

Conservation

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Instructive Town-planning Exhibition

Demonstration of Economic and
Sanitary Importance of Wise
Direction of Cities' Growth

Perhaps the most interesting, certainly the most educating, feature of the City Planning Conference held in Toronto last month was the Town Planning Exhibit.

Through the efforts of the Commission of Conservation there were gathered together exhibits from some two hundred cities and towns of Canada, Europe, the United States and Australia, representing every phase of the subject from town-planning proper to the disposal of town refuse.

By means of the exhibits the public were enabled to understand all that is meant by "town planning" and its bearing upon the life and health of the town dweller. Never was there a better demonstration that "town planning" means infinitely more than mere beautification.

That Canadian towns and cities are alive to the importance of all that appertains to their betterment and their mutual progress was quite evident. Among the more prominent features may be mentioned the plans for greater Calgary and greater Berlin, Ont. The plans of Toronto and Saskatoon also showed that a careful study had already been made by these two cities of an area far beyond their present limits.

As regards the question of harbour improvements the plans of Montreal, Halifax, Toronto and St. John, N.B. were the most advanced, fully setting forth what can be done in this phase of town planning where organized effort is supported by government aid.

It was quite apparent that the subject of suburban development upon lines of the garden city movement has taken hold of private, if not of municipal, corporations, for there were many examples of estate development equal to those of Great Britain or Germany. Evidently the real estate man realizes there is a more profitable way to lay out land than upon the "grid-iron" principle. That this is a fact was evidenced by the exhibits of the Canadian Northern railway and of the Borden Estate, near Ottawa.

In the matter of parks and

Eradication of Slums is World's Greatest Problem

Legislative Foundation Needed—Abolition of Poverty the Question
for the Twentieth Century

"One hundred years ago Macaulay said that the time would come when one-half of the population of the United States, after getting their breakfast in the morning, would not know where the next meal was coming from. That is a condition which will come if matters are left to themselves to proceed as they have proceeded at other times and in other ages, and in other countries. History will repeat itself unless something is done to prevent it, and I put it to you that the problem that is up to the intellect of this twentieth century is whether we have brains and capacity enough to free ourselves from the prejudices and the shibboleths with which our minds are encumbered, and grapple with these present problems so that society shall control its own destinies, and avoid the evils which have dogged the footsteps of progress in the past.

"You, perhaps, are not called on to deal directly with the question of economic policy, but you must necessarily study the economic condition under which your work is to be done. You can give us what we want on the technical, the local and the municipal side. You can give us the frame work into which the ideal conditions, when discovered, are to be fitted. As to the answer to the question which I have propounded, there is in my own mind no doubt that it is impossible to give any single answer to the question. No one theory explains the fact. It is a composite problem; it requires a composite answer. So far as the physical questions involved are concerned, it is beyond a doubt that until lately the growth of congested districts followed by the growth of slums and the habits of living, which have resulted by reason of

playgrounds, Canadian towns are following in the footsteps of the most advanced cities of the world, while with regard to such live questions as radial streets, rapid and cheap transportation, limitation of heights of buildings, and better houses for the masses, there was evidence that we as Canadians are not only thinking but doing something.—C. A. H.

people for generations living in undesirable circumstances, has been in the main due to the lack of transportation facilities which would enable the residential area to be extended. Other obvious reasons are the lack of systematic oversight and foresight, crowding, and the rapid growth of population for which no adequate provision has been made. We have now arrived at the period at which if any large or growing city has not a proper system of transportation, it has only itself to blame; the remedy lies at hand, and as to other difficulties, the experience which has now been acquired is sufficient, if properly applied, to eradicate most of the evils.

"We have invited you here to help us to begin the attack on broad, comprehensive principles, and the purpose that we have in view is to secure the basic legislation which will enable the whole question of Town Planning and Housing to be carried on in Canada in a scientific, systematic, and orderly fashion. What is the best legislative foundation for this purpose will be for your consideration and discussion and I have no doubt that the result will be of the greatest value.

