

# Conservation

A monthly bulletin published by the  
Commission of Conservation, Ottawa, Canada.

VOL. VII

NOVEMBER, 1918

NO. 11

## Preventing Waste of Human Efficiency

Social Conditions Need Improvement in Order to Check Appalling Loss of Life and Promote National Prosperity

Dr. Hattie, Medical Officer of Health of Nova Scotia, estimates that our economic loss from unnecessary deaths in Canada is \$150,000,000 per annum. Prof. Irving Fraser, of Yale, estimates that the saving possible from better conditions of public health in the United States is far greater than \$1,000,000,000 and may be \$3,500,000,000. It is estimated, on the highest authority, that in North America, we lose 690,000 people annually by deaths from preventable causes. These appalling figures, even to-day, when we are accustomed to the toll of human life which it is being taken in Europe. Feeble-minded children cost America \$90,000,000, and crime costs \$600,000,000 a year. A great proportion of this loss could be saved if proper hygienic measures were taken by government authorities. We cannot estimate what proportion is due to individual neglect, and in any case, it may be difficult for us to secure any improvement in that direction; but we think that much of the loss is due to lack of intelligent development and to criminal indifference, and that we only need courage to remedy these evils by means of government organization.

The very sacrifices which are being made in the war demand that we who are at home should devote our attention to laying the foundations which will insure healthy living conditions and increased efficiency in the future. To make the following recommendations as being the first steps necessary to be taken to enable us to apply proper remedies for such social evils as we have and to promote national prosperity in the future:

The Federal and Provincial government machinery for dealing with the control of the planning, settlement and development of land should be extended and improved; the surveying branches of the government should be strengthened and more elaborate surveying work assigned to them; and a complete and co-ordinated system of federal, provincial, and municipal administration of land resources should be developed, with the whole organization centralized in a department or permanent commission of the Federal Government.

A comprehensive survey of the physical and industrial conditions  
(Continued on page 42)

## Value of Property More Than Tripled

City Planning in Baltimore Raised Value from 60c to \$2.00 a Foot

"My seven years experience in the City Hall has emphasized the fact that planning is absolutely necessary if a city is to grow along the lines of the highest and best development," said Mayor Preston, of Baltimore, in giving an account of his year's stewardship to the electorate. "A city cannot grow haphazard," he continued, "without great detriment to property values, to commerce and business, and to the health and comfort and happiness of the people.

"Generally speaking, no city official or expert can know the needs of a community much better than the community itself. The knowledge and judgment of the community should be, in a large measure, a guide to the city planner, except that his expert knowledge may be used to solve the local problem in accordance with the experience of other cities. Representatives from the various sections should be heard and the needs and requirements of the several sections considered before the final adoption of any plan.

"The water, sewer, electrical subway and paving features of city planning will necessarily follow the street planning, so that the final development and the location of the streets and avenues for the future city will be of the first importance. Upon the determination of this question will rest very largely the beauty, convenience and value of Baltimore a hundred years hence.

"The Key Highway, I believe, to be one of the best examples of good city planning. The uses and purposes of that street are quite apparent, and the economic value to the city may be judged by the fact that in the con-

demnation of the land for this street, the city paid an average of 60 cents a square foot for the land, and has been making sales of its lots on the Key Highway at \$2 a square foot.

"The city, in all probability, will employ the most eminent authorities on city planning, and it is certainly to be hoped that the result may measure up to our expectations. We hope to lay down wise foundations on the water and on the land for the future city, but let our key-note be a reasonable, practical plan—one that we may expect to accomplish rather than hope to accomplish."

## New Wood Found for Making Newsprint

Experiments Show Birch Can Be Used—Will Help Reproduction on Cut-Over Lands

The most serious obstacle to the proper handling of the mixed forests of eastern Canada has been the lack of utilization of the hardwood species, particularly birch. This is especially true of the mixed forest lands held as pulpwood limits, where, over vast areas, the coniferous species comprise only from one-quarter to one-half of the stand, the balance being hardwoods. The cutting of the conifers, especially spruce and balsam, has a constant tendency to convert the stand into a hardwood forest, partly because of the actual reduction in numbers of the conifers, while the hardwoods are left standing; and partly because the coniferous seedlings are prevented from actual growth, on account of the dense overhead shade of the hardwoods, which spread out and close in the spaces made by the removal of the conifers. If the hardwoods, particularly birch, could be used to commercial advantage, a serious menace to the continuity of our pulpwood forests would be removed.

