

# Conservation

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

VOL. VIII

FEBRUARY, 1919

NO. 2

## Value of Stall and Yard Manure Compared

Experiments Show Clearly the Advantage of Using the Former

During the war very high prices prevailed for commercial fertilizers. Even then it has been almost impossible to obtain some of these materials, and prices are still high. Farmers should, therefore, pay more attention to farmyard manure. It could be produced in as large quantities as possible and when produced could be applied in a way to eliminate loss and waste, or at least to reduce these to a minimum. This involves the adoption of intelligent methods of handling. Experiments conducted in this country at our experimental farms and agricultural colleges prove that where at all practicable the best method is to haul the manure to the fields as made. An experiment along this line extending over five years and recently concluded at the Ohio Agricultural Experiment Station, shows decided profits in favour of the above method. The rotation followed was corn, wheat, clover. The manure was applied on the land before ploughing for the corn, more manure was applied for the wheat or clover crop. Eight tons per acre of fresh stall manure was spread on the sod in December and January, while on each day an equal amount was placed in low flat beds in the open to be spread in the spring immediately before ploughing. The distinct comparisons between stall manure and yard manure were that what was called "stall" manure and "yard" manure demonstrated that stall manure was an average gain of 4.1 bushels of corn, 1.3 bushels of wheat and 490 pounds of clover hay per acre from the stall manure over the yields from the yard manure. Valuing the crops at the prices prevailing at present the gain amounted to \$11.60 per acre, or, in other words, the fresh stall manure applied directly to the land was worth \$1.45 more than yard manure which had been piled and applied in spring. This gain was made without expense. Indeed there was less handling of the manure. Was it not worth while?—F. C. N.

The Canadian Department of Fisheries and the United States Bureau of Fisheries are planting chinook salmon eggs from the Pacific coast in the St. Lawrence river system.

Two cars of flax seed have been shipped from the Tilbury district in Ontario to Belfast, Ireland.

## To Secure British Timber Trade Dealers Must Meet Market Demands

Active Competition with Timber from Northern Europe Makes it Necessary for Canadian Dealers to Overcome the Scant Size Difficulty

An authority on the timber trade, in referring to Canada's opportunities for obtaining orders for reconstruction work in Europe, says that the greatest difficulty which manufactured lumber from North America has to overcome in the Old Country is the problem of scant size.

"The 'scant size' difficulty," he continues, "arises when we deal with scantlings, dimension stock, door stock, and floorings. For instance, a British-made door manufactured from 2-in. Swedish or Russian stock measures 1 3/4 in. in thickness in its final finished state. No 2-in. door stock manufactured on the Pacific Coast will give a finished door 1 3/4 in. in thickness. The rules and customs governing the manufacture of lumber generally in Canada and the United States allow a greater difference in the actual and nominal sizes than obtains in Sweden and Russia.

"As far as British Columbia is concerned, the bulk of the lumber heretofore imported by the United Kingdom has been in the form of large

(Continued on page 8)

## Multiple Production As Applied to Coal

Efficiency Can be Doubled, if not Tripled by This Means

There is no apparent reason why fully co-ordinated development should not look toward a fairly complete recovery of at least the leading by-products in coal, and this prospect would definitely entail the doubling, if not the tripling, of the fuel efficiency derivable. This means that our present annual coal output could be made to more than double its service, or, accepting the current service requirement as a standard, that less than half the output can do the present work and in addition make heavy contributions to the supply of fertilizers, motor fuel, and chemical products. The aggregate loss, on the basis of this very modest estimate, runs well above a billion dollars a year, or over \$10 for each inhabitant of the United States. Of such measure is the average man's pecuniary interest in the full utilization of coal.

Improvement in coal utilization can not be relied upon to come from in-

dustrial stimulus alone, but must be brought into effect as the result of public interest in the matter. The means for starting toward this accomplishment lie in the direction of enlarged municipal gas plants, which will handle all the coal needed by the community with the production of solid fuel, gas, and the by-products, ammonia, benzol, and tar.