"What I desire to say to you in closing is that the question you are engaged upon is the greatest material question in the world to-day. It is more important than flying machines or wireless telegraphy, battleships or armies. It has to do with the health and happiness of the average citizen, with the abolition of wretchedness and unhappiness. The solution of it will bring health and happiness to increasing thousands of our fellow men."—Hon. Clifford Sifton before the International Conference on City Planning in Toronto. (Extract).

Light burning of underbrush to remove forest litter had been practised in India, with the idea that it improves conditions for teak growing. Now, after lengthy investigation, the India forest officials say that the fires are harmful; that full fire protection must be extended everywhere, and that, to be really effective, this protection must be continuous.

Conservation of Ground Moisture

Rainfall during Growing Season not
Sufficient—Tillage to Prevent Loss
of Underground Supplies

Whence do crops draw their supply of moisture? Do they draw it mainly from the rains that fall during the rainy season, or do they draw it from the store of water in the soil beneath the surface which has accumulated from the April showers, the snows of winter and the rains of autumn? This is the vital point and on it hangs the whole question of tillage. If the supply is drawn from the summer rains, our tillage must be such that the soil will quickly absorb the rain and discharge the surplus supply; if it is drawn mainly from the spring, winter and autumn precipitation, our tillage must be varied accordingly. Much will depend on the season. If the season is wet, the current rains will supply much of the moisture required, but, if the growing season is dry, the supply must be drawn from the underground supplies that have stored up the previous rains and snow.

As the amount of water lost from the soil by evaporation and by the transpiration of the plant is far in excess of the rainfall during the growing period of any ordinary season, the plant must get much of its moisture from the soil by capillarity; that is, the water travels or is drawn upward in the soil from particle to particle as required by the plant. This can easily be demonstrated by placing a few plants in crocks and setting them down into the soil, but so placed that no moisture other than the rainfall will be received by the plant. The result will be that the plants will die from lack of moisture.

This brings up the question of how to till in order to have the moisture available when needed. Fall ploughing will do much towards holding winter and spring rains. By having the soil loosened, more water is retained. Sub-soiling is often resorted to as a means of so loosening the soil that it will hold more moisture. If this is done, care must be taken to only loosen the sub-soil and not bring it to the surface. Summer tillage prevents loss of moisture. If the soil is left compact and solid, the water comes to the surface and is lost by evaporation.

(Continued on page 26.)

Government Encouragement of Fishing Industry

Improved Methods of Curing, Packing and Shipping would Greatly Increase Returns

"The fishing industry in the Maritime Provinces could be very considerably developed and be made to yield larger returns if improved methods of curing, packing and shipping were employed under proper government inspection, in this way improving the quality of the salt fish sent to market. The Dominion Government has recently made an appropriation of \$10,000 for the establishment of a Fisheries Intelligence Bureau with the object of bringing before the fisherman in some concrete way information with reference to the best methods of curing and packing their fish. The Government has also made provision for the encouragement of the trade in fresh fish between the Atlantic and Pacific seaboard and the interior parts of the Dominion by paying a portion of the regular express charges on all shipments of fresh fish from the Atlantic coast to all points in Ontario and Quebec and from the Pacific coast to all points as far east as Manitoba. While, owing to certain local causes, certain kinds of fish, such as shad, are less abundant than formerly, there seems to be no indication of depletion of our Atlantic fisheries as a whole. The fact that the catch has not increased more rapidly in recent years is owing largely to a restricted market."
—Dr. F. D. Adams, before the Royal Society of Canada.

Chicago Drainage Canal Again to the Fore

Dilution of Sewage by Water Withdrawn from Lake Michigan Proved Unsatisfactory

The recent findings of the board of experts appointed to investigate the question of sewage disposal in Chicago again brings the Chicago Drainage Canal question into the lime-light. One of the first conclusions arrived at by the experts is that "dilution" cannot be relied on as a satisfactory method of disposing of the sewage.