(Continued on page 43)

## Community Nurses Combat Epidemics

Recent Epidemic of Influenza Showed the Need for Extension of Voluntary Aid Organization

Health is a great national as well as individual asset. Conversely, disease causes incalculable losses to nations, by unifying their citizens for active work and by necessitating hospitals, sanitariums, medical and nursing services, etc.

Fortunately much has been done to alleviate the suffering and reduce the losses caused by average morbidity conditions. But, when a disease becomes epidemic, it usually happens that the machinery for combating it proves insufficient. It is the literal truth that hundreds, and even thousands, of deaths occur at such times unnecessarily.

The recent epidemic of Spanish influenza afforded an excellent example of this lack of foresight. Emergency hospitals, bedding and equipment, nursing and other help, were quite inadequate in a great many places. If it had not been for the work of the Voluntary Aid Detachments organized some years ago by the St. John Ambulance Association, the epidemic would have been a veritable calamity. This experience indicated the importance and value of having an organized body of volunteer nurses, such as the V.A.D.'s, always available to meet similar contingencies.

The St. John Ambulance Association already has an extensive organization of V. A. Detachments all across Canada, but they should be extended to every community centre in the country. No village is too small to form the nucleus of a detachment and every city should have several well-organized units. These units not only acquire valuable instruction in first aid, home nursing and kindred subjects, but, where the citizens or the local authorities assist, they establish depots for sick-room supplies to be used in cases of emergency.

At present, the Association receives a small appropriation from the Government. It might be possible to have this increased and, in any case, every encouragement should be given the Association to perfect its organization in Canada. In Great Britain, such units have been long established and community nursing is being steadily organized in the United States.—A. D.

United States soldiers at Camp Dix, New Jersey, grew \$25,000 worth of vegetables last summer. About 400 acres were cultivated.



AN EYE FOR BEAUTY

Corporations are not all sordid and soulless—popular opinion to the contrary, perhaps. The tracks in this station yard of the Pennsylvania Ry. System have been constructed so as to preserve the fine old tree. The public prefer to travel on such railways.

Oct. No. 177

## Cutting Methods Are Key to Forest Wealth

Forest Service Does Not Control These in Ontario or on Dominion Lands

It is of the greatest importance that we fully realize that our virgin forest resources are by no means inexhaustible, but that they can be made so by the exercise of proper supervision over the methods of cutting. This means the practice of scientific forestry, and this, in turn, involves the employment of large numbers of well-trained and thoroughly-experienced foresters in the supervision of woods operations. These men are simply not to be had at present, but, with the close of the war, considerable numbers will be available. Forestry practice in Canada may be expected to receive a decided impetus with the return of the men who are now rendering such valiant service in Europe in producing the timber supplies essential to military operations.

British Columbia, Quebec and New Brunswick have provincial forest services, whose duties include supervision over cutting operations on Crown lands. In the West, the Dominion Forestry Branch has the same responsibility, in regard to Dominion forest reserves. Thus, in each of these provinces there is already at least the beginnings of a technical forest administration, in the hands of men educated and trained particularly for such work.

In Ontario, on the other hand, the Provincial Forestry Branch is concerned primarily with forest protection, forest nursery work, etc., but has no direct administrative connection with the enforcement of cutting regulations on Crown timber lands. On Dominion lands in the West, similarly, the Dominion Forestry Branch has no administrative connection with cutting operations on licensed timber berths or on unlicensed lands outside the forest reserves. In Nova Scotia, there is, as yet, no technical forest service at all, though the Provincial Government has for some time had the matter under consideration.

Until technical forestry methods, based upon the best business considerations from a long-time point of view, are put into effect on all the non-agricultural forest lands of the Dominion, we shall be mining our forest resources, rather than treating them as a crop, and shall therefore be sacrificing the permanent welfare of the country for the sake of a temporary advantage.—C. L.

