem. Roads can now be built for a small fraction of their former cost. Wood that cannot be stream driver cheaply, can be truck hauled. Men do not have to leave home for long periods to work in the woods.

In the past, most foresters have served their time at timber cruising. This was the only way of taking stock of the forest. A narrow sample strip four or five miles long was examined in a day. Now most of the information that is needed can be obtained with a camera from an aeroplane flying four or five miles a minute. Many new uses for wood have been found. New glues and gluing processes have expanded the field for plywood and laminated wood, shooting chips out of a gun and then a hard finish board can be made by pressing the pulp into thin sheets. The chemical use of wood for alcohol, yeast, cerigite, rayon, etc. is

Strangely enough it seems probable that the greatest difficulty will be to find men to plan and supervise the work. The number of foresters employed by companies and governments before the war was small. Many of these are now in the armed services. Both the companies and governments would employ many more foresters than they did before the war if the men were available. If all the foresters in the services come back to their former jobs and the forest schools turn out as many foresters as they can it will still take many years to fill the demand. This means that foresters in the future can pick and choose their jobs and command better salaries.

The New Brunswick Forest Products Association and the New Brunswick Section of the Canadian Forestry Association, recently submitted a brief on Forestry and Reconstruction in New Brunswick to the New Brunswick Committee on Reconstruction. The expansion of the U.N.B. Forest School is strongly recommended. Courses in logging, engineering and construction, utilization, forest economics and cost accounting, are mentioned. These, with the strengthening of the present courses, would allow each student forester optional courses and a chance to follow his own bent. It would be necessary to increase the faculty to take care of larger classes and the wider range of subjects.

Other recommendations include the provision of technical training in forestry, similar to that given at so-called "ranger schools", and the (Continued on page eight)

Forest Protection

By Dr. J. M. Gibson

Forest protection implies the protection of the forest from the agencies that cause damage or loss. The four major causes of forest loss are fire, insects, disease and wind.

It is fundamental that losses from these factors must be reasonably controlled before proper forest management is possible and to bring about this control organized effort has been made in all of the Provinces of Canada. As one of the most obvious causes of damage has been from fire, a substantial part of the organized effort has been directed at first preventing forest fires and second controlling them after they have started.



While fire losses have not yet been brought to an irreducible minimum, considerable progress has been made and you find in every Province in Canada except Prince Edward Island an organization set up to prevent, detect and suppress forest fires.

Being forewarned is forearmed and scientific research in fire danger has made available to Forest Services methods by which fire hazard and fire danger can be satisfactorily measured. Fire danger may also be predicted to a degree that makes this information of real value to organizations charged with forest fire protection.

All forest protection services use modern methods of fire detection and make use of aeroplanes and lookout towers for fire spotting and telephone and radio for speedy communication.

Modern suppression equipment includes hand and motor pumps; trucks, tractors and bulldozers; power driven saws and hand tools, axes, saws, shovels and hoes.

Rapid organization of large crews with housing and feeding under field conditions is an ever recurring problem and must be prepared for.

Time is only on our side in fighting forest fires when suppression crews arrive at the fire while it is still small. This emphasizes the need of accessibility. In many cases to make our forests accessible motor or truck roads must be constructed. All plans for forest work during the reconstruction period emphasize the need of these roads.

In brief, roads will bring fire suppression from the era of the horse and buggy to the motor age.

While not so apparent to the public heavy losses to our forests have resulted from insects and disease.

The spruce budworm epidemic twenty-five years ago caused a loss of over 50,000,000 cords of wood which would equal New Brunswick's average cut of pulpwood for fifty years. At the present time the bronze birch borer is causing heavy mortality to our yellow and white birch.

The Dominion Department of Agriculture through its Division of Forest Insects has in addition to an intensive study of each insect problem maintained an insect survey for eastern Canada.

This survey gives a picture of current insect infestations and provides the information necessary for planning control measures.

The problem of insect control is tremendous and considerable thought is now being given to the possibility of prevention through better forest management.

The same principle may also exist in preventing tree diseases and can also assist materially in reducing losses through windthrow.

Satisfactory forest protection requires that losses from the four causes mentioned be reduced to an insurable risk and this can only be brought about by providing an adequate staff of trained men with the necessary equipment and with the required financial support.

Members of the Faculty,
Alumni and Students
Are all Cordially Invited to make
This Century-Old Institution
Their Banking Home

The Bank of Nova Scotia
Established 1832

right to build his
ss for himself if he
terprise. So it has
ur free way of life.
nation.

ay, as far as your
is brought to this
ed by any people
he march.

OF CANADA