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INSURANCE SOCIETY

"Still achieving, still pursuing,
Learn to labour and to wait."

AND FIREMEN'S REVIEW.

Office: 102 St. Francois Xavier St. | Vol. I., No. 11. | MONTREAL, NOVEMBER 20, 1881. | Subscription: $1.50 per Annum.

The Office of

"INSURANCE SOCIETY"

IS IN THE

EXCHANGE BANK CHAMBERS,

No. 102 St. Francois Xavier Street, Montreal.

Annual Subscription (in advance) - -	$1.50
Single Copies (in numbers less than 100) -	0.15

Halifax, from an underwriting point of view, is a place to be well out of, and those who control that standpoint have evidently been awakened by the prospect before them. Rates were down to such a figure that a broker's commission was hardly enough to "wet" an ordinary hazard. Something had to be done, and so a meeting of agents was called some time since, at which resolutions, good resolutions were passed, and much said that sounded like business A combination or Local Board was determined upon, and a paper handed round for signature agreeing thereto This last was signed by the representatives of all the English Companies with one exception, the Canadian Companies also holding aloof, we believe. Of course the Local Board is not a fact, so many links were wanting to complete the chain. It is hoped, however, that the English Office that failed to sign will yet extend her regal hand in friendship to the others, and that the Canadian Offices will not be slow to take advantage of a chance to show that they are alive to interests of the business generally. From the quotation given us of rates, we wonder that the field is not altogether abandoned, until the merchants of Halifax learn that insurance is a commodity worth paying for, and that Insurance Companies are not charitable institutions.

We must confess to the justice of some of the remarks made by "Scrutator," in his letter which we print on another page, referring to the table of ratios that appeared in last month's paper. The part comprising the English Companies was handed to us by a gentleman connected with one of the Old Country offices, and deeming the matter of interest we also gave the standing of Canadian Companies in the same manner; but found the difficulty stated in the note preceding table. There was also an error in the proof reading, which made the net premiums of the Commercial Union $2,316,606, which should have read, $231,606, rather a serious mistake, but one which those acquainted with the business would easily perceive. It is well known that about 10 per cent. should be added to the ratios of expenses of English Companies for Head Office expenses, that do not appear in our Government statement, and with which, therefore, we cannot very well deal.

In reference to the last paragraph of "Scrutator's" letter, contrasting the different statements that are demanded from foreign and domestic Companies by the Government; though at first sight there may seem some injustice, yet if the evident reasons for this difference are considered, they may dissipate what at first sight appears a grievance.

The deposits made by the foreign Insurance Companies are made exclusively for the benefit of Canadian policy holders, and are considered sufficient security by the Government, whether they are or not, being another issue altogether, and it is policy holders alone who require security from these Companies, their capital being held by foreign shareholders who look to other Governments for statements of the standing of their Companies, or else get and deserve none.

Our local Companies also make Government deposits for the benefit of their policy holders, with equal justice. But Canadian shareholders wish a more intimate knowledge of the affairs of their Companies than the mere fact that their hard cash is deposited for the benefit of policy holders. Let the Government demand as strict reports as possible from our large monetary institutions. The fate of some Insurance Companies and Banks should be a lesson, for all Companies whose affairs are in a good condition can stand the test of daylight, and shareholders want to know those that can't.

The Ecclesiastics and Scholastics have been a burning and a shining light to Insurance Companies this year. They have taught a lesson that induction should have taught long before, but the eager race for business drowned the voice of logic or common sense. Churches, colleges, convents and schools have proved themselves anything but a paying class of business at the rates now paid. 50c. to 75c. @ $100 for three years is not an uncommon rate for first-class property of this kind, which, judged by any reasonable rules for rate calculating, is simply a species of legitimate gambling, a sort of bet of 200 to 1 for three years, or 600 to 1 for one year that the premises will not burn, the only difference being that the infinitesimal stake or premium becomes the property of the Insurance Company in any event. Companies that scout the idea of farm property at less than 85c. to $1 per cent. for three years, where the lines are small and well distributed, snap at these larger plums and swallow them whole, taking risks up into the tens and twenty thousands. There is no science of insurance in this any more than there would be science of banking in the institution that rolled up an immense business by discounting all the worthless paper presented at the wicket The fault in this kind of business, as well as in all others, is that the lowest rates at which any one risk of the kind, situated in the best locality and protected by the most efficient means of fire extinction, governs the schedule of the class. If a first-class school, convent or church, situated within its own grounds, unendangered by surrounding buildings, and protected by available strong streams of water from municipal hydrants, guided by the practiced hands of experienced firemen, can be done at such and such a rate, why not a similar building standing in the country, where there are no water-works, no steam fire engines, no firemen? Well, why not? This should not need an answer here. Any one can answer the simple question for himself, whether an insurance man or not. And yet it would seem as if it did need an answer; though perhaps not, for those who do not write such risks at a common rate have already answered the question themselves, to their own satisfaction, and those who had not this predisposition for query and reply, have probably been answered by a blaze or two of considerable dimensions.

We can call to our recollection five cases of fires during the past year, where this class of business has rolled up a total loss of about half a million dollars, with a loss to Insurance Companies of about one hundred and fifty thousand dollars. When premiums on twenty or thirty million dollars worth of such property have been earned, without further loss, the parties interested may consider themselves square and on the road to profit.