The Chicago Drainage Canal draws a large quantity of water from lake Michigan for the purpose of "diluting" the city sewage and carrying it to the Desplaines river, thus diverting into the gulf of Mexico water which naturally belongs to and is required at Niagara and in the St. Lawrence river. It is not surprising that the scheme has met with opposition in many quarters and, two years ago, when it was proposed to increase the already too large volume of water being diverted, the Canadian Commission of Conservation entered a most vigorous protest. One of

the principal points made in this protest is in direct harmony with the recent findings of the experts, namely, that dilution was inefficient and that Chicago should have proper sewage treatment plants.—L. G. D.

Growing of Rape

Methods of Cultivating and Using this Valuable Plant Described

Rape can be grown on almost any soil that is rich in plant food. To give best results the land should be thoroughly cultivated and cleaned the previous summer and autumn. If barn-yard manure has been applied during the winter, plough it under about four inches deep. Harrow the surface thoroughly and sow about four to six pounds of Dwarf Essex Rape seed per acre. The seed may be sown by the ordinary grain drill with the grass seed attachment. The feed runs should be so blocked as to give a width of about 21 inches between the rows. Next, unhook the rubber or twisted feed conductors from the grain drill, and attach them to the ruts that are to be used in the clover box, allowing the lower ends to conduct the rape seed into the same place as the grain would drop, when using the drill in the ordinary way. Care must be taken not to sow too deeply. A careful man can cultivate successfully rows 21 inches apart. As rape is such a rapid grower, three or four cultivations will be sufficient; the land will soon be covered and will not require further cultivation.

Rape may be pastured or cut, and, for fattening hogs, the best results are obtained from feeding in pens, with outside yards for exercise. In addition, a small grain ration should be fed. For breeding sows, pasturing rape is preferable. A movable fence is a great convenience. If not pastured too closely, the feeding grounds may be changed and several crops thus obtained in the same season.—J. F.

Railway Commission Orders Fireguards in Prairie Sections

Obligations of Railways and Farmers Defined in Recent Regulations

According to regulations recently issued by the Fire Inspection Department of the Railway Commission, railway companies in the three prairie provinces must, except where impracticable or unnecessary, construct fireguards along their rights-of-way.

The railway companies will be made directly responsible for the fireguarding of open prairie and fenced grazing lands, while the situation as to grain-stubble land will be in the hands of the land-owners or occupants, who are to construct fireguards if they consider such action necessary, and to whom payment for this work will be made by the companies

upon a basis of \$1.75 per lineal mile of 4-foot ploughed fireguard.

In the case of open prairie or fenced grazing land, the fireguards must consist of a ploughed strip not less than 16 feet in width, and approximately 200 feet from the track. Where fireguards already exist at a greater distance, however, they will be left where they are to minimize the weed nuisance.

In all cases, dry grass, straw or other combustible matter must be removed between the fireguard or the edge of cultivation and the track. On grain-stubble lands, this requirement applies for 10 feet outside the right-of-way on private land. In the case of fenced grazing lands, burning of grass is not required outside the right-of-way, owing to the hardship that would be thereby imposed upon stock-holders.—C. L.

Local Initiative in Conservation

Waterloo County Centre of Project for Conserving Magnificent Woodland Area

Waterloo county, which pioneered the Niagara hydro-electric power scheme, is again the centre of a project which cannot fail to arouse keen interest among Canadians desirous of a wise administration of their national domain. A movement has recently been inaugurated by a number of prominent citizens with a view toward conserving some of the county's remaining forest area. The organization originated as a result of the threatened destruction of a magnificent woodland property of about fifty acres in extent, situated on the Grand River. The property, known as Cressman's woods, has been pronounced by Chas. W. Leavitt, landscape engineer, of New York city, to be as fine a piece of timber as can be found in all Canada. Several gentlemen, who realize both the necessity of conserving the natural resources of the province and the desirability of preserving beauty spots situated within easy distance of our growing industrial centres, have already acquired the property, thus insuring its safety from the woodman's axe. Plans for the administration of the area have not been perfected as yet and it is still unknown whether ultimate control will be retained by a joint stock company or taken over by the combined municipalities interested. In either event, the movement is one of extreme interest and will, no doubt, be productive of similar undertakings in other counties. It furnishes an admirable illustration of the value of local initiative, in organizing enterprises of provincial and national import.—O. M.

