

Conservation

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How to Construct a Potato Planter

Description of Convenient, Home-made Instrument that Any Farmer may Make for Himself

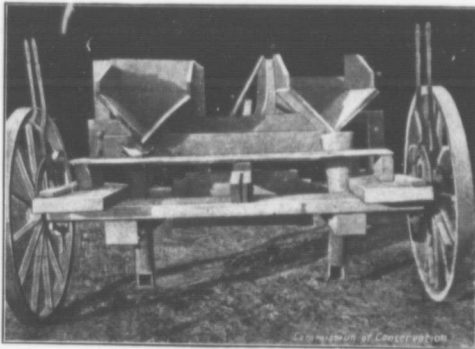
The accompanying illustration shows a simple home-made instrument that farmers, when planting potatoes, will find very convenient. The following description gives particulars, showing how the planter may be made and operated.

The main frame is 3 ft. 6 in., by 5 ft., and made of hardwood planks 2 in. thick by 10 in. wide, bolted together at the corners. The spouts are made of heavy gas pipe, 14 in. long and 3½ in. in diameter, tapered at the point like a cultivator tooth, so that they will not drag the sod or manure. The upper end of the tooth has a thread on it and is screwed into a piece of hardwood scantling 6 in. by 6 in. and 28 in. long, bolted firmly to the frame. The balance of the spout attached to the hopper is made of heavy zinc and is wider at the top for convenience in dropping in the potatoes. The spouts are placed 3 ft. apart and the wheels are centered 18 in. from them, so that the one wheel comes back into its own mark, thus making all the rows the same distance apart. Should it be desired to have the rows closer together, the machine can be made on the same principle to suit any distance.

The wheels are the kind used on the old fashioned walking cultivators, with levers for raising and lowering. The ratchets on the levers should be small and close together, so that they can be moved up or down any desired distance. Gang-plough wheels with ratchets on the sides may also be used by elevating the frame to suit.

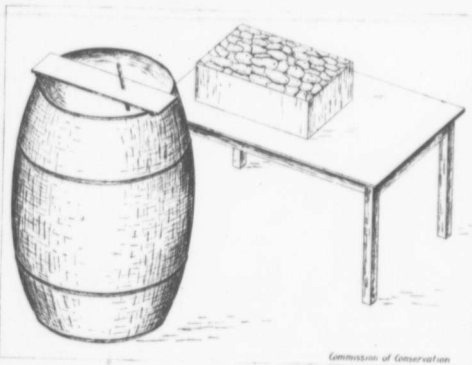
The wheels should be so placed that the machine will balance when two boys are sitting on the back. The boxes, holding one bushel of cut potatoes, are shaped like a mason's hod and held firmly in place in front of the top end of the spouts. The distance apart for dropping the cut potatoes is regulated by blocks, bolted on the spokes, which come in contact with a piece of light steel spring, which makes a noise so that the boys know when to drop

(Continued on page 11)



(Cut No. 36)

Convenient, Simple Potato Planter



(Cut No. 37)

A Handy Potato Cutter

Try This Handy Potato Cutter

Time and Labour may be Saved
and Work will be Better
Done.

Twice the amount can be cut in a given time and the sets will be more evenly divided, if the easily made potato-cutter depicted in the drawing shown herewith, is used instead of the old method of cutting with the knife held in the hand.

All that is required is to fasten a one-inch board, six inches wide, planed on the upper side, to the top of a barrel or box, holding it on tightly by two deep cleats. A long, sharp, thin table-knife is fixed through the board in a slanting position, as shown in the illustration.

To cut, take the potato in both hands and push it lengthwise over the knife, dropping the sets into the barrel or box. Should the sets be too large, the juice of the potato will cause the two parts to stick together and they can then be cut either lengthwise or crosswise as desired.—J. F.

TROPHY FOR FIRST AID WORK IN MINES

In order to encourage first aid work in mines, Hon. Louis Coderre Minister of Mines, recently donated to the St. John Ambulance Association a silver trophy for annual competition among all mine workers in Canada.

The importance of having all mine employees trained in first aid is obvious. When an accident happens in ordinary industrial occupations, only a short time elapses before the assistance of an ambulance or surgeon can be obtained, but as mining is carried on at great depths and distances underground, the time taken to obtain proper medical assistance varies from one-half hour to three or four hours.