Through the principle of multiple production, therefore, coal can be forced to render up its full quota of service. This is a new economic force, one scarcely recognized as yet as a principle which may be constructively applied. Yet the principle of multiple production has been gaining headway for years, and by means of it the multiplying needs of man are being met from practically a stationary range of raw materials. The rôle of multiple production is rapidly enlarging; it represents a principle that must come into play more and more to relieve the strain falling upon natural resources and transportation. Through the agency of chemical knowledge it serves to create a divergence of products, each the starting point of a second diverging series. The principle of multiple production is peculiarly applicable to coal and oil; only by the use of this principle, brought into effective action under the guidance of a constructive economic policy, can adequate value be extracted from these power materials.—C. G. Gilbert and J. E. Pogue of the Smithsonian Institution.

### WHY IMPORT WEEDS?

The suggestion that seeds of the Flanders poppy should be imported to Canada is carrying sentiment to a dangerous extreme. The plant is, after all, only a beautiful weed, a common pest in France. It would be wise to take thought and to learn from a former experience of a similar nature. The blueweed, or Bishop's Curse, was imported several years ago, presumably for garden purposes exclusively, but it is now a noisome pest in portions of eastern Canada. The thought of the Flanders poppies "over there" calls forth feelings of national pride. Bringing them over here will destroy their sentimental value for Canadians and will add another to our already long list of plant nuisances.

## Housing Reform and the "Black Spots"

Conditions Cast Discredit on Civilization—Humanity More Important than Material Wealth

The important bearing that better housing and town-planning have upon the physical condition of our people, cannot be too often or too strongly emphasized. As far back as 1908, the writer stated that:

"There are also many other lines upon which improvement can be made, such as the housing of the poorer classes, preferably in detached houses or cottages, the preventing of overcrowding, and I would go so far as recommending legislation to prevent, under certain conditions, the erection of the tenement. They are a damnable architectural invention, and their erection should be carefully considered. Space is what we require, so that fresh air and sunlight may be enjoyed by all."

We may consider the question from different standpoints, the architectural, the social, the economic, but the all-important one is that of the health of the individual and all that health means as the important factor in national efficiency.

It is a reflection on our governments and lawmakers that it has taken the great world war to stir them into activity on these and other questions which they had never seriously considered heretofore, because they failed to realize that health was the nation's greatest asset. The people themselves constitute the nation's wealth—not the horses, cattle and sheep, nor yet the raw materials, nor the products of agriculture, but the healthy men and women, the physically fit, these give worth and value, these increase output and, when the test of battle comes, win the victory.

Severe as the test and strain of the last four years have been, there are greater difficulties to be met if we are to rise to the problems of a lasting world peace—*mundus* must be the first consideration of governments—man, physically, socially and intellectually, must be their first and constant care. We must maintain a high standard of national efficiency by the adoption not only of wise measures, but we must support them by substantial financial assistance, accompanied by a central state authority to control, advise and co-ordinate. One of these measures must be sanitary houses, reasonable in cost and in healthful environments.

(Continued on page 10)

## Billboard Nuisance Should be Regulated

In Most Cities Billboards Defigure the Streets and Are Not Equitably Taxed

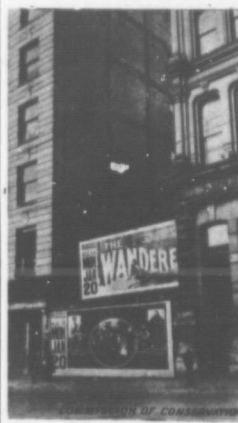
An objectionable feature in our Canadian streets is the rapidly increasing number of billboards. This is evidently a cheap and, therefore, profitable form of advertising for some purposes. It is, however, profitable only to those directly interested, while its drawbacks are many. The more prominent a location the quicker it is seized upon for billboard use. Vacant lots on our business streets are quickly transformed into advertising hoardings. For the use of the frontage the owner of the land in some cases receives a small return, but, for municipal taxation purposes, little is contributed. In one eastern city, a basis has been arrived at for the assessment of these billboards. The property is assessed as vacant land, with the exception of approximately twelve feet of the frontage occupied by the construction and its supports. This portion is assessed as occupied land and the value of the boards is assessed for general taxes and also for business taxes. The low value of the billboards makes the return from these taxes of little importance.