And so wooden buildings in the centre of the city of Montreal—and quite a cluster of them too—are written at one per cent., and this fact makes a highly respectable gentleman somewhat irate, who was charged $1.50 on his office furniture in a most substantial, first-class building. However, the rate was lowered to $1.25, as a compliment to his personal morality, which for a time mollified his anger, but when he found his neighbour insured for 75 cents, he began to feel *assured* that a small portion of one Company's gigantic assets had been unjustly cajoled out of his slender earnings, or else that the science of fire insurance consists in taking any rate that can be obtained.

Woodstock, New Brunswick, has again suffered from a disastrous fire, evidently the successful result of an incendiary's dastardly crime.

About 12.30 a.m., Nov. 11th, a fire was discovered in the building No. 10, Block 30, Sheet 2 of Insurance Plan, which resulted in the destruction of the Mechanics' Institute, No. 10, and two dwellings, No. 3, and one on Park Street, erected since completion of Plan This was on the south side of the Meduxnakik River, and this fire seems to have been successfully extinguished.

About 1.15 a.m. a fire started in a barn, No. 53, Block 16, Sheet 4 of Plan, and it was this that led to the disastrous conflagration. The burnt district comprises:

On Sheet 4—Blocks 14, 15 and 16—all buildings to East of line drawn from letter E in Chapel Street, to letter V in Victoria Street; Blocks 17, 18, 19, 20 and 22, *all* burned.

On Sheet 3—Block 12—Buildings Nos. 32, 34 and 35.

It has been the custom to speak of New Brunswick towns as wooden nests with no appliances for protection against fire, but we wish to record the *facts* here, that underwriters may note, as they readily will with a plan before them, how bravely and successfully the firemen of Woodstock attacked this conflagration.

Evidently, the first fire had just been successfully extinguished, when the second trouble began, and with a strong north west wind, no better building could have been selected by the cowardly incendiary. Under the circumstances, it is plainly seen that Woodstock possesses a gallant, intelligent and persevering Fire Brigade, for none other could have saved the whole business part of the town from destruction.

Doubtless there is too much of a wooden nature in such towns, but this is a matter that has been a necessity, and gradually a better class of buildings are growing up; meanwhile, corporations and citizens, for public and private reasons, will lose nothing, and most likely will save much by maintaining efficient organizations for fire protection.

The town authorities of Woodstock offer $500 for the apprehension and conviction of the incendiary. An investigation has been commenced, which seems to be likely to bear good results.

The total loss is estimated at $100,000, of which Insurance Companies incur $56,000.

We have seen a sample proof sheet of the City of St. John, N. B., Tariff Ratings. The particulars given are in the following order:—"Goad's Plans," Page, —. Block, Street No., Owner, &c., Construction, Rate per $100, Building, Contents. In the country town rating

the same plan will be followed. Mr. C. E. L. Jarvis, in whose hands the compilation of the tariff has been placed, has a heavy task, and one that will deserve a more substantial recognition from the Companies than a mere vote of thanks.

President Dresser, in his address to the Fire Underwriters' Association of the North-West, made a courteous acknowledgment of the benefit which the Insurance Press of the country has been to Insurance interests. He said: "To the courtesy and encouragement of the Insurance Press are we indebted for much of the success of our Association in the past, and I do not feel like wholly passing over our obligations in this respect in silence. It is one of the modern tools that no underwriter who wishes to keep up with the times can afford to be without. Its praises have been a theme in nearly every address which has been delivered before our society. I most heartily endorse all the good things that have been said by our friends of the Press, and shall not weary you with a repetition of their good qualities and numberless virtues. Its representatives have been our staunch supporters and are with us today. If the prizes which have been offered, and for which our members have been invited to compete, are an index, we may safely infer that the Press has met with the financial rewards to which it is justly entitled by its merits. By its adherence to our interests it has the reward of grateful hearts, and, as Joe Jefferson says: 'Here is to its good health, and its family's; may it live long and prosper.'"

There is a pleasure in knowing that honest effort has secured recognition and praise. Judging by our own experience, it must have been a long struggle against many adverse circumstances before many of the journals in the United States attained their present high position, and unless, in the majority of cases, it had been gained by honesty of purpose, this unreserved praise would not have been bestowed by Mr. Dresser.

We have heard murmurs raised against the Insurance Press, and whisperings of black-mail and such like charges. Well, many of them may be true. We are not prepared to say that the Insurance Press is purer and better than any other human institution, which a denial of that would amount to. But what we do say is, that honest companies very soon find out honest journals, and it is only a "shady" business that needs fear blackmail, as it also fears the truth.

