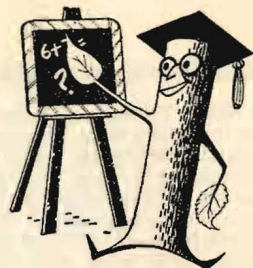


A QUIZ

Don't Let Them Stump You!



1. What percentage of the total land area of Canada is wooded—one-eighth, one-third, three-quarters?
2. How much of the wooded area is Crown land—10%, 50%, 90%?
3. How much of the wooded area is "productive timber" (useful in trade and industry)—one-quarter, two-thirds, three-quarters?
4. Do Canadian forests contain more hardwoods or softwoods?
5. Can you name seven hardwoods?
6. How many sawmills are there in Canada? Is it 500, 4,500, 9,500? How many pulp mills? Is it 100, 500, 1,000?
7. How many people are employed in forest industries in Canada—100,000, 200,000 or 250,000?
8. Has Canada in recent years shipped more lumber to U.S.A. or to Great Britain?
9. Where do you think Canada ranks among nations of the world in production of newsprint—first, third, fifth?
10. How many of the following can be made from wood—rayon, cellophane, phonograph records, alcohol, smokeless gunpowder, yeast cakes, fountain pen barrels?

(Answers to Quiz on page 19.)

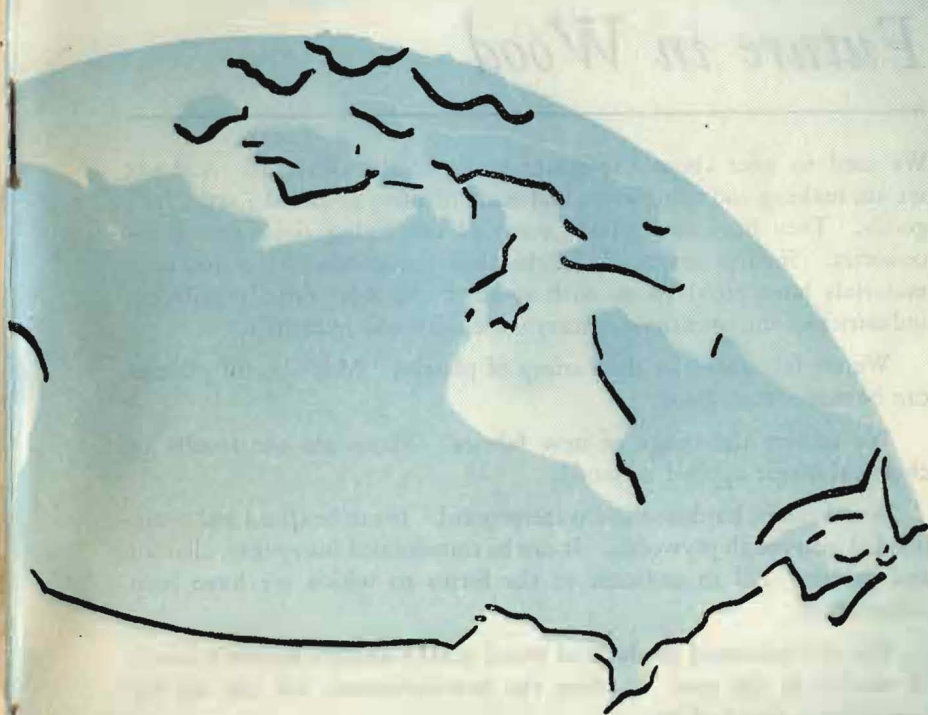
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WEALTH IN WOOD

Article by
KIM BEATTIE and MORTON FREEMAN



CANADIAN AFFAIRS

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Future in Wood

We used to joke about the ersatz goods of the Germans. And yet we are making and using more and more of these so-called "artificial" goods. They have streamlined many of our living and fighting accessories. Such products of the chemical transformation of common materials have provided us with some of the most rapidly growing industries of the twentieth century—the synthetic industries.

We are fascinated by the variety of plastics. Many useful plastics can be made from wood.