Trophies in first aid work, for general competition and for competition among railwaymen and among cadets, have already been donated by Hon. Wallace Nesbitt, but the need of a special trophy for miners has been keenly felt. There is no department of industrial life where the art of rendering first aid is more necessary or where there is more enthusiasm shown by the average employee.—W. J. D.

TO NEWSPAPERMEN

To further public interest in conservation subjects, the Commission will lend to Canadian journals the cuts used in this bulletin. Cuts may be obtained in either fine or coarse screen, and stereotype mats will be furnished to those who have the mechanical equipment necessary for their use.

As there are only a limited number of these cuts, delays are sometimes unavoidable, but orders will always be filled as soon as possible after receipt of application. It is requested that cuts be made use of at the earliest possible date, and returned (O. H. M. S.) promptly, together with a copy of the publication in which the illustration appears.

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Non-Agricultural Land Should Be Reserved

Minnesota Forestry Association
Favours this Policy Similarly
to Canadian Conditions

The Minnesota State Forestry Association is agitating for an amendment to the state constitution, to provide for the retention as forest reserves of all state lands found upon examination to be unsuitable for agricultural purposes. At present, such lands may be filed upon under the guise of homesteads, but, after the removal of the timber—and possibly an attempt at farming, foredoomed to failure—the lands are abandoned, usually in a completely denuded and burned-over condition, and revert to the state. A much better policy would unquestionably be to restrict agricultural settlement to lands clearly suitable for that purpose, and retain the non-agricultural lands for permanent forest production.

This same problem arises in many parts of Canada, in a similar way. Previously, there was no direction of agricultural settlement, and, as a result, much non-agricultural timber land was taken up under the homestead laws. This tendency was particularly strong at the time lumbering operations were being carried on. At that time the homesteader was able to find winter work in the woods, as well as an excellent market for the agricultural produce that could be raised during the few years that elapsed before the surface fertility of the soil, derived from the decayed mould from fallen leaves and branches, was exhausted. In very many cases, settlers have been stranded on these poor lands, and have become so impoverished that they are wholly unable to move away and set up lands really suitable for farm use. More recently, the provincial governments have made attempts at directing settlement, but the pressure for the opening up of timber lands has been strong, and arguments that the lands are suitable for agriculture have been so strongly urged that the attempts to withhold lands essentially non-agricultural have in many cases been unsuccessful.—C. L.

From information received by the Vancouver Board of Trade, it is learned that a fertilizer plant will be constructed on the Skeena river in British Columbia. At present the canneries make no use of the refuse from their plants, and representatives of the firm contemplating the construction of the fertilizer plant have entered into contracts with them for the sale of the offal. The plant is to be operated by the James M. Davidson Fisheries, of Edinburgh, and the machinery for the plant is to be shipped from Scotland. It is expected that the installation of the plant will cost \$100,000.—*U. S. Consular Reports.*

British Columbia Is Pioneer of Scientific Forest Taxation

Scale of Royalties to be Fixed which will Keep
Pace with Growth in Stumpage Values

For the first time in the history of Canada, a definite and scientific plan has been developed in one of the Provinces, by which the public is to secure the benefit, in the form of increased revenue, of the rise in stumpage values on crown lands which will inevitably come as a result of limited timber supplies and steadily increasing demands. This plan is set forth in a bill now before the legislature of British Columbia, which was introduced by Hon. W. R. Ross, Minister of Lands, following a most careful investigation by the Forest Branch, and a series of conferences with the limit-holders concerned. It is understood that the Bill harmonizes, so far as practicable, the interests of both the government and the lumbermen, and that its early enactment into law seems assured.

In other provinces, as also on the Dominion crown lands, there is no definite and well-understood plan for the gradual increase of stumpage dues, to be paid to the government as timber values increase. Instead, this matter is taken up at more or less irregular intervals, usually at the end of ten-year periods, and the outcome is the result of a contest between the needs of the provincial government for greater revenue, and the natural opposition of the lumbering interests to material increases in the royalties. This situation, through the increase in timber through the rise in many of the limits acquiring a large speculative value, which is taken into consideration in transfers from one person or

corporation to another, and this absorption of the surplus value has in turn made much more difficult the re-adjustment of terms between the government and the limit-holders. Apparently, this difficulty will now largely disappear in British Columbia, under the new plan developed by the Minister of Lands and the Forest Branch. The settlement of the controversy will likewise be of great benefit to the lumbering interests, since it will materially facilitate the financing of lumbering operations, by removing the uncertainty which has hitherto prevailed as to tenure and amounts of royalties to be paid.