The chief trouble with all three of the gentlemen who have written essays on the Fire Hazard of Flour Mills for the North-western Underwriters' Association, in the present and years past, has been that none of them have had anything like a minute acquaintance with the machinery they treated of in its relation to the subject. Mr. Johnson evidently prepared himself more carefully than his predecessors; but he, like them, has been too prone to regard flour mills as containing some haunting fire demon, and to see it or its shadow in some of the most innocent places imaginable. We remember hearing an old Insurance man say that once upon a time he was in a flour mill preparatory to placing insurance upon it. He asked the miller how high he speeded his smutter. "Oh, 'bout 600," replied the miller. Thereupon the insurance man dilated upon the danger of high speeds generally, and of smutters in particular, and was proceeding to raise the rate, when the miller asked him the rate upon a wood-working establishment in the neighborhood. The agent replied, giving a lower price than he proposed to insure the mill for, when the miller closed the argument and the agent's mouth simultaneously by calling attention to the fact that that wood-working establishment had machines in it running at a speed of from 3,000 to 4,500 revolutions per minnte. The insurance men, and especially those who write essays, seem to be "down on" flour mills. They prefer to take gilt-edge risks like wood-working establishments, summer-resort hotels, and the like, than flour mills which have demoniac smutters in them running at the terrifying speed of 600 revolutions. Verily, they strain at a gnat and swallow camels that rise on their stomachs and fill them with anguish when the proofs of losses come in.—*American Miller.*

OUR FIRE RECORD.

The interest displayed in furnishing us with information for the compilation of this record is rapidly increasing. Most of the Companies now favor us with data, and many agents and brigade-chiefs send us monthly returns.

The eventual value of this record will depend mainly on the statistical tabulation of results by districts and classes—and as to commence properly is more than half the battle—we invite suggestions and advice from underwriters as to the most sensible and practicable method of tabulation; as to the most useful headings under which to classify risks; as to the most convenient way to lay down districts; and generally to help us in making, in a feasible and comprehensive style, tables that may prove of value in after years.

Many of the larger and older Companies, at considerable labor and at no little expense, compile such data from their own experience; similar tables prepared from the experience of all would undoubtedly be of even greater value, and while furnishing material for judicious valuation of rates, would tend to show so clearly the actual loss ratio by risks and by districts, that the foolhardy rate-cutter would not so triumphantly flourish as he is commonly reported to do now-a-days.

Circulars will be issued on this subject during the coming month, and we trust that Canadian underwriters will not be slow to assist us in a matter that should be of the greatest service to their profession.

In twenty-five years the percentage of loss to insurance companies by fires in this city (New York) has decreased from 32.87 per cent. to 13.24 per cent. This gratifying decrease is owing mainly to the efficient action of the fire insurance patrol. The greatest number of fires occur between the hours of 8 o'clock and 9 o'clock in the evening, so it is said.—*Chronicle.*

THE RELATION BETWEEN THE HEIGHT AND WEIGHT OF MEN.

We clip the following correspondence from the pages of the *Journal of the Institute of Actuaries and Assurance Magazine*, which, we feel assured, will prove of much interest to Canadian Life Assurance men. The writer, Mr. T. B. Macaulay, is the Actuary of the Sun Mutual Life of Montreal.

To the Editor of the Journal of the Institute of Actuaries:—

SIR,—The following statistics regarding the weight of the human body, and the effect which various influences have on it, may be interesting to your readers. They are founded on 2,000 cases taken from the records of a Canadian Life Company. This number was chosen as sufficient to give reliable results, without increasing needlessly the amount of labour.

Although I am acquainted with several tables purporting to show the average weight corresponding to various heights, I have been unable to find on what basis any of them rests. Some differ very greatly from others. It thus becomes a question by what table should a Company be guided, To solve the matter I made an investigation, and give herewith the results, with very slight adjustment. Only healthy English-speaking lives were included.

Average Weight at various Heights.

Height.	Weight.			Height.	Weight.		
	lbs.	st.	lbs.		lbs.	st.	lbs.
5 ft. 1 in. -	125·	= 8	13·	5 ft. 7 in. -	145·5	= 10	5·5
5 " 2 " -	128·	= 9	2·	5 " 8 " -	151·	= 10	11·
5 " 3 " -	131·	= 9	5·	5 " 9 " -	156·5	= 11	2·5
5 " 4 " -	134·	= 9	8·	5 "10 " -	161·6	= 11	7·5
5 " 5 " -	137·5	= 9	11·5	5 "11 " -	167·	= 11	13·
5 " 6 " -	141.	= 10	1·	6 " 0 " -	173·	= 12	5.

The average height of adult Canadians of British extraction was found to be 5 feet 8.6 inches. and their average weight 155·0 lbs. The French cases were kept separate, and their average height was found to be 5 feet 7·3 inches, and their weight 149·9 lbs. French-Canadians are, therefore, as a rule, about one and one-third inches under the English standard in height, and five pounds under it in weight. They are, however, generally heavier than English people of the same height.

The declined lives were also kept separate. Taking into consideration only those cases in which the cause of rejection was a tendency to lung disease of any kind, whether manifested in the applicant personally or in his family history, it was seen that although their average height was exactly the same as that of the healthy cases, their average weight was only 147·6 lbs.—about seven and one-half pounds under the healthy standard. Some such result was expected, but it confirms the rule that light weight generally accompanies a consumptive tendency. The other rejected cases exhibited nothing remarkable.

The influence of age is considerable, as may be seen from the following table:—

Weight at various Ages.