We admire the range of new fabrics. Many are the results of chemical magic applied to wood.

Wood can be hardened and waterproofed. It can be sliced and resin-bonded into tough plywoods. It can be transformed into sugar, alcohol and rubber. All in addition to the forms to which we have been accustomed.

The old-fashioned products of wood made Canada's forests a source of wealth in the past. Adding the new-fashioned, we can see big possibilities ahead of us.



All the more reason why we should become forest conscious, both as to the extent of our woodlands and as to modern methods of getting the most out of them for the longest period. Most of us have not been conscious in either way in the past. Time to wake up.

Wealth in Wood



By KIM BEATTIE and MORTON FREEMAN

FORESTS—the word is one of romance and adventure. We remember the fascinating tales of the intrepid *coureurs-de-bois* penetrating the unexplored wilderness, the canoes of the fur-traders cutting the green waters between wooded banks, the Indian making his silent way—where we would break dead branches at every step. It brings memories of trips along cool, green-arched trails; of fragrant pine needles and the drifting smoke of a campfire in the twilight.

More Work Than Romance

But the forest is more than romance and adventure. It is more than a tourist paradise.

In it have labored tens of thousands of strong-muscled, tough-stomached men, cutting and moving the trees for the use of the world.

Today, logs pouring down the fast-flowing rivers of the Canadian northland are going straight to the world's battlefields. Not as they are, of course, but as pulpwood they turn up in shell casings, gas masks, medical kits, blood plasma containers. Turned into cellulose and nitrated into smokeless gunpowder they supply every ounce used by the Canadian and British armies.

In war and peace our forests are a base for great industries—lumber, pulp and paper mills, and a multitude of processing plants.

A Big Green Belt

Forests, in fact, are Canada's biggest heritage. They run in a vast green belt, 600 to 1300 miles wide, from the Atlantic to the Pacific,

Private ownership of these forests is most extensive in the Maritimes. Taking Canada as a whole, the public owns most of the woods, for 90 per cent of the forestland is Crown land. About 174,000 square miles of the Crown lands are leased to lumber, pulp and paper companies and others. Some 102,000 square miles of forest are privately owned (about 45 per cent of this is in the form of farm woodlots).

Category	Percentage
UNALIENATED	66%
LICENCED CROWN LAND	14%
RESERVES AND PARKS	11%
CORPORATION & OTHER PRIVATE FORESTS	5%
FARM WOODLOTS	4%

WEALTH FROM THE WOODS

★ In 1941, a peak year, the net value of forest products was just over a half-billion dollars. They were turned out by forest industries in which \$1,149,000,000 are invested. The heavy investment of capital is in the pulp and paper industry where the average capitalization of each of the 100 or more mills is about \$6,000,000. In contrast, the average capital employed in the more than 4,500 sawmills is \$20,000; but 63 of them are so big they produce about 55 per cent of all the lumber. It is the sawmill and pulp and paper companies which do most of the logging, although there is an independent logging industry on the west coast.

Working in the Woods

Logging involves almost half of the total number of workers engaged in the forest industries. It is this army of men, the majority of whom in Eastern Canada come from the farms in the winter months, which provides the great flow of raw materials—sawlogs for the lumber mills; pulp sticks for the pulp and paper mills; wood for fuel, charcoal, excelsior, distillation and smallwood manufacture.

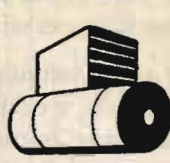
Big Buzz Saw

Stimulated by war needs, the humming saws of our lumber mills cut an all time record of 4,941 million feet board measure of lumber in 1941. The annual average for the ten years, 1931-1940, was 3,161 million. With big shipments of war materials, the use of lumber for boxes and crates has exceeded that for war building since 1940. Most of the lumber produced was spruce and Douglas fir.

Pulp and Paper

The pulp and paper industry, our biggest manufacturing investment, broke all its own records in 1941 and 1942. In the former year it turned out 5.7 million tons of wood pulp, 3.5 million tons of newsprint paper, and one million tons of other papers including paper boards. When it comes to newsprint, we produce more than all other countries combined. About 80 per cent of it goes to the United States. It is such exports which give us purchasing power abroad.