The so-called Scotch pine is the principal tree in the Prussian forests. Its wood is much like that of the western yellow pine of the United States.

Ground Moisture

(Continued from page 25.)

At the same time, the soil is left cold and less pervious to the air. Frequent cultivation keeps the weeds down, allows more air to get into the soil, helps to warm the soil, and, by keeping a blanket of loose earth as a covering, the water is prevented from passing off into the air by evaporation and is retained for use by the roots of the crop. After a rain it is a good practice—as soon as danger from stickiness is past—to lightly cultivate or harrow the ground to a good plan to run a light harrow over unseeded cereals and corn after they are up. The corn may be lightly harrowed before it comes up, and a couple of times after it has come up. In harrowing cereals, care should be taken not to harrow when the grain is too small to allow it to get a good root hold. The increased moisture will more than compensate for any slight loss due to the harrowing.

Good tillage ministers to the needs of the plant in many ways. It may not always be possible to work the soil as frequently as theory requires, but it is well to follow as closely as practicable.—F.C.N.

Misuse of Coal as Fuel

At the recent meeting of the British Association for the Advancement of Science, one of the subjects discussed in the chemistry section was the utilization of coal and its waste. There was general agreement that many methods of the present time involved serious wasteful destruction of a limited supply.

Dr. Beilby referred to the low temperature distillation of coal, which is coked at temperatures of 400° to 450° C. thus furnishing valuable products now consumed to small purpose, while yet leaving the most valuable part of the fuel for its ordinary use. It was his task of the gas works to organize the market for this low-temperature coke. Dr. Colman called attention to the fact that 25 per cent of the heat units in the coke could be obtained as gas, 5 per cent as tar, and 50 per cent as coke, while expending 20 per cent in carrying on the process and noted the fact that the gas is worth more for its product than as fuel, while 20 per cent of the nitrogen in the coal is recovered as ammonia.

Dr. Lessing asserted that England there is an annual loss of more than 200,000 tons of liquid fuel carried away as soot enough to supply the whole of the oil demand of the British Navy. The fuel oil recoverable from house coals by low-temperature coking would amount to some 3,000,000 tons a year. The whole discussion left a serious impression of the awakening to the limited possibilities of the coal supply.—N. E. L. A. Bulletin

Home-grown Clover Seed Saves Money

Second Crop gives Better Returns Harvested for Seed than Cut for Hay

Farmers pay out much money for red clover seed which they might well grow themselves. The second crop is often pastured when it would pay much better to allow it to ripen for seed. The first crop should be cut very early, which will ensure better quality of hay, and give the second crop, from which the seed is to be taken, a better chance to get started. The field where the clover is thickest should be kept for seed. It does not matter if some timothy or other grasses be present, as the clover aftermath is but little affected by the other grasses in the second crop, which usually make a very light second growth. It often happens, too, that a second crop of clover that looks thin and scarcely worth cutting will produce a very profitable crop of seed. Nine acres of a 44-acre field of second crop, which was being kept for seed in Quebec, appeared too thin to be worth harvesting, but, though it gave only half a ton of clover hay to the acre, nevertheless, yielded 141 lbs. of seed per acre. At say, 20¢ per lb. this would be worth about \$28.00, whereas the half-ton of second-crop hay would be of little value. Had the field been pastured, much of the clover would have been tramped down and the amount of food really obtained by the stock would have been small indeed.

It has been clearly demonstrated that home-grown seed gives best results. Last year on a number of the Conservation Commission's illustration farms, home-grown seed and seed purchased from seed merchants were sown side by side in the same field and under the same conditions. In every instance, the stand from the home-grown seed withstood the winter much better. In some cases the crop from the purchased seed was a complete failure, while that from the home-grown seed came through the winter in good condition.

Now is the time to prepare for the seed crop by cutting the crop very early.—F. C. N.

(A later article will describe methods of harvesting and threshing.)

Canadian farmers should try to keep on their farms every heifer calf of present or prospective breeding age. Don't sell the heifer calves for veal. Keep them to raise more cattle. They are needed in this country.