Ages.	Weight.			Ages.	Weight.		
	lbs.	st.	lbs.		lbs.	st.	lbs.
16 to 20 -	142·5	= 10	2.5	41 to 45 -	159·2	= 11	5·2
21 " 25 -	149·6	= 10	9·6	46 " 50 -	163·5	= 11	9·5
26 " 30 -	151·3	= 10	11·3	51 " 55 -	167·7	= 11	13·7
31 " 35 -	157·3	= 11	3·3	56 " 60 -	172·4	= 12	4·4
36 " 40 -	158·2	= 11	4·2				

The weight of healthy persons thus increases about thirty pounds in forty years, or about three-fourths of a pound for each year By far the largest increase is at the younger ages. Whether this rule of increase holds good much after sixty, I have no means of knowing. It is, however, evident that a young man may be considerably under the tabular weight for his height and still be perfectly healthy, while the same variation in an elderly man would be very suspicious.

We have already seen that a consumptive tendency and a spare habit of body, generally go hand in hand. As weight is found to increase with age, we may, perhaps, infer that the liability to consumption is less among lives selected late in life, than among those entering at an early age, although the deaths from that disease are pretty evenly distributed over the ages, among assured lives as a class.

The influence of occupation is next to be considered. The following table shows the main results on this score:—

Average Weight of Persons engaged in various Occupations.

Occupation.	Weight.		
	lbs.	st.	lbs.
Agents, Brokers, &c. - -	156·2	= 11	2·2
Butchers - - - -	169·3	= 12	1·3
Barristers - - - -	160·1	= 11	6·1
Bankers, Ins. Managers, &c.	154·2	= 11	0·2
Blacksmiths - - - -	155·4	= 11	1·4
Clerks and Salesmen - -	147·4	= 10	7·1
Carpenters, Coopers, &c. - -	152·6	= 10	12·6
Commercial Travellers -	158·1	= 11	4·1
Clergymen - - - -	163·7	= 11	9·7
Druggists - - - -	148·1	= 10	8·1
Doctors - - - - -	160·6	= 11	6·6
Farmers - - - -	160·9	= 11	6·9
Founders and Moulders - -	151·3	= 10	11·3
Hotel-keepers, &c. - -	166·7	= 11	12·7
Labourers - - - -	148·3	= 10	8·3
Merchants - - - -	153·7	= 10	13·7
Machinists - - - -	153·5	= 10	13·5
Masons, Bricklayers, &c. -	162·2	= 11	8·2
Manufacturers - - - -	151·1	= 10	11·1
Shoemakers and Saddlers -	148·0	= 10	8·
Teachers - - - - -	151·4	= 10	11·4
Tailors - - - - -	145·1	= 10	5·1
Total - - -	155·0	= 11	1·

As these statistics are based exclusively on Canadian data, they may be compared with those of other countries, and I will be much pleased to see this done. It must be remembered, however, that the average age at entry should be taken into consideration. In the Company referred to it is 28 years.

Yours truly,

T. B. MACAULAY.

Montreal, Oct. 21, 1880.

P.S.—Since writing the above, I have noticed in Dr. Allen's *Examinations in Life Insurance*, a statement to the effect that the average height of Continental Europeans is a little less than 5 feet 6 inches; that of emigrants from Great Britain about 5 feet 7 inches, and that of Americans, about 5 feet 8 inches. We have seen that the average of English-speaking Canadians is over 5 feet 8½ inches. If Dr. Allen is correct, he strongly confirms the opinion I have always held that Canadians are a hardier, better developed, and more muscular race of men than can be found in almost any other country.

TORONTO LETTER.

To the Editor of INSURANCE SOCIETY,—

Amongst notable events in our Insurance circles I have to inform you that changes are being made in the City Agency of the "Lancashire" Fire Insurance Company. Mr. Ed. Rogerson, the late City Agent, leaving for a business position in the United States. It is, I believe, decided that Mr. Joseph B. Reed, Local Agent for the Liverpool & London & Globe, is to succeed Mr. Rogerson, in the representation of the "Lancashire" here, whilst at same time retaining the Agency of the L. & L. & G. This will be a profitable connection for Mr. Reed, as he is just the right man to reap all the advantages accruing to such an excellent position. Moreover, this arrangement is a step in the right direction, as tending to place Companies in fewer hands, to the advantage in many ways of both Companies and Agents. A man with but one Company, however popular, has but a sorry time in making a living, amidst all the competition now going on.

Considerable comment is being made on the present position of the "Union" Fire Insurance Company of this city. Harmony has not prevailed to the desirable extent it should in the Board-room of this Institution, and it is reported the President—Hon. J. C. Aikins—has resigned. As a further disturbing element, late calls on shareholders are said to have been met by resistance in too many cases. Add to these the awful presence of the Ontario Government Insurance Inspector, who is making a rigid investigation of the "Union's" financial position, and you can understand that Mr. Manager McCord has a great deal to try him just now. I sincerely hope the "Union" will survive its present trials and hold on its way.

Apropos of the Ontario Government Inspector, does it not seem strange that whilst we are in the eleventh month of 1881, that the Insurance Report for 1880 is not published yet? Fact is, a Company pretty solvent on 31st December last year, would have time to become insolvent and one of the *shadies* have time to recuperate and show a surplus, before the general public can get any official information of the status of each such Company. I am afraid Inspector Hunter has spent too much of his time on the "West Wawanosh Mutual"—Cash Assets, $61.09; Total Income, $120.79—and others of that ilk. This dilatoriness ought not to be.