## Preventing Waste of Electricity

(Continued from page 41)

ditions of all rural territory should be made, with the object of ascertaining the main facts regarding the problems of rural life and rural development, and of enabling constructive proposals to be made regarding the development of the human and natural resources of the country. This survey should comprise, *inter alia*, a complete inventory of all lands which have been already surveyed and homesteaded, with a view to securing their proper settlement, and devising means to lessen injurious speculation. Settlement of re-

note areas should be suspended while the survey is being made, and no Crown lands should be settled until after proper planning.

3. Provincial governments should consider their systems of administering colonization highways and municipal affairs, with special regard to the need for securing more co-ordination, uniformity and efficiency in all matters pertaining to local government, and for increasing the responsibilities and powers of municipal authorities under the skilled advice of a central department in each province.

4. Model regulations setting a minimum standard of sanitation and housing, building construction and general development should be agreed to by Provincial governments and municipalities in joint conference and then made compulsory in each province.

5. Carefully planned model towns or "garden cities" should be established on suitable sites as object lessons in industrial development, and of increasing production by scientific means and providing more varied opportunities for labour, including returned soldiers. Areas in these towns should be reserved for both manufacture and agriculture, on lines which have already been successful.

6. Planning and development acts, corresponding to the draft act of the Commission of Conservation, should be passed in Ontario, Quebec, Saskatchewan, British Columbia and Prince Edward Island, and the town planning acts in the other provinces should be changed in name and widened in scope, so far as may be necessary, to make them applicable to deal adequately with both rural and urban development. All rural and urban land should be planned and regulated by proper "development schemes", prepared under such planning and development acts, with a view to securing health, convenience, efficiency and amenity in connection with its use for building or other purposes, and discouraging speculation.

7. The problem of re-instating ex-service men into industrial and social life should be dealt with by the municipalities under the guidance and control of provincial departments, and provision should be made for placing such men in suitable and congenial vocations, either in rural or in urban localities. They should be placed where their abilities can be put to the best use, where it is reasonably certain that adequate reward can be obtained for their labour, and where facilities for social intercourse and education are available.

Development schemes dealing with wide areas should be prepared in advance of any settlement on the land of returned soldiers, and such schemes should be economically sound, independently of the financial aid that may be given as a reward for military service.—T. A.

Chatham, Ontario, had about 500 acres in gardens this year, of which it is estimated \$25,000 worth of produce was grown. Preparations have already been made for an increased acreage next year. Even the river banks and the railway right-of-way are being cultivated.

## STORING GARDEN PRODUCE

Have you taken stock of your garden crops for storage and planned accordingly?

It is time now to plan for storing certain crops for winter use. How are you going to do this—in house cellars, outdoor cellars, pits, trenches, cold frames, or where? There are several satisfactory ways of storing the various crops; it is only a matter of planning to meet your needs.

The home cellar is a good place in which to store vegetables providing it meets the necessary requirements of ventilation, temperature, moisture, and drainage. A well-drained, well-ventilated, unheated cellar with earth floor and freedom from freezing temperature, is just about ideal for the storage of vegetables. You can control the temperature by opening the windows at night or when the outside air is not freezing cold, and closing them when it warms up. Try to keep it about 40 degrees F.

The earth floor will give up just about enough moisture to keep the vegetables from drying out. If there is a cement floor, watch the vegetables for signs of withering, and then sprinkle the floor with water as necessary to keep the vegetables plump and crisp. It is a good plan to spread an inch or two of sand or earth on the floor and sprinkle with water occasionally.

In the cellar, vegetables are most conveniently stored in boxes or barrels. These should be placed on strips of wood or other supports to raise them off the floor to allow air to circulate beneath them. They should also be set away from the cellar walls so the air may move back of them. Shelves may be built to support the boxes if desired. Built-in boxes are often used but they are not so handy to work with nor so easily cleaned.

Keep the vegetables in the dark by darkening the windows or by covering with paper or other material.

## Drying Pumpkins

Pumpkins are bulky vegetables to store—why not try something new this year and dry them? It requires a sharp knife, some "elbow grease," a little common sense, and sunshine.

There are two ways of preparing pumpkin for drying and both are satisfactory. Cut into one-half inch strips, pare and clean. Blanch three minutes. Cold dip, remove surface moisture by pressing between clean towels, and spread on drying trays, platters or dripping pans. Spread a single thickness of paper or thin muslin first. The drying time is three to four hours, starting at 110 degrees F. and raising gradually to 140 degrees F. The pumpkin may be cut in rings instead of strips, and these rings hung up over the kitchen stove or in the sun. Unless the air is very dry, the time required will be longer if the drying is done in the sun than in a drier, but less watching is necessary and the product will have an excellent flavour.