The value for publicity purposes of these prominent locations is regulated by the number of passers-by. In business districts, high rents are paid by tenants for stores with windows in which goods may be displayed for advertising purposes. The cumulative advertising value of these display windows attracts the public, and forms what is termed the business district. This business district consequently becomes the heavy tax-paying area. It is unfair, therefore, that such discrimination should be made for taxation purposes between the value of display windows and billboard advertising for advertising purposes.

Billboards are also to a large extent used to hide from view unsightly masses of debris and rubbish, this being deemed cheaper than cleaning them up. Danger lurks in these places, not only from fire, due to lighted matches or cigar and cigarette stubs being carelessly thrown among the litter, but also from the fact that they are frequently made use of as sanitary conveniences.

Our cities are prepared to encourage the erection of handsome buildings and business blocks, but no provision is made in the city-by-laws for their protection from billboard neighbours. The writer has in mind the erection of a substantial eight-storey business block, with an attractive appearance. The building was hardly completed before a double-deck billboard was erected alongside. Without the latter a neat little open space might have been left.

In the interest of civic pride and beauty these billboard structures should be thoroughly controlled if not eliminated. The cost, from the loss in taxes would be infinitesimal, while the appearance of the city streets, if one may judge by those of Westmont, Que., where they are controlled, would be immeasurably improved.



BILLBOARDS ARE UNSIGHTLY  
CUT NO. 181

## To Secure British Timber Trade

(Continued from page 7)

timbers of the grade known as 'merchantable', for heavy structural work, or for re-sawing into any special size; and in the case of large timbers scant size does not occur.

"If, however, British Columbia is to enlarge her timber trade with the United Kingdom then a range of all grades and sizes including merchantable (but not including the very lowest grades, such as 'culls' and No. 2 common) must be dealt in. In other words, practically the whole of the log, when manufactured into timbers, boards, dimension stock and so on, must be exported.

"The United Kingdom normally imports something over 2,000,000 standards (4,000,000,000 ft. B.M.) annually. It is thought by competent authorities overseas that Northern Europe will be able to supply nearly all the rest of Europe's softwood lumber requirements for many years except perhaps for the next two or three years of reconstruction.

"Thus, we in Canada are in competition with a source of supply which manufactures lumber in those sizes and forms exactly desired by, and customary with, the trade overseas. The Northern European woods are also in great favour there on account of their close texture and mild working qualities, and excellence of manufacture. For these reasons, I do not think Canada can count on the United Kingdom willingly accepting Canadian standards in sizes, etc. Even if Canada manufactured her lumber exactly to suit this market, we should still have to meet the Northern Europe c.i.f. prices.

"If Canada can deliver timber in the various grades sawn to British standards at Swedish prices, then she can do business in a broad and general way. But can Canada do this? It is quite probable that there will be a good demand, for the next two or three years in Europe, for lumber from any source, which Canada can surely share in, but it will be temporary.

"Price and conformity with the

customary standards will govern the permanent trade. Strengths of various timber are not considered in Europe to the same extent as in Canada or the United States.

"Suppose for a moment that the British timber trade, and the British architects would agree to accept Canadian lumber in its customary 'scant sizes'. It would mean that the British timber merchant would have to carry stocks of two distinct actual sizes (Northern European and North American) though both would be nominally of similar size. It seems to me that, if Canadian lumbermen want a substantial share of the British trade, they must (1) deliver their goods at prices which will compete with Swedish and Russian; and (2) manufacture to the customary sizes demanded.

"Canada's ability to deliver her lumber in Great Britain at Swedish prices is largely dependant on freight charges. Obviously, freights from Canada, whether from Atlantic or Pacific ports, will always be higher than from the Baltic ports or from Archangel, so that the Canadian lumbermen's price at the mill must be lower than the Swedish mill price, but whether the difference in the prices of the commodity will be sufficient to overcome the difference in freights will be duly determined by the amount of tonnage offering freely in the market.