The essentials of the plan provided for in the royalty bill are explained in the following extract from the address by Hon. W. R. Ross, in presenting this matter to the legislature for its consideration: "The Royalty Bill fixes the royalty increase for 1915, and establishes a level of lumber prices on which future increases will be based. It provides for seven five-year periods for royalty adjustment; and it provides that for each of these periods a given percentage of the price increment for lumber shall be added to the royalty. This percentage is twenty-five per cent for the first five years, and rises gradually to forty per cent for the last five-year period. The fourth of the accomplishments of the Royalty Bill is to re-adjust the rentals between the Coast and the Interior, and fix them for the whole period of the Act."—C. L.

DANGERS OF CELLULOSE

The precautions necessary in handling articles made of celluloid have been emphasized in the report of a committee appointed by the British Government to inquire into the subject. The committee recommends that all articles made of this substance be marked "Inflammable."

Undoubtedly the manufacture and storing of celluloid need to be brought under public control. Last year, a fire in Moor Lane, London, Eng., started by celluloid, cost the lives of nine girl workers. Not counting cinematograph films, of which enormous quantities are now in existence, hundreds of articles are now made of celluloid, and very often the users are ignorant of their composition. The marking of these articles "Inflammable" would call attention to the danger and lead people to take greater care in their use. Where large quantities are stored, almost as much care should be taken as with gasoline.

CARE OF MANURE

Among the farmers visited in the Prairie Provinces in the Agricultural Survey work, in 1913, not one was found to be giving any care to prevent the waste of barnyard manure. In Ontario, so often called the "Banner Province," 93 per cent exercise no special care to prevent waste. In the Maritime Provinces, greater care is taken, about 40 per cent of the farmers visited having either manure sheds or cellars for storing the manure. Ontario may well copy this leaf from the book of the Eastern farmer's operations.

Prevention is better than cure. Prevent loss of the manure already being produced and it will not be so necessary to buy the expensive fertilizers to build up the sick and worn-out soil. Prevent the loss of the liquids by using some sort of absorbent. Prevent loss from heating by piling and mixing carefully in flat piles, not too deep, and keep tramped.—F. C. N.

Co-Partnership Housing

Successful English Scheme by which
Every Man may Become Part
Owner of his Home

Every man who is doing useful work in society, provided he is thrifty, sober and industrious, should be able to attain to the ownership of his own home. Much of the dissatisfaction with housing conditions that exists at the present day, arises from the unsatisfactory relations between landlord and tenant. Discontent will continue so long as it remains true that the vast majority of people can only call the houses they live in "theirs" from month to month.

A man receiving a moderate salary finds it exceedingly hard to save the first few hundred dollars and, if he borrows money on his individual credit, may be charged too high a rate of interest to make the venture profitable. Even if he does succeed in acquiring his own home, he may be forced to leave the district through loss of employment and, perhaps, have to sell his property at a disadvantage.

To overcome these drawbacks, a scheme has been put into operation in England which has met with very considerable success in various places through the country. A society of tenants is formed, who subscribe the share capital, which is payable in instalments, and issue loan stock at a guaranteed dividend of 4 per cent. A tract of land on the outskirts of an industrial centre is acquired, and the land planned out as a whole, and in accordance with the hygienic, artistic and economic principles of scientific town-planning. As soon as sufficient loan stock has been sold, work is at once commenced on the construction of the houses. Expenses are materially reduced because the society is able to buy materials in large quantities. When completed, the houses are let to the shareholders at ordinary rents. The profits on capital are divided among the tenant shareholders, who, however, are paid in shares and not in cash.

When the shares are fully paid up, the members of the society collectively own their own houses. If any member is forced to leave the district, he may still keep his shares and suffers no loss of his savings. Another advantage of this system of collective ownership is that untidiness and carelessness are discouraged by the public opinion of the neighbourhood, since everyone is interested in the proper care of all the houses. Finally, it may be said that there is no more sensible or safe investment for people of small means, no better way of putting by something for a rainy day, than by acquiring, through a co-partnership scheme, an interest in substantial well-built house-property.—P. M. B.