FOREST INDUSTRIES-1941

LOGGING	SAWMILLS	PULP & PAPER	OTHER USERS
			
CAPITAL INVESTED— \$189 MILLION	 \$101 MILLION	 \$679 MILLION	 \$180 MILLION
NUMBER OF EMPLOYEES— 108,000 MAN — YEARS	 45,104	 37,154	57,842
WAGES & SALARIES \$105 MILLION	 \$ 41 MILLION	 \$ 64 MILLION	\$ 65 MILLION
NET VALUE OF PRODUCTION \$170 MILLION	 \$ 77 MILLION	 \$175 MILLION	\$115 MILLION
EXPORTS \$ 2 6 MILLION	 \$ 96 MILLION	 \$262 MILLION	 \$4 MILLION

WORKERS IN WOOD

★ How many of us have cussed in rough bunkhouses and sworn the camp cook made those flapjacks with cement?

The logging trail, or the whining circular saw, or the wet machinery of the pulp and paper mills are familiar to great numbers of Canadian men. In peacetime many hopeful youngsters have started their earnings in a logging or lumber camp.

One of the problems of forest industry in wartime has been the great flow of hardy youth into the armed forces and war industries. Experienced woodworkers are in the fray also. The government had to declare lumbering an essential industry and take steps to check the drift of men away from the woods and mills.

Industry Means Men

We should never forget that our forest industries are men even more than invested capital or cubic feet of standing timber. It takes the skill of many hands to make invested capital productive.

On the farm woodlot, getting out the wood may seem a rather simple business. But in the big logging camps and mills it requires the co-operation of many occupations. In a big sawmill on the Pacific coast today there may be as many as 140 different categories of employees in addition to the managerial, professional and office staff. In a big pulp and paper mill there may be as many as 100 classifications of work; and in a big logging camp as many or more.

Men Form Unions

In these industries the employers have long had their trade associations. The employees have been trying to form theirs—the trade unions. Among unions operating in the forest industries are: the International Brotherhood of Pulp, Sulphite and Paper Mill Workers; International Woodworkers of America; affiliates of the United Brotherhood of Carpenters and Joiners of America; National Catholic Union of Woodworkers; and National Catholic Federation of Pulp and Paper Employees, Inc. One-third of the B.C. loggers and sawmill workers were under full collective bargaining agreements at the end of 1943.

WAGES, HOURS & WORKING CONDITIONS 1943-1944

INDUSTRY	WAGES	HOURS	DAYS PER YEAR	WORKING CONDITIONS
LOGGING B.C.	\$5 TO \$7 A DAY \$1 TO \$1.35 BOARD EXTRA A DAY	10	300	Workmen's Compensation; 90 per cent belong to some union; 35 per cent work under union contracts; mechanized operations require greater skill than in Eastern Canada; 11,640 employed, April 1, 1944.
LOGGING REST OF CANADA	\$60. TO \$75. & BOARD	10	100	Piecework pays 25c—40c piece. Pieceworkers in logging usually pay \$1 day board.
	SAME AS ABOVE	10-12	80	Piecework pays 1c piece for all men in gang.
	\$2.75 TO \$4.00 & BOARD A DAY	10-12	45	Note: sawloggers do not come under Unemployment Insurance; get Compensation.
	\$60. TO \$75. & BOARD	10	130	Piecework pays \$3.—\$3.50 cord. 60-75 per cent is piecework; monthly bonus.
	SAME AS ABOVE	10-12	80	Piecework pays \$2.—\$3. cord. Monthly bonus of \$5.—\$10.
	\$2.75 TO \$4.00 & BOARD A DAY	10-12	40-50	Note: Pulpwood loggers do not come under Unemployment Insurance; get Compensation.
	\$5 TO \$6 A DAY BOARD EXTRA	10	130	Under Workmen's Compensation; unless mills operate over 30 weeks a year are probably not under Unemployment Insurance. In B.C., many union members; not unionized elsewhere. 32,020 employed, Apr. 1, 1944.
SAWMILLS				
PULP & PAPER	\$35.25 A WEEK	8	300	In all Canada, workers are under Workmen's Compensation; Unemployment Insurance; and are unionized. 35,576 employed, Apr. 1, 1944.