## What Farm Activity Pays You the Best

Some of the Things a Set of Books will Show You

Keeping books pays as well on a farm as in a bank, a railway office or a factory. Many large farms have a regular bookkeeping department. The average size farm does not need such an elaborate system of accounts, but many more than it needs three or four binders, seven cement separators, nine chunds, or five hay loaders. The size and detail of the system depends on the acreage of the farm and the amount of business the farm does.

Some person on the farm can learn how to conduct a set of books for the farm. Then only a few minutes a day, or once a week, will be needed to keep a set of farm account books.

Here are several important things a farmer knows if he keeps a set of books: How many dollars' worth of foodstuffs sold off the farm last year? How much money was cleared on the farm last year? What crops are paying? How did this year's profit compare with last year, two years ago, five years ago?

A farmer will be able to check every item of farm expense such as feed, poultry, cattle, and hogs, the cost and the value of their products on the farm.

Another pleasing and profitable thing about a set of farm books—can take an inventory at the end of the year of all the live stock, the implements, the buildings, the grain on hand, and all of the equipment and know just where the farm stands financially.

The Commission of Conservation has issued a very simple yet comprehensive farmer's account book which will be sent free to Canadian farmers who ask for it, stating at the same time how many acres they work. The supply of these is limited and the rule of "first come, first served" will apply.

## TO DEVELOP ITS OWN NATURAL RESOURCES

The Greater Winnipeg Water District is planning to develop its own resources and an immediate survey of these will be made. Heretofore, it has been the practice to approve of permits to private parties to cut timber in the District. It is expected that large quantities of cedar posts and poles, pulpwood and other timber will be cut and marketed under the new plan. The resulting traffic will also help to pay the running expenses of the construction railway which cost over \$1,000,000 to build and which is now hoped to make permanent.

## FINANCIAL MAGNATES UTILIZE OLD TIN CANS

It is estimated that \$3,000,000 worth of used tin cans are wasted every year in Canada. A company, called Cans for Conservation of Canada, Ltd., has been formed in Toronto to collect these, to cleanse, sterilize and re-top them for use again. It is understood that Mackenzie-Mann interests and J. P. Morgan & Co., of New York are interested in the undertaking.

**Commission of Conservation  
CANADA**

Sir CLIFFORD SPURD, K.C.M.G.  
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JAMES WHITE  
Assistant to Chairman and Deputy  
Head

CONSERVATION is published the first of each month. Its object is the dissemination of information relative to the natural resources of Canada, their development and proper conservation, and the publication of timely articles on town-planning and public health.

The newspaper edition is printed on one side of the paper only, for convenience in clipping for reproduction.

OTTAWA, NOVEMBER, 1918

**RATS ARE BIG EATERS**

Experts have estimated that one rat will consume 40 to 50 pounds of food in a year. It has also been figured that it requires the continuous work of about 165,000 men with farms, agricultural implements, and other equipments to supply the foodstuffs destroyed annually by rats in the United States and Canada. In addition rats destroy other property, mainly of agricultural origin, the production of which requires the work of about 35,000 men. This gives a total of 200,000 men whose economic output is devoted solely to feeding and otherwise providing for rats.

**WATER DAMAGE TO FLOUR**

It is a well-known fact among sailors that flour will not only float after immersion in sea water, but it suffers very little damage. To ascertain the actual damage, says the *Northwestern Miller*, a baker in New South Wales submerged a 150-lb. bag of flour in the ocean and left it in the water 67 hours. A 98-pound weight was necessary to sink the bag, which would have supported about 75 pounds, or half its own weight, on top of the water. When lifted and weighed, the bag scaled 155 pounds. It was dried for four days and yielded 120 pounds of perfectly dry flour, the bag and waste weighing 28 pounds. Baked into bread, it gave perfect results.

**ADVANCES MADE IN  
SOCIAL WELFARE WORK**

Marvellous interest has now been awakened in every phase of social welfare. The withdrawal of men from ordinary employment has meant high wages for those remaining and, notwithstanding the great need for production, hours of labour have been made shorter. More attention is paid to the comfort of employes and the providing of lunch and rest rooms than before the war.