Wood block paving, tried and discarded in many cities of the United States thirty years ago, is now coming back into marked favour, due to improved methods of treating and handling the blocks.

TO NEWSPAPERMEN

To further public interest in conservation subjects, the Commission will lead to Canadian journals the cuts used in this bulletin.

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 promptly, enclosing note showing by whom sent. We shall be pleased to receive copy of publication in which the illustration appears.

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ROAD DRAINAGE

The first and prime essential of any good road is drainage—surface, sub-surface and side drainage. When finished, the road must shed water. To do this the road must be crowned from $\frac{3}{8}$ to $\frac{1}{2}$ of an inch to the foot, depending on the wearing surface, and must have an impervious or waterproof covering. There must be an unimpeded slope from the crown to the gutter or to the side ditch. The gutters or side ditches have at least $\frac{1}{10}$ of a foot fall per 100 feet, and, if they are earthen ditches, they should have $\frac{1}{2}$ foot 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.

In order to drain away the sub-surface water and prevent it from softening the foundations, it is well to lay two lines of tiles.

The second essential, which is an essential of any structure, is a good foundation, and this is especially required for roads where the loads are concentrated on such small areas.

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

CONSERVATION OF WATER IN CONNECTICUT

A practical illustration of water conservation is in progress in the Naugatuck valley in the state of Connecticut, where thirty-five large manufacturing concerns have appointed a committee to carry out the project. Three storage dams are to be built at a cost of \$1,000,000 and the reservoirs thus created will store 23,571,920,000 gallons of water. It is thought that each town and city along the entire valley will co-operate in financing this great development, the basic idea being to provide a sufficient amount of water to operate the numerous manufacturing plants on the river all the year round. The plan to finance the undertaking will, if carried into effect, produce sufficient funds to develop the project.—L. G. D.

ROAD MATERIALS

Paving brick, concrete, crushed stone of various kinds, limestone, trap rock, granite, sandstone, chert, crushed gravel, tank 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.

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 most available suitable material.

Where auto and horse vehicle traffic is heavy, as it usually is around larger cities, creosoted wooden block, brick block, concrete and bitumen-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 any of these materials. To use them carelessly or with no knowledge of how to use them is worse than wasting them, because the taxpayers are defrauded, the road will not wear or give satisfaction, and the materials out of which the road was constructed are discredited.—W. J. D.

C. P. R. REORGANIZES FIRE PROTECTION STAFF

The Canadian Pacific Railway has recognized the local administration of the special fire patrols on its western lines, required by the Board of Railway Commissioners, by placing the matter under the direction of its Forestry Branch, of which Mr. R. D. Prettie is Superintendent, with headquarters at Calgary. The new arrangement affects the handling of fire protection work on all lines of the C. P. R. running through forest sections west of Fort William, Ont. The C. P. R. Forestry Branch has previously been closely associated with fire protection work, through the assignment of inspectors, but the new arrangements will greatly increase its scope by giving it administrative control as well. The new plan is altogether logical in an age of specialization.—C. L.

Treaty to Protect Migrating Birds

Action of U. S. Senate shows American Sentiment Solidly in Favour

The early consummation of the proposed treaty for the protection of all birds that migrate between this country and Canada is seen by John B. Burnham, president of the American Game Protective Association, in the adoption on May 12th by the United States Senate of a \$50,000 appropriation for the enforcement of the new federal law for the protection of migratory birds.

Very shortly, I hope, there will come before the Senate for ratification a treaty providing protection for the birds that migrate between this country and Canada," said he, in discussing the Senate's action. "For nearly a year now the organization I represent has been laboring on this matter. Had the appropriation been defeated it would probably have sounded the death-knell of the treaty. Now, there is good prospect of completing the campaign for protection of our migratory birds, covering the entire line of flight of most of the species, which was begun with the organization of the American Game Protective Association some two and one-half years ago.

"The Senate's action in the present instance," said Mr. Burnham, "is a victory of the people. Wage-earners, farmers, the everyday citizen, had just as much at stake as the sportsmen, for the protection of our insect-eating birds was in jeopardy.