"Personally, I think we shall see in about two years time freight rates low enough for Canada to compete with Sweden and Russia in the British market, provided Canada will manufacture to the requirements of the British market."

## HIGHER STANDARD FOR REAL ESTATE BUSINESS

The land business has been proverbially a business on a low ethical plane. It is being put on a higher plane, and there are many conscientious real estate men who are rendering a social service of a high order in the work; yet there are many dishonest ones still active, and it is necessary that all right-minded people use every effort to put the business of selling land and of colonization on as high a plane as the best mercantile business, which finds a profit in protecting the consumer. Various associations of real estate dealers are engaged in praiseworthy efforts to expose dishonest practices and to encourage a right professional spirit. The writer has recently made addresses before gatherings of real estate men in Chicago, Milwaukee and Minneapolis, and has taken for his subject "The real estate business as a profession." Everywhere he has been gratified by the response to his appeals for higher standards. This promises much for the future, because the real estate man must always play a large rôle in the settlement of the land; and, if he is competent and right-minded, he can perform services of a very high order.

In addition to private associated efforts, it is necessary to have public activity. The honest real estate dealers must separate themselves from the dishonest ones and encourage every effort to infuse into the real estate business a true professional spirit.—R. T. Ely.

## Reforestation As a Post-War Policy

Great Britain and France will Undertake to Renew Their Forests. Attractive Long-time Investment

An important item of post-war policy in both France and Great Britain will unquestionably be an extensive programme of reforestation. Without the products of the plantations of France, the production of the war would have been handicapped to an extremely serious extent. It is hardly putting it too strongly to say that, had it not been for the French forests, the war could scarcely have been won—certainly not without an incomparably greater effort and much greater loss of life than has proved necessary. The limited timber supplies of the British Isles have also proved so vital a factor in connection with the home situation that plans are already being laid for a very extensive programme of reforesting waste lands at state expense or by state aid.

The economic importance of Canada of her great forest areas is no less apparent. The value of our primary forest products exported from the country during the past year totalled some \$200,000,000. The pulp and paper industry exports products valued at some \$85,000,000 annually. The importance of perpetuating a resource that assists so largely in redressing our unfavourable trade balance can scarcely be over-emphasized.

The first and most vitally necessary step toward handling our forests as crops, rather than mines, is, of course, the prevention of fires. Great progress has been made in this direction during recent years, though much still remains to be accomplished.

The next step should be the adoption and strict enforcement of improved cutting regulations in connection with all logging operations on Crown lands. The situation in this respect is least satisfactory in the province of Ontario and on Dominion licensed timber lands in the west.

Another step, toward which extensive plans should soon be made, is the reforestation of the more accessible areas of non-agricultural lands, of which the forest growth has been so completely destroyed by successive fires that regeneration of valuable species by natural means can not take place for a very long period of time, if at all. Such a policy of reforestation on Crown lands must, as a rule, be carried out by governmental agencies, on account of the long time element involved before returns can be secured. Both Ontario and Quebec have provincial forest nurseries, from which many million young trees have been supplied to farmers and other private interests, including pulp and paper companies and, to a much smaller extent, to lumbermen. The forest revenue from Crown lands in both these provinces is so large that the annual expenditure of a moderate proportion of it on reforestation of denuded Crown lands would appear both feasible and logical. Experience indicates clearly that such a project can be made attractive from the viewpoint of a long-time investment.—C.L.

**Commission of Conservation  
CANADA**

Sir CHARLES STURROV, K.C.M.G.

Chairman

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 the left side of the paper only, for convenience in clipping for reproduction.

OTTAWA, FEBRUARY, 1919

**CLOVER AS SOIL IMPROVER**

Common red clover seed is very high in price this spring. This means that many farmers will be tempted to seed down less of their farms to clover or to skip the seeding where it is being done. A farmer cannot afford to skimp his clover seeding.