The better housing of families has attracted the endorsement and support of business men and Governments, and there is hope that the unsanitary and dilapidated hovels of the poor will soon give way to modern substantially built homes. No longer will the world look with indifference on the misery and oppression of the poor, or tolerate with complacency the hardships and injustices that have for centuries been considered inevitable and irremediable. There are some of the great advances that are being made:

Greater value is placed on child life. Baby clinics organized. Many child welfare meetings held and great educational propaganda conducted on the feeding and care of infants.

The Workmen's Compensation Act is being increasingly appreciated and it is found out this principle it is conceded there should be a Widow's Allowance Fund provided by the State so that families may not be broken up on the ground of poverty alone.

—J. J. Kelso.

**CANADIAN MORTUARY  
STATISTICS DEFECTIVE**

The report of the Conference on Vital Statistics, held last June between representatives of the Dominion Government and the Provincial Governments, has been published and copies may be had free of charge from the Dominion Bureau of Statistics, Ottawa. The purpose of the conference was to standardize the haphazard system of vital statistics now prevailing in Canada, a result that can be obtained only by the provinces, who collect these statistics, co-operating with the Dominion Bureau of Statistics, which offers to compile them. The decennial census has been found useless in so far as vital statistics are concerned and the Dominion must depend on the Provinces for information. The report now issued gives the recommendations for accomplishing the ends set before the Conference.

The report in dealing with mortuary statistics throws an interesting side-light on the present condition of vital statistics in Canada. There are 24 items of information necessary on a satisfactory death certificate. Of these British Columbia omits 3 and 5 others are defective; Alberta omits 8 and 5 are defective; Saskatchewan, 4 omitted, 2 defective; Manitoba, 4 omitted, 3 defective; Ontario, 12 omitted, 2 defective; Quebec, 16 omitted, 2 defective; New Brunswick, 15 omitted, 4 defective; Nova Scotia, 13 omitted, 2 defective; Prince Edward Island, 16 omitted, 4 defective.

**New Wood for Newsprint  
(Continued from page 41)**

The primary reason why the hardwoods of our northern forests have not been utilized has been the difficulty of transportation, due to the absence of railways. They are too heavy to be driven long distances in streams, without very severe loss by sinkage; and, besides, the amount of flood water in the majority of driving streams is hardly adequate to float the spruce and balsam to their destination, to say nothing of carrying large quantities of birch. As a consequence, birch has remained practically a weed tree over enormous areas of our eastern forests where there is no rail transportation.

At last, however, there is a possibility that the problems of transportation may be partially solved through the winter use of motor tractors for log-hauling on iceed roads. This would apply not only to hardwoods but to coniferous species as well, where in the case of log drives, the loss by shrinkage is serious, especially as to the smaller sizes, and more particularly in the case of balsam. Several concerns are experimenting, or are pre-

sparing to experiment, along these lines, the River Ouelle Pulp and Lumber Company being the pioneer in this direction in eastern Canada. The Laurentide Company has purchased some lighter tractors of the caterpillar type and will conduct experiments this winter in the St. Maurice valley. The use of tractors for log hauling is already established in parts of British Columbia and in various sections of the United States.

The second obstacle to the removal of the hardwoods in our northern mixed forests has been lack of a suitable market, particularly by the pulp and paper companies, which hold rapidly increasing areas of such lands. Formerly, only spruce was accepted for use as ground-wood in the manufacture of newsprint; later, balsam was accepted in an increasing proportion, and now both species are used practically without discrimination. It has always been considered impracticable to use birch or other hardwoods acceptably for ground-wood. The Forestry Department of the Laurentide Co. has, however, for a long time urged that experiments be made with a view to the utilization of birch in the manufacture of newsprint, and an experiment recently made by the company gives excellent promise of satisfactory development along this line. A test run was made, the results of which indicate that, in the manufacture of newsprint, up to ten per cent of birch ground-wood can be used to excellent advantage in admixture with spruce and balsam ground-wood.