1001 USES

★ The normal pre-war disposal of Canada's timber crop can be seen from the ten-year average, 1930-1939. The annual cut averaged 2,519 million cubic feet of standing timber, chiefly softwood. Of this, 226 million cubic feet were exported unfinished. Of the balance, 37 per cent was used for fuel; 32 per cent went to the sawmills as logs and bolts to be turned into lumber; 25 per cent went to the pulp and paper mills; and the remaining 6 per cent was used largely in the form of mining timbers, ties, poles and posts finished in the woods.

Broomsticks and Nighties

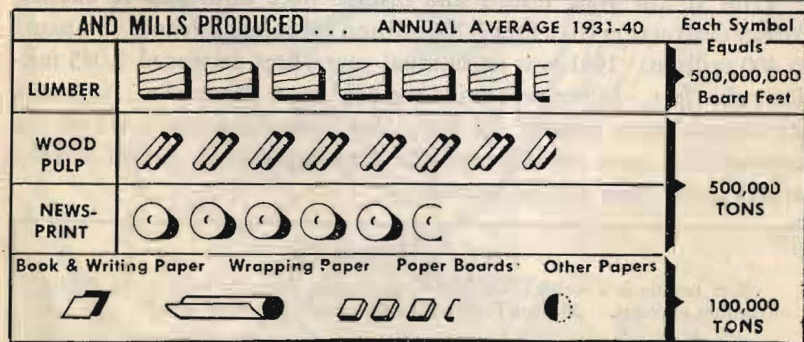
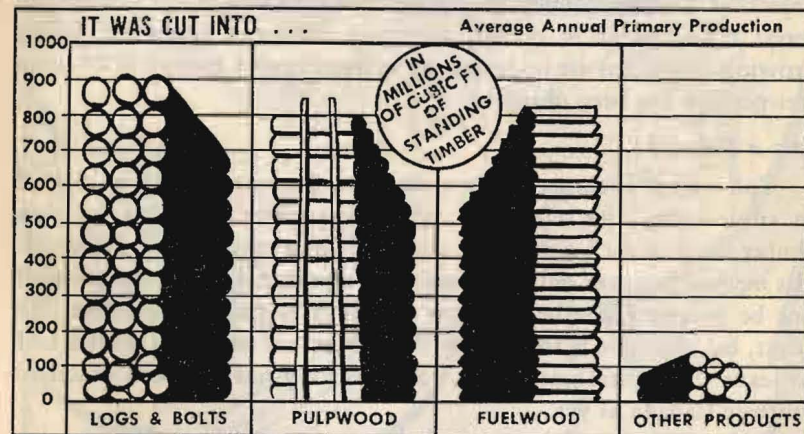
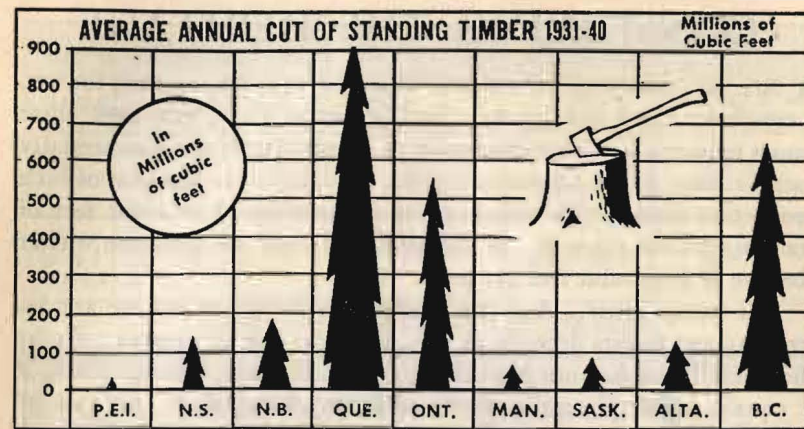
Canadian wood finds its way into many things other than fuel, lumber and newsprint. One group of industries manufactures articles made entirely or partly of wood—doors, baskets, barrels, boxes, canoes, silos, spools, furniture, coffins, agricultural implements, railway rolling stock, brooms and brushes.