Twenty-two years ago a very interesting experiment was conducted at the Central Experimental Farm, Ottawa, to determine the value of clover as a soil-improving crop. Plots were sown with wheat, barley and oats. Some plots were seeded to mammoth clover and some were left unseeded. On the plots seeded, the clover grew well and was ploughed down in the fall. The following spring, 1898, the plots were sown with oats.

The following table shows the increase on the clover seeded plots:

**YIELD PER ACRE IN BUSHELS OF  
OATS, 1898**

	Without With	clover	Gain
Wheat	37	56	19
Barley	37	44	7
Oats	44	55	10

In 1899, these plots were sown to barley. The effects of the clover were still evident both in the appearance of the crop and in the yield.

**YIELD PER ACRE IN BUSHELS OF  
BARLEY, 1899**

	Without With	clover	Gain
Wheat and oats	25	40	15
Barley and oats	28½	33	4½
Oats and oats	33½	44½	11

Tests conducted at two experiment stations in the United States extending over periods of 25 years or more show that crop yields were maintained in four-year and five-year rotation where clover formed a part of the rotation and acid phosphate and muriate of potash only were used. No nitrates or manure were applied, and all the crops were removed from the land.

Every farmer should carefully consider these remarkable results before he decides to materially reduce the amount of clover seed sown this spring.—F. C. N.

**POWER TRANSMISSION LINES**

Transmission lines in Canada operate under many different voltages up to 110,000 volts, says the report on *Electric Generation and Distribution* soon to be published by the Commission of Conservation. There are only

three systems using over 100,000 volts, the Niagara system of the Ontario Hydro-Electric Power Commission, the Shawinigan Water and Power Co., and the Montreal Light, Heat and Power Consolidated on the line from its Cedars plant to Massena, N.Y. Lines of various voltages from 10,000 upward aggregate 5,490 miles and are as follows:

10,000 to 30,000 volts	aggregate	2,428 miles
30,000 to 99,000 volts	aggregate	2,485 "
100,000 volts and upwards	aggregate	577 "
		5,490 "

The cost per mile of the different lines naturally varies with the mode of construction, size and number of conductors and voltage for which constructed. For voltages of from 10,000 to 50,000 volts, the figures given show a wide variation of from \$600 to \$11,000 per mile, while on 100,000-volt lines and over, we have from \$7,500 to \$14,000 per mile.

Iron wire transmission lines have been used in many instances lately, owing to the very high prices of copper and aluminium. The use of iron wire seems well adapted for short extensions and rural distribution, but in some cases, it has also been used on fairly long lines. In a recent article in *The Electrical World*, Mr. M. D. Leslie gives examples of 22,000-volt iron transmission lines, one of them 31 miles long, for relatively light loads. Although the design and operation of these lines involve certain principles different from lines of other materials, they are most satisfactory where light loads are to be carried comparatively long distances and have been found to return a fair rate on the investment, whereas copper, at present prices, would have debarred construction.

**CENTRAL COKING PLANTS**

Where a coking coal is obtainable at a reasonable price, the establishment of central coking plants near large centres of population seems to offer the maximum of advantage. Such a plant would produce a coke or artificial anthracite, gas for cooking or heating entering into the manufacture of a whole series of valuable substances, benzol, toluol and other raw materials for explosives, aniline oil, whence aniline dyes are manufactured, and ammonia liquor from which is produced sulphate of ammonia, a valuable fertilizer. The coke thus produced can be used for all purposes for which anthracite is used. It requires a little more care in firing. Furnaces burning coke require a somewhat larger fire-box than for hard coal.

Mr. W. J. Dick estimates that: "Such a plant is justified in the city of Toronto to supply 300,000 tons of artificial anthracite per annum would not only provide such fuel cheaper than anthracite, but would supply 1,500,000 M. cubic feet of gas at a cost of 10 cents per M. at the plant; again, based on pre-war prices for coal of plant and bituminous coal, the

profit on the undertaking would be considerably more than 50 per cent per annum."

