

## PROTECTION OF BRIDGES.

In discussing protection, Frederic H. Fay, formerly Division Engineer in charge of Bridges and Ferries, city of Boston, in a paper before the Engineers' Society of Western Pennsylvania, considers particularly the subject of metal corrosion. He outlines the conditions under which metal structures decay, and against which protection is necessary. Iron will not corrode in air unless moisture is present. The agents present in the air which accelerate rusting, especially in or near cities where much fuel is consumed, are numerous. Sulphur dioxide and soot are probably the most destructive, because together in the presence of moisture they produce sulphuric acid. The action of these two agents is most marked in railway tunnels and bridges.

Experience in Boston has shown that the corrosion of metal bridges has been due principally to one or more of the following causes: Exposure to locomotive gases; exposure to sea water; exposure to surface water leaking through bridge floors; overstress of the metal by which corrosion has been hastened.

While many paints have given satisfactory results on metal structures under ordinary conditions, they have not proved an effectual protection of metal work under extreme conditions, such as exist in bridges over railroads. The use of wooden ceiling protection confines locomotive gases and makes corrosion more rapid than in the open. Sheet lead has in some cases been worn away by locomotive blasts until it began to fall upon the trains beneath. Asphalt coating after six years service has been found in good condition.

But concrete or mortar has proved by far the most satisfactory protection for metal structures over railroads. It should be properly reinforced with steel. The best results and the greatest degree of safety will be obtained when the steel reinforcement is thoroughly attached to the metal member.

## 1915 EDITION OF McKIM'S "CANADIAN NEWSPAPER DIRECTORY" NOW ISSUED.

It is now nearly a quarter of a century since Mr. A. McKim, who established the first independent Advertising Agency in this country, completed the rather ambitious task of publishing the first Directory of Canadian publications. The nine successive editions of this valuable work provide the most complete and detailed record available of the growth of Canadian periodicals.

The 1915 Edition, of which we have just received a copy, shows that the great war has not seriously affected the newspapers of Canada. While the birth-rate of new publications has received a check, and the death-rate of the weak ones has perhaps increased a trifle, most of the leading papers, particularly the dailies, show very healthy increases in circulation. Three metropolitan dailies have reached or passed the hundred thousand mark.

A census of the papers listed and described in the 1915 Directory shows nearly 150 dailies, 7 tri-weeklies, 45 semi-weeklies, over 1,065 weeklies, about 40 bi-weeklies or semi-monthlies, 250 monthlies, 3 bi-monthlies, and 18 quarterlies—a total of over 1,575 publications.

This means approximately one daily to every 10,000 families, and one weekly to every 1,500 families. From this one would infer that for a comparatively new country, Canada is well-read.

A. McKim Limited report the usual keen demand for the Canadian Newspaper Directory, which sells at \$2.00. Its red-banded, gold-stamped green cover has become a familiar sight on the desks of advertisers, publishers and business men everywhere who are interested in Canada.

Many incomes may be augmented by cultivating the back yard. A penny saved is a penny earned.

Vegetables fresh from the garden are a luxury only appreciated by those who cultivate their own back yard or the vacant lot.

its use of the gift; to render every house and street as healthy as the healthiest hillside in the world; to provide the best doctor and the most comfortable hospital for everyone who is sick; and to have at hand a friend for everyone in trouble.

In our Ideal City art will grow out of common life, undisturbed by contrasts of wealth and poverty. The people will have pleasure in their work and leisure to admire what is beautiful.—From "Worship and Work," from the writings of the late Canon Barnett in "Garden Cities."

## THE IDEAL CITY.

Cities increase, and the country becomes more and more empty. Observers shake their heads as they walk through the long, dull streets and breathe the close air, and see the pale faces of the people. "God," they repeat, "made the country, man made the town." Their hearts sink at the thought of the future, and they find themselves saying that "cities will crowd in a blacker, incessanter line"; that "the din will be more," "the trade denser," and that they will "never see an ennobling sight, or drink of the feeling of quiet again."

They forget that the highest possible life for men may be a city life; and that the prophets foresaw, not a paradise or a garden, but a city with its streets and its markets, its manifold interests and its hum of life. A man often does well, as David, to leave the sheep folds to come down to see the battle.

The activities of the street, of the shop, and of the town meeting, are for many characters the best preparation for life in the City of God.

We have as our neighbors in a city, not the trees and the beasts, but fellow human beings. We can from them learn greater lessons, and with them do greater deeds. We can become more human.

The country may still be best for some people; it is probably at some periods of their lives best for all—there is an ideal village as there is an ideal city—but the movement of men is obviously from country to city; we must, as a consequence, fashion our cities after the highest pattern. We must make them good for the health as for the wealth of the citizens.

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The Ideal City will be large, with a quarter or half a million citizens. There will thus be room for a great variety of life and pursuits. The citizens will find at their own doors the interest that comes from the clash of many thoughts and many experiences. Because, too, the city will be large, every citizen will have a greater sense of responsibility. He will feel himself a citizen of no mean city, and as such he will act, and as such expect to be treated.

The Ideal City will be old, the growth of centuries, bearing on its face the mark of many storms and triumphs. There will be the very marks left by men of old time, as they hammered out their rough thoughts. Some of their buildings will tell of times of luxury and victory; and in out-of-the-way places there will be remnants of castles and forts where the men of old fought and died for the city's liberties. The citizen, as he walks the streets of the Ideal City, notes the odd names, turns by some strange twist, or catches sight of some tower, will feel himself encompassed by a "cloud of witnesses," and will hear a voice telling him that the ground he treads is made holy by the toil of the city's fathers. He will be both humbled and inspired; two conditions necessary to satisfaction.

The Ideal City will be a new city. Its streets will be broad and lighted with electric lights. Its houses will be good, fitted with water and warmth for the comfort and the health of its inhabitants. Its spaces will be many; great open spaces for games; small open spaces, within the reach of every house, for the rest of the weak. Its public buildings will be of many styles, expressive of the character of their uses.

There will be the Cathedral brooding over the city, gathering together, as it were its various interests, its manifold activities, to lift them up to higher issues, to God's uses. There will be the churches and the chapels, with open doors, offering the chance of quiet, and provoking thought by pictures and music. There will be the schools, with classrooms and playgrounds; technical schools, commercial schools, high schools. There will be the University College, with its laboratories, its great hall, and its classrooms. There will be the Municipal Offices, with its Town Hall, on the walls of which an artist will have painted scenes from the city's history, and where the citizens will throng in their thousands to hear great speeches or to listen to great music.

A visitor to the Ideal City would be charmed by its first aspect; its variety of a architecture, its beauty of color, its freshness and purity. He would miss little of what he had left in the country. He would breathe easily, enjoy the play of change, and taste the quiet which comes of deeper feeling. And he would know none of the depression caused by great wealth or great poverty.

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In the Ideal City none will be very rich, and none will be very poor. Knowledge and goodwill will join together to give to every child the best education, and to secure