There is another group of industries of rapidly growing importance. Brought into being by scientific research and manufacturing ingenuity, they use the products or waste of the sawmills and pulp and paper mills as raw materials for their own products. They turn out wall boards, insulating material, rayon silks, cellophane, imitation leather, fountain pen barrels, phonograph records, linoleum, alcohol, plastics, smokeless gunpowder and even yeast cakes.

Wood Goes to War

Since 1939, Canadian timber has literally forsaken the ways of peace and gone to war itself. Almost overnight, Canada became the major source of lumber for the United Kingdom. In Canada, more than 9,000 buildings were erected at naval, military and air establishments in the two years 1940-1941. They consumed millions of feet of lumber. In 1940, \$25,000,000 worth of lumber went into ammunition and other boxes for war shipments and larger amounts in later years.

Paper is indispensable in modern war, going into everything from shell cases to special films. Plywood becomes the sheath of aircraft wings and fuselages. Chemically treated, wood becomes alcohol for the manufacture of explosives and rubber.



CONSERVING THE HERITAGE

★ Are we destroying our forests? Trees are killed by cutting for use, forest fires, insects and disease. During the ten years, 1930-1939, these causes removed each year an average of 1.7 per cent of the commercially useful timber in the accessible forests. In relation to the area of such productive forests, this amounted to a depletion of 14 cubic feet of standing timber per acre. In the peak year 1941 the depletion was at the rate of 18½ cubic feet per acre.

But forests grow. And the answer to whether or not we are destroying our forests depends in part upon the rate of growth. So far the overall rate has not been determined. Forestry officials doubt if it equals, under present methods of forest management, the rate of depletion in 1941. They do know, however, that under intensive forest management in certain Northern European countries, where growing conditions are no better, an average rate of growth of 28 cubic feet per acre has been obtained.

It's a Science

You can cut to conserve. It is the job of a scientific forester, trained in silviculture (the science of cultivating forest trees) to see that timber is cut in such a way that there will be a regular annual harvest. His method is to cut only the number of trees whose total volume will not be greater than the full year's growth of the whole forest. In effect, his objective is to cut only the interest on our forest wealth and to leave the capital untouched. Such cutting has not been practised much in Canada as yet.

Prior to the war, insects and disease were estimated as causing greater destruction than fires—700 million cubic feet a year as compared to 400 million. 1941 was an unusual year—fires destroyed 1,045 million cubic feet. In fire protection we need more prevention, for man's carelessness starts most of the fires. For conservation as a whole the responsibility rests with the people of each province, forests coming largely under their administration.

THE AUTHORS

Kim Beattie is a well-known Ottawa journalist, formerly with Army Public Relations overseas. Morton Freeman is a *Canadian Affairs* staff writer.