Whether such coke plant be municipal or private-owned, it offers what is, at the present time, the most promising solution of the fuel question for Saskatchewan, Manitoba, Ontario and Quebec.—James White in *Fuels of Western Canada*, published by the Commission of Conservation.

**ESSENTIALS OF  
GOOD ROAD-MAKING**

Road-makers are forerunners of civilization. It is important, therefore, that we should know where, when and how roads should be constructed. Men who possess all of these qualifications have never been very numerous in Canada. The greater proportion of our existing rural road systems have been designed and constructed by farmers who had no special training for such work. Fortunately, these conditions are rapidly changing. The counties, the provinces and even the Dominion are assuming responsibility for many of the more important highways. But no matter what authority is responsible for road construction and maintenance it is of first importance that the work should be done intelligently as to design and materials used.

The first and prime essential of any good road is surface drainage, sub-surface drainage and side drainage. When finished, the road must shed water. To do this, it must be crowned from ¾ to ¾ of an inch to the foot depending on the wearing surface, and must have an impervious or water-proof covering. There must be an unimpeded slope from the crown to the gutter or to the side ditch. The gutters or side ditches should have a fall of at least 5 inches per 100 feet, and, if they are earth ditches, they should have 6 inches per 100 feet, and free drainage at frequent intervals into natural creeks, channels or, in the case of a city with a sewerage system, into the sewers.

To drain away the sub-surface water and prevent it softening the foundation, it is well to lay two lines of tiles.

The second essential is a good foundation, and this is especially necessary for roads where the loads are concentrated on small areas.

Because macadam roads are more expensive in first cost than gravel roads, they should be built very carefully. The materials in the order of their excellence are—trap rock, tough granite, creek, tough limestone, ordinary limestone, tough sandstone.

Paving brick, concrete, crushed stone of various kinds, limestone, trap rock, granite, sandstone, creek, crushed gravel, bank gravel, sand and loam mixed with various bitumens such as crude oils, coal tar and asphalt, are used to make good roads or to improve them to some extent at least.

The choice of the material for any particular stretch of road will depend upon, first, the character of traffic it must sustain, second, the taxable valuation of the assessable property, third, the available suitable material. Where auto and horse vehicle traffic is

heavy, as it usually is around larger cities, cross-tied wooden block, brick block, concrete and bituminous bound macadam are the pavements to be selected. Property values will nearly always warrant the expenses under such circumstances.

The building of good roads requires intelligent use of the construction materials. To use them carelessly or ignorantly is worse than wasting them, because the taxpayers are defrauded, the road will not wear nor give satisfaction, and the materials out of which the road was constructed are discredited.—W. J. D.

**Incandescent Lamps  
for Street Lighting**

Careful Handling Adds to Life of Lamps  
—Cost of Lighting

Incandescent lamps, particularly since the advent of gas-filled lamps, have been replacing enclosed arc lamps for street lighting, says the report on *Electric Generation and Distribution* soon to be published by the Commission of Conservation. According to the report, enclosed arc lamps are still used in 73 places. The prevalent size of incandescent lamps is 100-w., while lamps from 25 watts to 1,000 candle power, both tungsten and gas-filled, cover the range found in use. In a series of articles in *The Electrical World*, Mr. James A. Cravatt gives very good data on street lighting, taking up the general principles, lamp ratings, relative cost, etc. He proves that, for street lighting, only two illuminants are to be considered at present, namely, the gas-filled incandescent and the magnetite arc lamps. The operators of certain small plants have indicated their prejudice against gas-filled lamps for street lighting, the reason given being that of short life.

A study of the situation seems to indicate that, as this complaint only comes from the smaller plants, the cause of this short life is, in all probability, improper regulation, i.e., too high amperage or voltage, the operator not being provided with proper station instrument to govern operation. As against this prejudice, may be cited the case of a small town in British Columbia provided with proper instruments, where rough tests of gas-filled lamps demonstrated that a very long life could be obtained by running them slightly under voltage.