It is expected that further tests will be made, in collaboration with the Dominion Forest Products Laboratories. Should the final results be satisfactory, and should the use of tractors solve the problem of transportation to any material extent, a new era will be opened up in the intelligent handling of our vast areas of mixed forests. It will then be possible to utilize large quantities of birch, in the manufacture of newsprint, thus materially relieving the increasing drain upon spruce and balsam. At the same time, the logged-over areas will be left in good condition for future production, instead of their quality being depreciated as has been the tendency under the only methods of operation hitherto considered feasible. Should these developments come to pass, forestry will find an immense scope for activity in our northern forests, replacing, at least in part, the destructive methods so generally practised heretofore.—C. L.

**HAVE YOU BOUGHT YET?**

Victory Bonds have the assets of all Canada behind them and they give a return of 5½ per cent on the investment. That is nearly double what your money would bring if on deposit in the bank and the security is the best in the world. Should the war end soon you can sell out for more than you paid. You can buy a hundred dollar bond for \$10 cash and the bank will loan you the balance of \$90 at 5½ per cent interest, to be paid off in monthly instalments. A Victory Bond investment is good business as well as good patriotism.

**Lip Gratitude and Tea**

An Appeal by John Galworthy to Face the Facts in the Wounded-Soldier Problem

ONLY by revivifying in each separate disabled soldier the will to live, can you save him from the fate of merely continuing to exist.

There are wounded men, many whose spirit is such that they will march in front of any effort made for their recovery. I well remember one of these—a Frenchman—nearly paralyzed in both legs. All day long he would work at his *macramé*, and each morning after treatment, would demand to try and stand. I can see his straining efforts now, his eyes like the eyes of a spirit; I can hear his daily words: "*Il me semble que j'ai un peu plus de force dans mes jambes ce matin, Monsieur!*" though, I fear, he never had. Men of such indomitable initiative, though rare, are but a fraction. The great majority have rather the happy-go-lucky soul. For them, it is only too easy to postpone self-help till sheer necessity drives, or till someone in whom they believe inspires them. The work of re-equipping these with initiative, with a new interest in life, with work which they can do, is one of infinite difficulty and complexity. Nevertheless, it must be done.

The great qualities of our countries do not yet, I think, see that they too have their part in the sacred work. So far they only seem to feel: "Here's a wounded hero; let's take him to the movies and give him tea!" Instead of choking him with cheap kindness, each member of the public should seek to re-inspire the disabled man with the feeling that he is no more out of the main stream of life than they are themselves; each man, according to his or her private chances, should help him to find that special niche which he can best, most cheerfully, and most usefully fill in the long future.

The more we drown the disabled in tea and lip gratitude the more we un-steel his soul, and the harder we make it for him to win through, when, in the years to come, the wells of our tea and gratitude have dried up. We can do a much more real and helpful thing. I fear that there will soon be no one of us who has not some personal friend disabled. Let us regard that man as if he were ours; let us treat him as one who demands a full place in the ranks of working life, and to try to find it for him.

Editor's Note—The foregoing is from the foreword written by John Galworthy for the "Report of the Allied Conference on the After-Care of Disabled Men". It is reproduced here in the hope that it may assist in the rehabilitation of our wounded heroes by helping the public to realize that we must face facts and disregard fancies and suppositions in the solution of this imminent problem.

Last year there were 5,285,000 war gardens in the United States. It is said that real estate men are looking forward to a boom in garden lands.

A campaign for the sale of thrift stamps will be begun as soon as the Victory Loan drive is completed.

## Stock Taking of the Forests of British Columbia Is Completed

Commission of Conservation Has Finished Tremendous Task  
Immensely Forest Area in Province Although Two-thirds  
of Acreage Once Forested Has Been Destroyed  
by Fire—Billions of Cords of Pulpwood  
Material

The exhaustive investigation of the forest resources of British Columbia by the Commission of Conservation, extending over a period of three years, discloses the fact that of the total land area of the province, 355,855 sq. miles, approximately 200,000 sq. m. is incapable of producing forests of commercial value. About 145,000 sq. m. lie above the merchantable timber-line, and on 55,000 sq. m., though below timber-line, the soil is either too rocky or wet, or the forests have been so completely destroyed by fire that there is no hope for the natural re-establishment of forest conditions for centuries to come.