I was greatly amused by a letter in the *Journal of Commerce*, of the 4th instant, condemning Underground Insurance, in the case of two Hamilton Companies. If there be any argument or logic in the letter at all, it is summed up in this phrase: "Because some American Companies do what is irregular and illegal, therefore some Canadian Companies are justified in doing likewise in retaliation." Queer reasoning this for even a Toronto Insurance man, if he really be both the one and the other. This sapient correspondent goes as far as *sixthly*, with his illustrations of how certain American Insurance Companies, unlicensed in Canada, are ruining by this underground competition the Fire Insurance business of Canada generally. This is news, indeed, to many of us.

With the numerous fires that have occurred this year, your valuable Table of Fires, at the end of your Journal, will be greatly augmented, and ere long very useful statistics may be based on its figures and information. Fancy the value to Canadian Insurance men of such a Tabulation of important details, at the end of ten years or even five. There is still too much of the happy-go-lucky style in our Fire Insurance business. A little more scientific management and intelligent practice, would help to the attainment of more favorable results in Canadian underwriting.

With these moral confections, I close.

Yours,

Toronto, 14th *Nov.*, 1881. ARIEL.

CORRESPONDENCE.

To the Editor of INSURANCE SOCIETY,—

DEAR SIR,—The interesting compilation you were good enough to furnish your readers with last month, upon the general results of the fire business of 1880, may be open to invidious and detrimental comparison, so far as the Canadian Companies are concerned, by an unintentional oversight of two omissions.

1st: The profit percentage of the combined Canadian Companies is reduced down largely by the adverse business of Marine Companies, while the transactions of Foreign Marine Companies are not given among these comparisons.

2nd: The percentage of expenses of British and American Companies does not include Head Office expenses; and, inasmuch as it is the practice of these Companies to charge up the bulk of their expenses to the Head Office account, very probably not bringing the same into their Canadian expenses, a considerable additional percentage should be added. I believe the practice of Head Offices in England is to estimate this figure at 10 per cent. upon their Canadian income. With this added, it will be seen that the Canadian Companies are all managed much more economically, a tribute to Canadians which is not often accorded them.

In this connection, I would ask: Why does the Superintendent of Insurance permit the Royal and other Foreign Companies to over-ride the Act, by massing together their expenses in Canada, while scrupulous care is exacted that the locals shall expose their hands in every manner and form. Is there one law for the Foreign, another, of a more stringent character, for the Local?

SCRUTATOR.

FLOUR MILLS.

[We print this month from the *Spectator* the essay of Ernest C. Johnson, of Michigan City, on Flour Mills, which was read before the Fire Underwriters' Association of the North West, on the 14th Sept. last.]

THOUGH meriting full publication, so comprehensive a paper we cannot print in entirety. As presented here it is reduced something less than one-half and embraces a thorough statement of the fire hazard of the several methods of manufacturing flour, in detail; criticisms on the value and availability of automatic sprinklers in flour mills, as a means for prompt extinguishment of fires in their incipiency; a new form of flour mill survey, developing the hazard as above described; a schedule of rates, showing a standard mill with basis rate for same, and the proper charge for the various systems of manufacture, and the consequent volume of machinery, and for variations in construction, including extra height, area, and absence of fire alarms and fire extinguishing apparatus.

In most new, and especially in remodeled mills, there is an objectionable tendency to build high. The space required for the additional machinery of gradual milling is too often obtained by adding one or more stories in height, instead of covering more ground. The necessary volume of machinery in the remodeled mill does not so often require additional space as the effort to increase the mill's capacity or output, which is almost invariably sought for at the same time.

Increasing the capacity of old mills, when remodeling, by additional height, is so common and objectionable, as to merit notice. Few mills are built strong enough to withstand the weight of and strain of added stories, together with the increased load of machinery incident to modern milling. Competent judges say that the quantity and weight of machinery necessary to maintain the old mills' output, when changed to high milling, is fully doubled. Such mills have greatly increased their fire contingency, and should enlist the closest attention of the owner against accident, and the

insurers of such should see that proper discriminations are made in fixing the rate.

The chief aim, in building high, is to avoid re-elevating and spouting, by being able to feed down, from floor to floor; but the hazard of altitude more than offsets the simplicity secured, and should be so discriminated against by insurers, as to render low building an economy. It is extremely doubtful whether any economy is secured by building high, when the extra time and labor of supervision, the increased fire liability, and proper rate of premium are duly computed. High mills are more exposed to accidental causes, such as lightning, sparks from remote fires, and, if frame, are liable to be racked by storms, so that the load of machinery and grain, for they all have more or less stock in mill, produce dangerous friction from trembling. The proper supervision of machinery is more apt to be neglected, when it requires so much climbing up and down. Increased length of elevators produces heavy draught on pulleys and their sensitive tendency to frictional fires at the pulley-head is greatly increased. Once on fire, they are almost sure to baffle the best facilities, and be referred to the adjuster.