The rates or charges for street lighting show much variation in different places. Some of the higher rates per lamp per arc are: luminous or magnetite arc, \$95; enclosed arc, \$90 to \$125; 100-w. lamp, \$48; 300-w. lamp, \$75. Some of the lower rates per lamp per arc are: luminous or magnetite arc, \$46.51; enclosed arc, \$40; 100-w. lamp, \$3.30; 400-c.p. lamp, \$8.40; 1,000-c.p. lamp, \$50. In a number of places, the street lighting service is charged on the meter rate at so much per k.w.h.

Six trawlers are operating in Canada, four on the Atlantic and two on the Pacific.

Birds make agriculture possible. Protect them.

## Making the Home Safe For the Homemaker

Defective Electric Wiring a Constant Menace and the Cause of Much Loss

Every man desires to make his home the safest place on earth. Nevertheless it is a tragic fact that thousands of fatal accidents occur in households every year, simply because the homes themselves, or the appliances used in them, are unsafe. Defective electric wiring is one of the commonest causes of these fatalities. As a result of careless, inefficient, or cheap installation of electric fixtures, many homes are in constant danger of destruction by fire. Worse still, the inmates of these homes are exposed to danger of serious, if not fatal, electric shocks. Electric wiring should only be done by competent and conscientious electricians. If workmen possessing these qualifications are not obtainable, it is better to stick to kerosene lamps, dirty and dangerous though they be.

But even when wiring is properly done it is essential that householders should know how to avoid dangers that are inherent in the use of electricity in the homes. The following quotations from a circular issued by the United States Bureau of Standards are of value in this important particular:

"Portable wires to lamps, pressing irons, fans, and other electrical devices used about the house can not of course, be either out of reach or guarded by exterior metal covers . . .

Portable wires in general, impose a greater shock hazard than other parts of the electrical installation. It is largely on account of such wires that the grounding of circuits is so necessary and that the use of sufficiently low voltages for interior wiring is essential. . . . A satisfactory degree of protection is, however, provided by the use of heavy fibrous covers over the insulating coverings of portable cords, and, where cords are used only as pendants, by placing them sufficiently high and making them sufficiently short so that they cannot be much handled or moved about.

The deterioration of such cords, varying with the moisture and the amount of handling to which they are subjected, should be very carefully watched and when an abrasion of the protective covering is noted, the conditions should be promptly corrected. If the cord is very much bent or kinked in handling, there is also the possibility that some of the cord strands will be broken and later pierce the insulating covering and the outside protective covering, thus exposing these almost invisible strands to the contact of persons and imposing a shock hazard on the users. . . . Where the surfaces are very damp and especially where the air may be moist with steam, as in bathrooms, kitchens and laundries, the conditions are especially bad for the deterioration of the cord as well as for the severity of the shock in case the cord is abraded or otherwise injured. For this reason, cords should have special waterproof coverings where used in laundries, bathrooms, and similar places and, in general, the floor on which users stand in such places should be covered with



Cut No. 182

### AVOIDING ELECTRIC SHOCKS

The illustration shows the possible danger from shock by the passage of electricity from the metallic, ungrounded fixture C (see insulating ring at base of fixture A), through the body to the grounded water faucet B. Leakage from defective electric appliances is especially dangerous in bath rooms, toilet rooms, kitchens, laundries, etc., because of the frequent dampness of these rooms and the exposed plumbing. If at all possible, it is advisable to have the electric lights in such rooms placed out of reach, controlling them by wall switches near the entrance and well away from all plumbing or other grounded fixtures. It is always dangerous to handle electric switches or appliances when the hands are wet, or even moist.

dry wood, rubber, or other insulating material, and caution observed in handling the cord.

"The use of such cords with portable devices by persons while in bathtubs, or who are likely to touch laundry tubs, kitchen ranges, or other grounded objects, is particularly dangerous. . . . Accidents under these circumstances frequently prove serious or fatal."