Keep One Milk Record for Each Cow

Beginning of New Season Is Opportunity to Commence Good System Dairy Division Will Supply Forms

Within the next few weeks several hundred cheese factories will be opening, hundreds of farmers will be preparing to milk thousands of freshly calved cows. Logically this beginning of a new season is the time to commence keeping records of production of the cows separately. Just a knowledge of the total yield of milk from the whole herd may give the owner an idea of the average yield per cow, but that does not give quite enough information. There may be a thousand pounds of milk difference in the total yield of two cows for the season, which would be unnoticeable in the small difference in the appearance of their two milk pails daily. Often the difference is far more than a thousand pounds, yet all cows are lumped together, good, poor and medium, all alike, when taking merely an average.

Since keeping records of individual production many a dairyman has increased the average of his herd by fifteen hundred, and two thousand pounds of milk or more, because he has been able to detect the poor, unprofitable cows that masquerade as real dairy cows. On application to the Dairy Division, Ottawa, milk record forms and instructions are supplied free. Write to-day, and begin the new season right, with the object of keeping none but profitable cows.—C. F. W.

Is Carelessness to Blame for This?

Canadians Pay Heavily for Fire Protection and Insurance, Yet Suffer Great Loss.

Canada's average annual fire loss per capita for the last three years has been approximately \$2.90, and the number of fires 1.16 per 1,000 of population.

A comparison of Canadian and European conditions shows

	Per Capita	No. of Fires per 1,000
Canada, 1912	\$1.88	4.6
Hamilton	4.45	4.7
Vancouver	5.95	5.0
Calgary	3.47	3.3
Regina	6.66	2.9
Halifax	2.45	3.0
Toronto	1.95	3.0
Brantford	3.88	1.5
Winnipeg	1.05	3.7
London	8.85	6.8
Saskatoon		
Average	\$3.36	3.9

The value of the equipment used by fire departments in Canada is \$5,167,425, and of the buildings in which the departments are housed \$4,692,247. The annual expense for maintenance of fire brigade protection amounts to \$3,401,570.

If interest upon debentures and depreciation is included; the average cost per head of population of the communities protected by this expenditure of public money is approximately \$2.20 per annum. The annual direct expense of brigade maintenance is a tax upon the protected citizen of \$1.06 per annum. In 45 European cities from which reports were received, the average annual cost of brigade maintenance is 22 cents. In other words, the cities and towns of Canada are paying five times as much for public fire protection and five times as much for insur-

ance protection, suffer a fire loss five times greater than any corresponding cities in the Old World.

	Per Capita Loss	No. of Fires per 1,000
England, 1912	\$0.46	7.4
London	0.76	6.2
Glasgow	0.55	95
Birmingham	0.55	69
Manchester	0.57	57
Sheffield	1.26	67
Leeds	0.09	40
Belfast	0.15	62
Bristol	0.21	97
Edinburgh	0.42	47
Dublin		
Average	\$0.49	67

If this statement is carefully studied the tremendous annual drafts made upon the public directly and indirectly by fire will be apparent. Exclusive of any other consideration, such as that involved in the disorganization of business, the actual monetary cost amounted to over \$45,000,000, or \$5.63 per capita of the entire population of Canada. Hence it results that each man, woman and child, out of their earnings and surplus, is indirectly assessed 5 per cent on about \$112, or for each family of five persons, say \$560, for no other purposes than indemnity for fire loss direct and indirect.—J. Grove Smith, B.A., B.Sc., in *The Monetary Times*. (Selected).

Health First Aim in Town Planning

Massachusetts Conference Favours Individual Homes—Housing and Transportation Problems Discussed

That the town healthy, rather than the city beautiful, must be the first consideration in all town-planning projects was especially emphasized at the first Housing and Town-Planning Conference of the Commonwealth of Massachusetts, held in Boston in November last. The expressions of opinion from citizens of the State representing all classes of the community were unanimously in favour of individual houses in preference to apartments in large buildings.

The people of Canada could well take example from Massachusetts and make an earnest effort to place upon our statute books laws making it possible to improve housing conditions and to call a halt in the further construction of the abominable apartment house—another name for the tenement—and make it possible for our people to live in the individual home. As for town planning, we cannot commence at too early a date. There is not a village or town in the whole Dominion which has not faults in its planning, the rectification of which means for the ratepayer unnecessary taxation without accompanying benefits.