Of the remaining 155,855 sq. m. which is capable of producing forests only about 28,000 sq. m.—less than one-fifth—carries sufficient timber to be classified as statutory timberland. (The Land Act defines "timberland" as that which, when situated west of the Coast mountains, carries at least 8,000 b.f. per acre; when east of the Coast mountains, 5,000 b.f. per acre.) In the interior of the province, there are areas of forest land, aggregating 23,800 sq. m. which, though not reaching this standard, carry between 1,000 b.f. and 5,000 b.f., part of which may be utilized. Only very meagre data have been obtained, as yet, as to the area of land which can be used for agricultural purposes. It appears from our forest land classification that somewhat over 5,000 sq. m. is grass

### SAW TIMBER IN BRITISH COLUMBIA

SPECIES	COAST		INTERIOR		TOTAL	
	Million ft. b. measure	Per cent.	Million ft. b. measure	Per cent.	Million ft. b. measure	Per cent.
West. red cedar.....	59,000	27.4	18,019	13.2	77,019	22.1
Douglas fir.....	64,000	29.4	12,573	9.2	76,573	21.8
Spruce.....	14,000	6.7	68,375	42.8	82,375	20.6
West. hemlock.....	52,000	24.3	12,154	9.9	64,154	18.3
Balsam.....	19,000	9.2	13,838	10.2	32,838	9.5
Lodgepole pine.....	20	1	12,130	8.9	12,150	3.5
West. yellow pine.....	—	—	4,208	3.1	4,208	1.2
Yellow cypress.....	3,700	1.9	—	—	3,700	1.1
Western larch.....	—	—	2,152	2.2	2,152	.9
White pine.....	1,100	.5	1,617	1.2	2,717	.8
Black cottonwood.....	400	.2	272	.2	672	.2
	213,220	100.0	136,348	100.0	349,568	100.0

\*Includes Sitka spruce, Engelmann spruce, white spruce and black spruce.  
†Includes alpine fir, lowland fir and amabilis fir.

land or very open forest, some of which is suitable for cultivation, but the greater proportion is of value only for grazing. In addition, there is, perhaps, from 12,000 to 15,000 sq. m. cleared or under forest which is, or may be more valuable for agriculture than for forest production. Deducting this potential agricultural land, say 20,000 sq. m., from the land capable of producing commercial timber, there is 135,855 sq. m. of absolute forest land which should be devoted permanently to forest production.

The timber on about 100,000 sq. m., or two-thirds of the land once forested, has been totally destroyed by fire, and on over half of the remaining 55,855

sq. m. has been seriously damaged. Using the timber still standing as a basis, it is estimated that the province has lost, through forest fires, at least 665 billion feet board measure. When one considers that the total stand of saw material in the whole Dominion probably does not greatly exceed this amount now, the seriousness of this loss, which can be attributed very largely to public carelessness, becomes apparent.

The total stand of saw timber and pulpwood material, in British Columbia, as ascertained by the survey of the Commission of Conservation, is 366 billion board feet. The accompanying table indicates the composition of the present stand of saw material.

It will be seen from this that, of the species which are used in the manufacture of pulp and paper (hemlock, balsam, spruce and cottonwood), there is 170 billion feet, equivalent to 243 million cords of pulpwood, which may be increased to 250 million cords by utilizing smaller-sized timber. In view of the fact that the limited supply of pulpwood is becoming a very serious matter in eastern North America, it is of interest to know that so considerable a supply may be obtained in British Columbia.

The estimate of the forest resources of the province submitted in the report of the Commission of Conservation is based on a much higher percentage of

detailed timber cruises than any forest report of a similar nature heretofore issued. It is believed, therefore, that the information will be valuable, not only to the governments, which control the forest policy in the province, but also to timber owners and financial interests, on whom the development of industry so largely depends.—R. D. C.

To keep the public in touch with the activities of the Government, especially activities connected with the war, the Director of Public Information, Hope Chambers, Ottawa, has begun the publication of a weekly newspaper, called *The Official Record*. The subscription price is \$2 a year.

## Farms Less Fertile Than 40 Years Ago

Member of Conservation Commission Says More Intelligent Farming Needed

Canada has about 28,000,000 acres in field crops of which probably 20,000,000 acres are in the three Western Provinces. In the fertility of the soil being kept up, is it being exhausted, is it being increased? To get an answer, the Commission of Conservation carried out a survey of 2,245 farms. We asked questions of 2,245 farmers located all over Canada. We took them in groups of about thirty or forty—in all about 60 groups, from British Columbia to Prince Edward Island. On this point, we made a definite enquiry of the farmer as to whether the fertility of his farm was being maintained or was deteriorating.