### Housing Reform

(Continued from page 7)

While striving to build improved homes in proper localities, we must not forget the "Black Spots" in our cities, where the death rates are high. It is true we work to eradicate these in time by town planning, but it is imperative for the sake of those groveling in the "Black Spots" that we do something to let in daylight and fresh air, and that something at once.

The problem of existing insanitary areas can not be considered before the erection of new dwellings, but both must be dealt with if we are to immediately grapple with the many health and social problems of what are known as slums. We strongly contend that consideration be immediately given to these insanitary "Black Spots" which are the centres of high death rates, due to density of population and all the evils which accompany it. "The greater proximity of man to man, the greater is the mortality" is an axiom laid down by Farr, which finds confirmation by every health administrator.

These "Black Spots" are the centres of tuberculosis and infantile mortality. They are the malignant tumors of

social evils; there, families are huddled together in one or two rooms each, in the tenements. Neither the health visitor, the social worker nor the physician can do much material good whilst the sad conditions found there continue to exist. The united efforts of all these uplifting agencies can do very little material good, unless first man's environments are improved. Pause to consider—place a good healthy man or woman in the evil environments of these "Black Spots". Compel him or her to breathe its vitiated atmosphere, eat and sleep in its dirty and foul rooms and live day in and day out in the company of those condemned to reside therein, and then remember that, not all your social workers, sanitarians, nor the numerous array of those striving to improve him, could avail much to prevent his downfall, unless at the same time, the environment itself is improved. What then shall we say of those who, from their birth, know nothing better and have breathed nothing purer, brighter or more uplifting than the air in these "Black Spots"?

Reader, ask yourself the question: If it were my misfortune, through financial stress, to be compelled to reside in one of these "Black Spots", what would be the effect on my physical and moral condition?

After considering the answer, and in view of your reply, then strive for an immediate improvement of the housing conditions in your locality or the nearest "Black Spot". If you do, then your community life will be improved and ennobled and each province will rise to a higher standard of citizenship, and, e'er long, Canada will be moving forward to attain a

higher standard of national efficiency of which she will have every reason to be proud.—C. A. Hodgetts, M.D.

## Cutting Forest So As To Perpetuate Crop

Conservative Estimates Made For Forest of British Columbia

To maintain the forest capital intact the annual cut must not exceed the annual growth. In British Columbia, it is very much less than the amount which could be cut without endangering the productive capacity of the forest. British Columbia includes a large area and contains so many different site classes that it is difficult to make anything more than a rough estimate of its growth. Moreover, the probable loss from fires must be considered. Again, where natural regeneration is depended upon for reforestation, all degrees of restocking occur. Fully restocked areas are the exception rather than the rule. Also, a certain percentage of the area forested with merchantable stand contains mature and overmature timber where the decay approximately offsets the increment.

Selected areas on the coast that were fully restocked have been found to produce an annual increment of 1,000 board feet per acre in forty years growth. Obviously, this figure is much too high for a general average even for the coast where the rate is exceedingly high as compared with the interior. Taking the foregoing factors into consideration, it has been assumed that the average annual increment might be estimated at 100 board feet per acre, over approximately 50,000,000 acres of comparatively accessible timber-land, under reasonably effective protection from fire. This assumption will give 5,000,000,000 board feet as the total average annual increment for British Columbia, and, consequently, this amount could be cut annually without endangering the present forest capital. This is approximately five times the actual annual cut. The results of the investigations undertaken by the Commission of Conservation show that there is 95,580,000 acres capable of producing merchantable timber, but a large part of this area is commercially inaccessible at the present time. With the development of transportation lines, large areas, especially in the interior, will become more accessible. On the whole, therefore, the estimate of 5,000,000,000 feet is considered conservative.—From "Forest Resources of British Columbia", shortly to be published by the Commission of Conservation.

### STICKING TO ONE VARIETY

"Previous to taking up illustration work with the Commission of Conservation in 1917, I was sowing a mixture of different kinds of oats, but since, I have sown American Banner. I find that I have increased yields and my crop is more profitable than it previously was."—Extract from report received from farmer conducting illustration work for the Commission of Conservation, in Dundas county, Ont.