"Victory by the overwhelming vote of 45 to 17 would seem to settle once for all any contention there might have been regarding the solidarity of the sentiment in this country with regard to the placing of the protection of our migratory species in the hands of the Federal Government.

FOREST FIRE PROTECTION STILL INADEQUATE

The numerous and, in some cases, serious forest fires, which occurred throughout eastern Canada in May, prove that, while much is being done by the various provincial governments and other agencies, in forest fire protection, the provision is still inadequate in case of an extended drought. The strict enforcement of the permit system for the burning of settlers' slash would very materially reduce the number of fires. It is, however, hardly to be expected that, with the vast areas of forest lands, and the relatively small population to bear the burden, adequate fire protection can be secured on cut-over forest lands so long as practically no requirements are imposed upon lumbermen as to the disposal of inflammable debris resulting from woods operations. The policy adopted by the British Columbia government in this matter is the most progressive of any in Canada.—C. L.

The Evolution of a Business Street

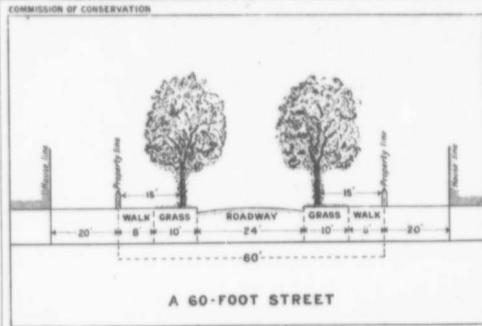
Evil Effects of Lack of Foresight
How a Municipality may
Acquire Land for Widening
at Minimum Cost

Criticize the congested main street of a town as being too narrow, and a resident will probably tell you: "Yes, that is all right, we realize that now, but, when that street was laid out, no one ever thought it was going to be a busy thoroughfare. Why, I remember the time when all this portion of the street where we are standing was lined with private houses." We can all of us think of dozens of examples of this sort of thing. The problem is to so plan residential roadways that they may be gradually transformed into business streets at a minimum of expense. One way in which this may be done may be understood by a glance at the accompanying illustrations.

The upper diagram shows a street 60 feet wide and suitable for a residential section. The roadway is of moderate width, sufficient to accommodate the light traffic of delivery wagons, carriages, etc., that serve the houses on either side. A boulevard and trees give it a pleasant appearance, and also, the houses are set back 20 feet from the property line, with gardens or lawns between them and the side-walk.

If commercial interests should invade this region, property owners would, under ordinary circumstances, build forward to the sidewalk, partly to use the extra space, but chiefly to bring store windows flush up to the causeway. A portion of the street in process of transformation presents a very ragged appearance, due to the lack of a uniform building line. When the process is complete, the once beautiful residential street has become a congested business thoroughfare with narrow walks and a 44-foot roadway. To widen it would necessitate the tearing down of valuable buildings and would be a heavy expense to the taxpayers.

Foresight would obviate this undesirable development. All that is necessary is to establish a restriction prohibiting the use of land for building beyond an established line. Legally, of course this involves compensating the property owners, but the damages can be distributed over a long period in a simple way. No property rights need be acquired by the municipality until application is made for a building permit on an obstructive site, and then the restriction can be imposed and paid for. In this way the public thoroughfare is gradually widened at exactly the same rate as the growing commercial interests require. At no time is it necessary



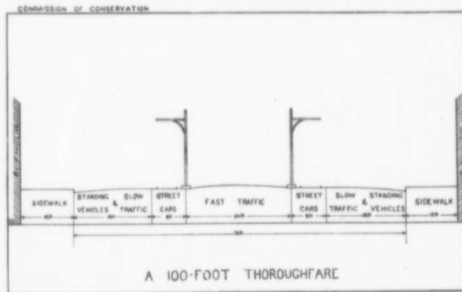
(Cut No. 66)

to pull down buildings. When any considerable number of property owners require it, the walk may be moved over to the building line and the roadway widened. The trees should be left as long as possible, and, unless a street railway is constructed, should be a permanent feature.