Here is the answer: 30 per cent of them reported about the same yield per acre as 20 years ago, 40 per cent reported some increase in yield, and 30 per cent reported some decrease. That is to say, the land, as used by 30 per cent of all the men reporting, was poorer in its power to produce crops, than it was 20 years before. From Manitoba, 32 per cent of the farmers reported about the same yield per acre as 10 years before; not one man reported an increase; and 46 per cent reported some decrease. That is a summary of the answers to the question when put under an intelligently conducted survey.

We want in Canada more serious and intelligently conducted surveys of our conditions in order that we may acquire real knowledge of facts as they are. Then we can come to conclusions and plan our course of action to deal with the facts discovered and properly interpreted. In the West, the lure of land was for a time similar to the lure of the Yukon; and the lure of the Yukon in the main led on to disappointed men, deteriorated health, and parts of the Yukon left with less material substance that could be called wealth than it had before. There is some excuse for the pioneers taking more than one generation's share of the fertility stored in soil by the beneficence of nature during long ages of preparation. In the pioneer days they needed and had some right to more than their share of this store of natural wealth while making the place ready for occupation; but, after that first need is satisfied, it becomes their duty to make the place more fertile while in their hands.

The history of other countries and other farmers sheds light on our problems; and we may be instructed, to our great advantage, by their experience. In central New York, wheat growing was followed successfully for 40 years. During 20 years more the success was doubtful. Then it became definitely unprofitable. With a climate favourable for agriculture and propitious for crop-growing, it took 40 years of exclusive grain growing to make that system unprofitable, and 20 years more to compel the farmers to stop that sort of practice. Ohio, Indiana, Illinois, Iowa and other Western States either have or are making

similar history. I have gone one time and talked to the old men; from 30 bushels of wheat to the acre the same amount to 14.

We can afford to take a lesson from even our enemy. Germany is a country with a soil which on the whole is not naturally very fertile. With only 30 years she has been able to effect an increase of about 30 per cent in the yields per acre of her crops.

On the other hand, over large areas of Canada our methods of farming are exhausting the fertility of our farms to some extent; and there is danger that the fertility of considerable areas will be reduced below the point of profitable farming.—Dr. J. W. Robertson, Chairman of Lands Committee, Commission of Conservation

## PRODUCING ALCOHOL FROM WOOD WASTE

Waste sulphite liquor is one of the most frequently quoted industrial wastes, as millions of gallons are returned into the rivers every day carrying half the original pulpwood substance together with most of the lime and sulphur used. Recovery of by-products is difficult and costly, but it is safe to say that Canada will begin to practice recovery in the near future. In Europe and the United States evaporated liquor is used quite extensively as a binder for briquetting fuel and a core binder in foundry work. Tannin-like substances are separately and incorporated with true tannins in preparing sole leather. Sweden has taken the lead in recovery of ethyl (grain) alcohol, and produced in 1909 over 500,000 Imperial gallons of 95 per cent alcohol for industrial purposes, motor fuel and potable spirits. It is reported that Germany has established this process in fourteen sulphite plants in order to conserve potatoes which are the usual source of alcohol in that country.

Waste sulphite liquor contains about 1.5 per cent of fermentable sugars which are produced from the wood during the cooking process, and these sugars are fermented to alcohol by yeast. The direct recovery of sugars and other organic matter makes available a fairly good cattle feed. Recent processes aim at the precipitation of the lignin content for use as fuel, and a number of new plants are going up in Norway. Minor processes are the recovery of destructive distillation products, fertilizer and materials for dyeing. There is also the possibility of recovering sulphur compounds which, however, do not originate in the wood.—Dr. J. S. Bates.

## TO PREVENT POTATO ROT

Pick over your potatoes about the four weeks after you have stored them away. The wet weather of the season increases the tendency to rot and unless the diseased potatoes are at once separated from the healthy there will be heavy loss. Most potatoes that look good when harvested will decay after being in storage a few weeks.

Potatoes should be stored in a dry place. The cooler the atmosphere, providing, of course, freezing is not permitted, the better they will keep.