That the business men of Boston and the State should have taken such an active interest in town-planning problems augurs well for an early improvement in the cities of Massachusetts and should be an incentive to Canadian business men to take a prominent part in this movement. The betterment of housing conditions and the regulation of town planning is of great concern to the employer of labour, while the matter of planning roads and of transportation to and from the centres of business is of moment to all.—C. A. H.

HOW TO CONSTRUCT A POTATO PLANTER

(Continued from page 9)

the sets into the spout. A seat may be arranged directly behind the spouts for the comfort of those dropping the potatoes.

As soon as the potatoes are planted it is advisable to harrow the land so that any that are not deep enough may be covered. It is also advisable to harrow several times before the potatoes come up, the last harrowing to be just when the sprouts are appearing. The harrowing will kill weeds, and keep the crust broken to form a mulch to conserve moisture and warm the soil. In this way growth is encouraged and much time is saved in weeding of the potatoes after they are up.—J. F.

CONSERVATION OF COAL IN CANADA

The various systems of coal-mine leases and their effect in encouraging or discouraging efficient mining; the freight rates in Western Canada and their influence on coal distribution; the fuel problem in the Prairie Provinces; the utilization of lignites for gas production; the saving of slack by briquetting; and economical coking in such a way as to save valuable by-products like gas, ammonia, tar, and creosote, are problems of great importance in Canada's industrial development. These and other related questions are treated in a 212-page report, entitled *Conservation of Coal in Canada*, by W. J. Dick, M.Sc., recently published by the Commission of Conservation.

Two appendices are added to the report. The first gives a description of the principal coal-mine areas of Canada, showing their methods of mining, ventilation, haulage, blasting, etc., also the equipment and frequently the output. The second appendix describes briefly the by-product

FORESTRY AT CORNELL

The new forestry building at Cornell University, Ithaca, N.Y., is to be formally dedicated May 15th. The forestry department is a part of the New York State College of Agriculture and has a staff of five professors, who conduct the purely forestry courses, the allied subjects being handled by the teaching staff in other departments of the College of Agriculture and of the balance of the University. Courses are given in farm forestry, and men are also being trained for work as professional foresters. In connection with the dedication of the new building, a conference is to be held at Ithaca for the study and discussion of concrete forestry problems, at which a considerable number of prominent foresters from the Eastern States and other Canada have been invited to be present.—C. L.

coke ovens of the Algoma Steel Co., of Sault Ste. Marie, Ont.

The illustrations consist of 21 half-tone engravings, numerous diagrams, and two maps.

CAN THIS WASTE BE ELIMINATED?

A resident of Spencerville, Ont., recently sent to the editor of *Conservation* a sample of curled maple, suitable for fine cabinet work, of which five cords had been delivered to him in the form of firewood. Much of it was split in slabs reaching twenty inches in width, and all of it was of good quality. On previous occasions, the same gentleman has been sold cordwood consisting of large-sized bird's eye maple, wavy birch of fine grain, black cherry and butternut.

A somewhat similar waste of fine woods for inferior purposes was brought to our notice by a manufacturer of vehicles in St. Thomas, Ont., who showed us samples of waste pieces from his factory, of oak, ash, hickory and hard maple. Many of these pieces would be very suitable for tool handles, etc., but, through lack of a market, are obliged to be sold as firewood.

The cost of living in Canada has advanced 51 per cent since 1900.

Springtime Suggestions for Farmers

Seed Preparation.

During the leisure hours of winter a little extra time should be devoted to cleaning the seed grain. Two bushels of thoroughly cleaned seed will give better results than four bushels of uncleaned seed. Seed to be purchased should be ordered early. It may be found necessary to clean it again. Test the germinating power of all kinds of seed to be sown. Failures are often due to poor germination, not to the weather nor soil.

Examine your seed drill. If repairs are required, now is a good time to order and repair. Should a new drill be necessary, try a wide disc-drill.

Harrow

A spike-toothed harrow is one of the best implements for conserving moisture and fining the surface soil. One stroke with sharp teeth is as good, or better, than two strokes with dull teeth.

Ploughs

For spring work, use the short, wide mould-board and plough shallow, except when smothering couch grass. See that the coulter and share are sharp. A two-furrow plough for spring work is better than the single plough.