The foundations of a flour mill should be such as will permanently resist the weight and workings of the machinery, and a weight of stock that might fill it to its utmost capacity. Central piers, though not exposed to frost, with independent and less substantial foundations, will not answer. They, and the chimneys, if any, must rest on solid masonry.

A separate building for grain and flour storage is, unquestionably, best and cheapest, because it lessens the value exposed to the mill fire rate; but the reduction it would secure, in the mill rate, would depend on the relative strength of the mill building for its work, as the chief result would be the removal of weight. Such a storage building should be as nearly fire proof as possible, should be strictly for storage and shipping, should have as little machinery in it as will handle its contents, and should have the power transferred to it from the mill, in order to reduce the fire rate to the lowest minimum possible.

Wooden roofs are especially bad for flour mills, where so much dust, of various kinds, is liable to increase the sensitiveness to sparks from any source. Eave-spouting should be so arranged that the igniting of the dust, which often fills them, will not set fire to wooden cornice, roof boards, or be drawn into the mill between the rafters.

A larger number of steam mills burn from faulty boiler houses and defective stacks than should. It is quite as important that the boiler house roof be fire proof inside as on outside.

Iron stacks soon become defective, if they are not so in some respects, when erected, and should pay more than the usual half of one per cent extra, because, in permanent improvements, they almost invariably indicate less safe and thorough construction generally.

Lights in a mill, properly arranged for even distribution of daylight, for general purposes, can be stationary globe lamps, of approved style, taking their ventilation from outside the mill, and discharging the heated air through a series of alternating perforated plates, at least eight inches above the flame. The danger of a lamp is not so great at its top, as there is an upward current; but the draft must be thoroughly protected with a series of perforated plates or Davy gauze. Moveable lights must be enclosed in protected globes, and be ventilated by a series of perforated plates or Davy gauze. at bottom and top, and supplied with lard oil only.

Among the incendiaries physical, the chief source of ignition in flour mills is from frictional heat. Incipient fires are more often discovered and extinguished in flour mills, than is generally known by underwriters. This research has brought out many instances of miniature explosions, friction fires, and peculiar starters, which were not only extinguished without special damage, but which, for the good of the milling cause, not less than for the serenity of insurers, were hidden under a bushel. We enjoin millers not to let their lights shine, which, figuratively, is superfluous, and, practically, is now seconded by a motive of self-preservation.

Millers are exceedingly non-committal in such matters, as well as to all causes and effects incident to their pursuit. This peculiarity of millers has developed two erroneous conclusions among insurers; first, that the origin of mill fires is mysteriously unascertainable; and, second, that nearly all ignitions prove fatal.

The degree of care in the supervision of machinery is a vital element in the longevity of flour mills. Regardless of speed rate, there are few devices in the flour-mill that do not, in some degree, add to the fire contingency. Even hand tools may be displaced, and become the fire-producing means of some attending cause.

Only a high grade of lard oil, sperm oil. and tallow, should be used for lubricating. It is not safe to depend on getting a reliable mineral oil. There is so much compounding of the same that it is difficult to distinguish good from bad. Recently fire commenced flying in every direction from a power pulley on line shaft; the machinery was stopped, and, on examination the bearing was not heated. The display was caused by flashing of poor quality of black oil. In flour mills a great mistake is made in employing men of inferior ability to oil machinery. The oiler should be a man of system and understand all indications of improperly working gear, and of deficient oil. He should be a judge of oil from its actions in use.

Experienced millers agree that elevators are the most prolific source of flour mill fires. 1. The chief point of danger from elevators is at the pulley head. The confined space under the pulley, and between it and the cross, or strut board, fills up with dust and various materials, and keeps accumulating, if not removed, until the pressure and friction of the pulley face upon it produces ignition. 2. Elevator legs stand very nearly vertical, and, of course, maintain the height originally given them, while other mill timbers, joists, &c., shrink, crosswise of the grain, settling the line shafting, and often letting the under face of the pulleys down on to this strut board. In this position, wooden pulleys have been found, in chop elevators, by friction of face, to have cut entirely through hard inch poplar, wearing away the nails. which secure the side boards, equally smooth. These boards have been found charred where the frictional fire, for want of vent, had expired. 3. Elevators often clog, and the running pulley, in the stationary belt, alone rapidly produces frictional heat and sometimes starts a fire. It is sure to do so, if the belt is cotton; even leather belting has been found burned off, and head boards charred from this source. 4. The pulley sometimes is untrue, and, by friction against the side boards, has been known to cause fire. 5. With this concealed space full of fine dust, which it rapidly collects, with the pulley face bearing on the strut board, or, equally bad, on this compressed accumulation of material beneath, and the face of the pulley running in the clogged belt on top side, or the pulley running against side boards, will produce frictional heat with intense rapidity; and, although the centre revolutions are simply 40 per minute, only a few minutes are required for the face, running 300 feet a minute, to start a fire.—Elevators, for handling grain exclusively. may be successfully run at double this speed, or have a face motion of 600 feet per minute, which may be accomplished on the same shaft with a larger pulley; as grain is more easily delivered from the cups than chop or mill product.—6. Fire, at this point, may linger for many hours before breaking out. Its location prevents ready detection, and, once fairly started, has great destructive advantage. 7. A prominent mill-wright, of milling experience, says that he has found side boards, on pulley heads, worn almost entirely through by the friction of the belt and cups; and also many instances where frictional fires had started and smothered out

8. The strut boards should be given sufficient inclination, from the up spout to the down spout, so that material, falling

on it, will run to the lower side and pass into the down spout, through a hole made for that purpose. This arrangement will also ventilate the pulley.