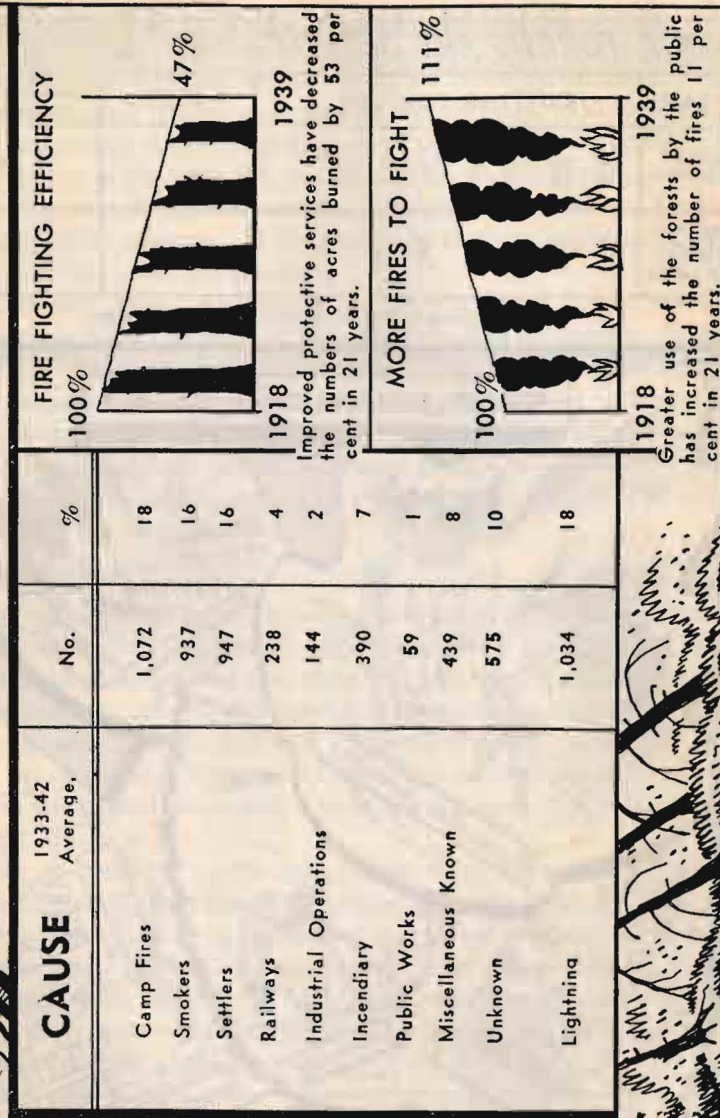
OUR FORESTS ARE DEPLETED BY..

YEARS	CUTTING FOR USE	FIRES	INSECTS & DISEASE
1931-40	□ □ □ □ □ □ □	■	■ ■
MANY 1941 FIRES	□ □ □ □ □ □ □	■ ■	■ ■

EACH SYMBOL EQUALS 10% OF DEPLETION



WHAT CAUSES FIRES ?



FORESTS IN FUTURE

★ We thought this was the age of metals. But the Mosquito fighter-bomber darting over Europe is a symbol of the development of new uses for wood. Such uses may represent only a small part of forest production at present, but they provide an horizon for the future bright with plastics. This is good, for so much of our land is suited to forest that our prosperity depends in great measure upon the continued development of the use of wood.

With exports of forest products footing so much of the bill for the goods we must import, and with the livelihood of a quarter of a million workers at stake, it is wisdom to look to the future as to the position of our wood in post-war markets.

Canadian leadership in the export of newsprint seems secure and the markets assured.

Competition in Timber

But the situation is different when it comes to timber.

Without doubt Canada can expect a huge demand for her timber during the reconstruction period. In the short run, post-war building should keep our sawmills and logging camps busy for a number of years. But how about the long run? The answer is in doubt until we see to what extent the great powers are going to co-operate after the war in the exchange of goods and division of markets.

Before the war Britain was Canada's best customer for timber. Yet she imported more from Europe than from Canada. With the European sources cut off, British imports from Canada have expanded greatly. If old practices return after the war, we may expect the Scandinavian countries, previously our chief rivals and whose economies are based largely upon forest products, to provide strong competition. It is also possible that the Soviet Union, with enormous timber reserves, may have to use them to obtain foreign credits. As far as competition for the British market is concerned, the northern European countries will have the advantage of a shorter haul, while the Soviet Union will have the advantage of production by the state.

These factors seem to point to the necessity of developing in the long run alternative markets and improved products.

During the war the demand for wood in the face of a shortage of manpower has necessitated much government control over forest industries. The Dominion government established two Crown companies in the field of production. Aero-Timber Products, Limited was created in 1942 to increase the logging of Sitka spruce for use in the structural parts of aircraft. The other is the Veneer Log Supply Company for the production and distribution of yellow birch veneer logs used for aircraft plywood. To maintain and distribute supplies a government timber controller was appointed in June, 1940; this control was extended to wood pulps, papers and fuel wood in 1942.