Roller

Some bolts may require tightening or some woodwork may need replacing. If purchasing a new one, examine the flexible, two-section roller. When using the roller, attach a set of harrows behind. They do good work together.

Machinery

Simply for want of repairing, many good machines are put on the scrap heap long before they should be discarded. A can of oil and a monkey-wrench applied in time will often save the price of a new machine.

Barn Yard

Clean out the manure before the snow is gone. If used for hoed crops, it may be spread direct from the sleigh or put in small piles about eight yards apart and spread early in spring. If there is danger of washing away, put in flat piles of about 20 loads each. If used for the corn crop, spread after ploughing. If used for the newly seeded meadows, spread immediately after harvest. When putting the manure in piles, use land plaster freely. It will absorb moisture and keep the pile from heating, which is very essential for the best results.

Fences

New fences or repairs should be looked after before the animals are turned out. Once the cattle get the habit of visiting fields that they are not intended to, it is very hard to restrain them.



(Cut No. 38)

Falls on Big Slide Creek, a tributary of the Skeena river. The photograph is typical of the water powers of the Skeena river valley.

B. C. WATER-POWER SURVEY

During the season of 1913, a party of engineers of the Conservation Commission examined the water power situation in the district tributary to the watersheds of the following rivers in interior British Columbia: Skeena, Kispicox, Bulkley, Morice, Te'kwa Zymoetz and Kitsumgallum

Firewood

Cutting firewood in summer, when it can be done much easier and cheaper in winter, is a waste of valuable time. First clean up old logs, rails, broken boards, etc., around the buildings. Perhaps somewhere on the farm there are two fields that could profitably be made into one, and the old rail fence between them converted into good posts or into fuel. In the wood lot there may be dead or fallen trees that should be removed and made into firewood before the live trees are touched.—J. F.

rivers. The season was an unusually wet one and the country traversed very rough with consequent poor trails, that in many instances required clearing, so that progress was necessarily slow. In spite of this, twenty-six streams in all were examined and twenty-eight power sites reported upon.

TRENT WATERSHED SURVEY

That practically all the pine in the Trent valley has been removed, that the whole area has been burned over at least once, and that as a result of fires, 150,000 acres are practically a desert, are conclusions set forth in a report entitled *Trent Watershed Survey*, recently published by the Commission of Conservation. The Dominion Government has a special interest in this particular region, as the capital invested in

Conservation of Wild Life

Canada's Opportunity

That the U.S. Congress, about a year ago, passed an Act for the protection of migratory birds which is even more beneficial to Canada than to the United States, and that the Dominion Government can assist in making this law permanent and effective by negotiating a treaty on the subject, were important points brought out by Mr. William S. Haskell, Counsel of the American Game Protective Association, at a recent address at the Fifth Annual Meeting of the Commission of Conservation. The defenders of state rights are up in arms against the Act, and there is danger of this far-reaching measure being set aside on the ground of unconstitutionality. Should a treaty be negotiated, however, this would be impossible, as no treaty can be annulled by judicial procedure. Hence, the Dominion Government should use its influence to persuade the British Government to negotiate such a treaty and thus meet American reformers half-way in their endeavours to protect North American wild birds.

Game Sanctuaries

In many parts of the United States, game sanctuaries have now been established, where no shooting is allowed, except of vermin, and where all wild creatures are free to live and propagate unmolested. The American Game Protective Association has established, near Cape Cod, Mass., a six-thousand acre game farm, where quail, grouse, heath hens, pheasants, partridges, wild ducks, turkeys and geese, have been successfully raised. Game birds are sent out to members of the Association who will undertake to rear them in refuges, enable them to increase, and, in due time, release them so that the covers may be restocked.

The Trent canal amounts to upwards of \$10,000,000, and the removal of the forest cover has an important effect on the water supply. For the most part the land is non-agricultural, and disastrous consequences have followed its settlement by farmers. Enough second-growth timber is present, however, to warrant a policy of conservation, which should be carried out under Dominion, Provincial or Municipal control. A fire-protective organization should be perfected, and the whole area carefully administered with a view to perpetuating the forest resources.

The report, embodying these conclusions, was compiled by Dr. C. D. Howe and Mr. J. H. White, of the Faculty of Forestry, University of Toronto, and has an introductory discussion by Dr. H. E. Fernow. It consists of 126 pages, and is illustrated with 22 half-tone engravings, and 3 maps.