The lower diagram shows the ultimate development of the 60-foot street into a 100-foot thoroughfare. Safety for pedestrians crossing the wide roadway is provided by "islands" at the base of each pole holding the electric wires. Motor-cars may run up and down the middle unimpeded by slow-moving wagons and drays, while the latter have ample room to pass between the street car tracks and standing

vehicles by the sidewalk.—P. M. B.

In connection with the above it is interesting to compare the following extract from a recent address by Mr. Raymond Unwin, F.R.I.B.A., before the Victoria League Imperial Health Conference in London: "There are certain requirements of town planning which are fairly obvious and generally applicable, such as the prevention of the overcrowding of dwellings, and the fixing of such a building line on all the main highways radiating out of the town into the country, as will prevent buildings being erected so near to these roads that future widening can only take place at excessive cost after demolition of the buildings."



(Cut No. 67)

PARIS HOUSING SCHEME

During the next eighteen months, cheap and hygienic dwellings will be erected in Paris (a city of high rents) for no fewer than 60,000 persons who are at present living in unsanitary houses. The Municipality of Paris has borrowed \$4,000,000 from the National Pensions Office at 4.2 per cent and has already purchased 36 acres of building land for \$2,165,000, an average cost of \$1.35 per square foot. At a cost of \$13,000,000 it will be possible to build 11,000 lodgings, each capable of accommodating at least five persons. These dwellings will, it is hoped, be ready for occupation in June, 1915.

This action on the part of the

municipality gives effect to a Bill dealing with the housing problem passed by the National Assembly last year, which empowered the Paris Municipality to incur a direct expenditure of \$30,000,000 in improving housing conditions, and authorized it to make advances to the philanthropic and building societies which are trying to solve the housing problem. The Council has decided to spend the remaining half of this authorized expenditure in the construction of dwellings on the site of the dismantled fortifications of Paris when the grand scheme which will give Paris yet another ring of boulevards becomes a reality.—*The Journal of State Medicine.*

Enormous Waste of Coal

Ordinary Methods use Only 5 per
Cent of Energy Locked up in
Coal Areas—Advantages of
By-product Coke Ovens

"Perhaps the most serious waste which is taking place in the Dominion at the present time in connection with its mineral resources is presented by the mining and utilization of coal. In the first place, in mining a coal seam, from 50 to 90 per cent of the coal is left in the workings for the purpose of supporting the roof. Of the coal which is taken out and burned under boilers in the usual manner, only about 12 per cent of the total energy is developed. That is to say, we secure for useful purposes only about 5 per cent of the total energy contained in the coal contained in the area. If the coal is burned in gas producers and the gas so obtained used in internal combustion engines, these, having a higher efficiency, develop about 30 per cent of the energy in the coal actually mined, or about 12 per cent of the energy locked up in the coal of the whole area. This is an improvement, but still represents an enormous waste.

"On the other hand, the coal may be mined for the production of coke for metallurgical purposes. About three-fourths of the coke produced for this purpose in North America and all the coke made in Western Canada is manufactured in beehive furnaces, which yield a relatively low percentage of coke, while the other products of the coal—gas, tar, ammonia, benzol, etc.—go to waste. All these products may be saved by making the coke in by-product ovens, representing in localities where the surplus gas can be sold at a reasonable rate, a gain which is estimated by Mr. F. E. Lucas, manager of the coke ovens of the Dominion Coal Company, at \$1.98 per ton of coke made. This figure will, of course, vary with the locality in which the coke is produced, but it emphasizes the great saving which may be effected by the use of the modern by-product oven. The tar and ammonia obtained by this process, moreover, meet with a ready market. The former is already being used extensively in the Dominion for a variety of purposes—among them as a binding material in the manufacture of briquettes from slack coal, thus enabling this waste product to be successfully utilized—while the ammonia is a fertilizer of the greatest value, for which there is great demand abroad and for which an ever-increasing demand will arise in Canada as the necessity of employing improved methods of agriculture is brought home to our farmers."—*Dr. F. I. Adams, before the Royal Society of Canada.*