9. The pulley should be iron, with the face slightly raised in the centre so as to draw the belt centrally. 10. It should also have a beveled shear, on each edge of face, like flange of a car wheel, to keep belt and cups from contact with sides of spouts and head. It should be enough wider at outer edges of the shear flange, to carry over any dislodged material. These two precautions will prove a great protection and should be insisted on everywhere, as the old dangerous style is almost universally used in all elevator heads. Elevators, like spouting, there being so many in flour mills, have proved great obstacles in the way of extinguishing fires; besides facilitating its rapid spread. An effectual remedy for the same will be named later.

11. Elevator boots are sources of considerable hazard, chiefly from strings and other refuse getting wound round the lower pulley, binding, and producing frictional fires. Numerous fires have started in smaller mills, from this source, where grain is handled more in bags All elevator boots need care, and would be safer if entirely of metal.

The fire contingencies of the usual mill-stone system are better understood by millers generally than any other cause, and rank among the chief sources of mill fires. 1. Any metallic substance, between the burrs, will not only strike off sparks, but will become red-hot before it is let go at the skirt. 2. Danger from this source is not particularly reduced in high grinding, without magnets, because the burrs, running dry, would still strike fire; and any hard substance, passed between them, would produce the same result, by bringing one side of runner in contact with the bedstone. 3. The centre speed of mill stones, in high milling, is reduced to from 120 to 150 turns, but this rate will give a surface speed of about 1600 feet per minute, at the runner's skirt. 4. The necessity of a more perfect tram and running balance, in modern burr milling, and the setting of the runner higher, and reducing the temperature of the chop to about 500 higher than the mill atmosphere, may somewhat reduce the contingency of fire from frictional sparks; but the possibilities from increased number of operations, on the same amount of grain, will fully offset it.

5. Automatic tell-tale bells, attached to all feed spouts, should be indispensable, especially, as so much regrinding increases the tendency to clog.

6. While the chief object of using the mill-stone exhaust is to grind cooler, a proper form of it will greatly reduce the danger from frictional fire, but improper styles have been prolific aids to explosions therefrom. 7. Any style of mill-stone exhaust, that does not condense the dust at the stones, but blows it through a spout into a dust-house inside of the mill, increases the danger of explosions and should not be tolerated. 8. Numerous explosions have been promoted by this style of exhaust. Prominent among them were the Tradestone mills. 9. The Behrn's mill-stone exhaust, with a metal, spiral, automatic drop for the chop. and exhausting outside the building. is the proper style, and has no objectional features. 10. Several cases are instanced, where frictional fire, inside the curb, entirely destroyed the dustscreens of Behrn's exhaust, without communicating the fire to any other part. 11. Any style of exhaust, that does not carry dust through its conduits, that discharges the air outside the mill, and provides an automatic cut-off to smother sparks in the chop delivery, is reasonably safe. Mr. Gustav Behrns, a civil engineer of Lubeck, Germany, who has made flour mill explosions a special study, speaks as follows of the danger from mill-stone sparks: "Through a series of observations, made wide and near, extending over the four years of time, and embracing over a thousand runs of burrs, the writer found that in one year for every 122 run of burrs at work, one run of burrs, on an average, will afford a practical illustration of the ability of these sparks to accomplish destruction."

12. Automatic mill-stone lifts, as a precaution, are noteworthy. 13. Fruin's is a simple device and cumberless; when set, if the burrs run dry from any cause, the cords, weights and lever attachments to the lighter rod under the floor, raise the runner and divert the certain dangers of this condition. They are said to be efficient safeguards, and their use should be encouraged.

There are two leading mill systems, both being introduced as fast as they can be produced—the Stevens and Grays. 1. Both are successful, but each possesses a special advantage over the other at certain points of reduction, and the combination of the two is desirable. 2. Stevens' rolls on the first two, and Gray's on the last three reductions, with Stevens' rolls for cleaning the bran, gives the best results.

Bolting chests are chiefly augmentative, and still, numerous accidents from ignition of dust have occurred from use of open and improperly protected lights during their supervision. The known result of some of these was simply to singe the miller's hair, knock him off the step-ladder, or flash and expire from concussion of air.

A remarkable instance occurred in a Cleveland mill. The fire filled the entire bolt, and was extinguished only by thoughtfully breaking the upright bolt power shaft, stopping the reels, and beating the fire out with brooms; the fire had extended to the dusty, cobwebbed beams. A miller, in the same city, tried to insert an open light into a bolting chest of a large mill; he had strength enough left to crawl out, but had not the courage to tell the adjusters, much less his employers, how the fire started. Perhaps he did not wish to expose the hazard of such action

Bolting chests should have glass plates, at ends and sides, through which to observe the operation without opening, and provided with tight fitting slides on inside, to remove the dust, and to take their place in case the glass is broken. They should be placed with gear ends towards the best light, and so banked above each other, as will simplify their supervision, and concentrate their possible oil drippings and dust. Belt gear is preferable, because there is less greasy waste from it, and the danger of frictional sparks from bound wheels is removed.