Planning for the Future

Just how we will make use of our wartime experience is a matter for discussion. At present much thinking is being done about post-war forestry. This is illustrated by the final report of the special subcommittee appointed by the Dominion government to study the conservation and development of Canada's natural resources.

One recommendation of the subcommittee was that a Forest Rehabilitation Act and a Dominion Forest Act should be passed.

The first is aimed directly at providing more scientific and efficient forest management. It proposes that 15,000 men be trained in forestry.

The second proposed Act covers mainly the operation of forest experimental stations and forest products laboratories, the administration of the national forests, and increased forest protection.

In addition, it was recommended that forestry projects be started under Dominion-Provincial agreements when employment is needed.

Possibly the major task of the future is to adopt and practise wise measures for the welfare not only of the forests but also of the men who log them, saw them, and process them for the use of man. Short-handed, the workers in wood have turned our tall timber into "fighting forests" for the United Nations. After the war, with their brothers from the fighting fronts, they want to participate in the expansion of human well-being.

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Guide for Discussion



The article is full of facts and figures. Don't be discouraged by them. They are the sort of facts that are pretty important to the large number of Canadians who earn their living in forest industries.

It should be possible to develop a good discussion simply around the chances of getting a post-war job in the lumber industry—and around the future uses of wood.

Why not find out how many of your group have ever worked in the woods? For how long? Do they plan on going back to that kind of work? How many have worked in pulp mills or in the hundred and one plants producing the kind of materials mentioned in our editorial?

Those sort of questions should open the way to a general discussion on the various topics dealt with by the authors. The quiz too can be relied on to start something in the line of discussion. Don't neglect our Pictorial No. 6 "Wealth in Wood"—make use of the information on it.

The article contains a summary of wages and working conditions in woods industries. That can be the basis for some interesting

arguments. People who make the too quick comparison with the pay of a serviceman should be asked to work out the comparison in detail on the basis of days worked, taxes paid, outside expenses, etc.

The question of post-war markets for our products will probably come into the discussion. You might refer to our issue, "Canada—World Trader" (*Canadian Affairs* for March 15)—someone may bring up the sort of questions that were discussed there.

More—If You can Get It

The Forestry texts published by the Canadian Legion Educational Services, Ottawa, contain descriptions of the various occupations involved in government forest protection services, logging and milling. Two of them have been published, two more are about to come off the press.

If you want the low-down on what we might do to improve things in the woods, we suggest you read "The Canadian Forestry Situation, 1944", issued by the Canadian Society of Forest Engineers, 10 Manor Road West, Toronto, Ontario.

1. What will the chances be for a job in forest industries after the war?

NOTE: Quite a few post-war plans are being made in which "spare" manpower will be used for forest improvements, such as roads, waterways, parks, aerial surveys and brush clearing. The premier of Ontario recently made an optimistic speech in which he said that with as effective use of wood in Canada as in Sweden, the forests of Ontario would provide employment for two million men after the war!

Study our chart on page 9 which gives a rough picture of wages today in forest industries. Ask your Education Officer for a copy of the map showing the location of sawmills in Canada.

Can we expect a lot of men to want to go into forest industry? Here are some reasons pro and con. Men will want to go into this industry because: (1) The demand for forest products and the need to expand the forest services will provide many openings for many skills. (2) Forest operations in B.C. and pulp and paper work in all Canada provide year-round employment. (3) Many of the

occupations provide outdoor work appealing to younger men. (4) Relative to other industries, the earnings for some of the skills involved are fairly good (on April 1, 1944, the average weekly earnings per employee of pulp and paper mills ranked 13th, of sawmills 36th and of logging camps 39th in a list of 57 industries).

Men will not want to go into the industry because: (1) Too much of the work in logging, sawmilling and the forest services is seasonal. (2) Too much of the work is far from the comforts and advantages of civilization. (3) A great deal of the work involves long hours, back-breaking toil, and rates of pay which vary widely in different parts of the country. (4) Except in pulp and paper mills and associated manufacturing, there is not much opportunity for a man to marry and settle down. (5) "Let the oncoming generation fill the openings, we've had our share of rough life and hanker for a bit of civilized living with a future in it."

2. Are we looking after our forest resources as well as we should?

NOTE: Protection today consists chiefly of fire protection organized on a provincial basis. Well organized staffs enforce fire laws and fight fires. They use lookout tower systems, specialized equipment, aeroplane patrols, fire hazard forecasts. However, our average annual loss from forest fires is still far greater than in Scandinavian countries where there is more widespread scientific forestry, more complete use of all parts of the trees, and more public interest in forest conservation.

Something, but not enough, has been done to combat insects and fungi which either kill or distort the growth of trees. Such distortion lowers the quality of timber. Effectiveness against insects and disease appears to depend largely upon the extension of scientific forest management.

Methods of logging, sawing, and pulp- ing have been wasteful. Logging has left

vast areas of the best forest land barren of useful trees, especially in B.C. Only one-third to one-half of the timber entering a sawmill emerges as lumber. About half the wood entering a pulp mill emerges as pulp and such mills often use wood which might better be used for lumber. Private companies have not been inclined, because of the cost, to undertake reforestation nor sustained yield methods of cutting. There has not been enough variety of production, especially in N.B., to use all the products of the forest. Research has been less extensive than in other industries. Perhaps we really need entirely new methods of scientific forestry applied for the protection of our forests. That indeed may entail some reorganization of forest industries in order to eliminate wasteful cutting and make sure that the best use is made of the available supply.

CANADIAN AFFAIRS invites constructive criticism. Your comments will not be for publication. We want your suggestions so we can do a better job. Write directly to: The Editor, CANADIAN AFFAIRS, Wartime Information Board, Ottawa.

3. Do we want to keep a large part of our forests as Crown lands?

NOTE: The amount of forest land owned by the Crown—that is to say by the provincial governments, varies greatly from province to province. In P.E.I. for example all the woodland is privately owned, mainly as farm woodlots. In N.S. 87% is privately owned, and in N.B. a little over 50%. Both these provinces have some very large private holdings. In Ontario however only a little more than 3% of the woodland is privately owned and for the remaining provinces the average is only 8%.

The present policy of governments generally is not to sell any timber limits. The argument is that if the land is government-controlled then cutting operations can be controlled and an essential raw material protected better than if it were wholly in private hands.

One criticism from private operators is that public ownership has not produced a policy so far to encourage them to plan for second crops but has rather fostered destructive cutting for quick returns both to the operators and the governments.

This criticism is aimed not so much at public ownership itself as at the length of licences (arguing for long term licences), the inadequacy of governmental staff to control cutting on crown lands, and the system of taxation. They argue that reforestation, protective services and the introduction of scientific forestry should be the responsibility of the governments.

In favor of private ownership is the argument that it enables operators to plan for long term use of the forests and provides an assured supply for plants requiring heavy investment. Yet in N.B. where there is much private ownership, the following statement was made this year in a brief on "Forestry and Post-War Reconstruction in New Brunswick"—"Methods of cutting are determined almost solely by considerations of immediate financial profit, without regard for effects on growth and reproduction." Private ownership of large tracts may hold land out of production, discourage the development of new industries, and make it difficult to control cutting for the best use of the forests.

Articles which appear in Canadian Affairs should be regarded as expressing the views of the individual Canadians who write them. These are not necessarily the views of the Defence Departments, the Wartime Information Board, or any other Government Authority. Indeed, occasions will arise when in order to complete the picture of some aspect of wartime life an issue will present opposing views of different authors on one subject.



Answers to Quiz:

1. One-third.
2. 90%.
3. Two-thirds.
4. Softwoods form over 80% of our standing timber.
5. Here are 9 hardwoods—yellow birch, maple, poplar, white birch, beech, elm, ash, basswood, and oak.
6. 4,500 sawmills. Just over 100 pulp mills.
7. About 240,000.
8. Great Britain.
9. We rate first, producing more newsprint than all other countries combined.
10. All of them!