Purifiers of endless number and variation are in the market, and more coming.

Imperfect exhaust conduits, from purifiers, sometimes deposit quantities of dust on the machine and in the mill. This is liable to absorb oil, and, if put into feed or stock bins, is exceedingly apt to produce spontaneous combustion. Fully a half bushel of product was recently seen on the top of a purifier around a defective joint of its exhaust spout; also a quantity of same on the floor, with a puddle of oil in it. It was removed, but not to the stock bin. Purifiers need scrutinizing care, should be concentrated on the main bolting floor, if possible, for convenience of supervision, and for cleanliness generally.

Exhaust and blast fans, of large size, for collecting and condensing dust from many machines, are speeded from 1000 upwards; the resistance of air in such produce a heavy draught on their bearings, and they must have proper and frequent attention.

The dust house should be outside the mill, with a solid wall on the mill side, even when dust from reducing machinery, is not discharged into it. A dust house in the mill, with direct exhaust into it from the burrs, renders the property uninsurable at any obtainable rate. There are some averaged sized mills, that have a dust room of canvass sides in mill attic; it is a mystery that such are insured at all. All equally dangerous devices should be so discriminated against, by rate, as to remove them.

The mill owner may often be ignorant of the extreme danger of such fire-traps; his interest is to put dollars in his pocket, that of insurers, to avert danger and ignition: therefore, the surest argument against defects must be a discriminating tariff, invariably collected if deficiencies are not corrected, or declination of the risk. Many disastrous fires have been averted by dust houses being outside the mills, the most recent being that of the Camp Spring Mill at St.

Louis. If necessary, a lightly constructed dust house, with substantial base, may be made approximately safe on the top of mill building.

If dust rooms must be made inside the mill, then choose the compartment, or dust arrester style, with heavy and substantial internal walls, and built against outside openings of the same or nearly equal width, covered only by light iron-clad material, which may be easily blown outward without weakening the mill structure.

Explosions have received a disproportionate attention and concern among insurers, when the number of destructive fires is compared with others unattended by them. Fatal explosions are not of such frequent occurrence as to overshadow other contingenaies. It is not the number, but the size of mill fires, augmented by explosions, that have hurt insurers, and made them sensitive on this point. However, this investigation discovers that the number of mill explosions which prove fatal enough to attract attention, or become public, do not exceed twenty per cent of those that occur.

That mill dust of all kinds will explode, in air contact with flame, is an undeniable fact, but the evidence that flour dust possesses the destructive power attributed to it, is not conclusive. There have been many explosions, where there was detached and agitated dust enough present, to have entirely annihilated the premises in which they occurred, had there been any such force in flour dust alone. The difference in the effect of various explosions of flour dust, as compared with that experienced in "Washburn A," shows that there must have been an element present in that mill which was absent from the others. Nothing less will account for the wide difference in results from a supposed unit.

It is a noticeable fact, that the most destructive flour mill explosions have occurred in water.power mills, and have been equally as devastating to portions where mill dust could not have aided expansion, as they were in the dust accumulating portions. In "Washburn A." the very foundations were moved at the base on the solid rock, two floors below existing mill dust. Had the immense expansion come entirely from dust combustion above, it would have crushed, instead of spreading, the lower abutments. Mill dust, in this instance, must have been supplemented by a combination of carburretted hydrogen, or, possibly, by fire damp. While hydrogen gas is produced mechanically, by forcing steam through metallic compounds under extreme heat, "fire damp" naturally forms in moist, unventilated atmospheres. Fire damp is nothing but carburretted hydrogen gas, showing that hydrogen may be freed from water by a process of nature, unattended by heat. The inflammable element of petroleum and its products is hydrogen. Naphtha consists of equal parts—hydrogen and carbon. The theory proposed is that the friction on the water of two 48-inch turbine wheels, under a 40 foot head, discharging 77,600 gallons per minute, and furnishing 600 effective horse power in the race, under "Mill A's" 30 foot basement, may have produced either hydrogen or fire damp, in such quantities as to be forced up into the mill and there changed to hydrogen gas. In short, that hydrogen was produced, and being naturally over 14 times lighter than common air, passed up through the mill, and became properly carburretted, by combining with the elements incident to flour milling, and was the chief destructive element in that explosion.

It is stated by a person familiar with the scene that flame was communicated through the water way underneath to the "Diamond" and "Humboldt" Mills almost instantaneously, causing, in proportion, equally terrific destruction. If this is the fact as to fire contact, then fire damp, or carburretted hydrogen, must have been an attending agent in those explosions which proved totally destructive.

Vindicative argument cannot be made here, but simply suggestive. Hydrogen's subtle, colorless, tasteless, and inodorous nature rendered its detection impossible. Its most violent effects are produced by a mixture of two volumes of hydrogen to one volume of oxygen.

(To be continued in our next.)

SOCIETY NOTES AND ITEMS.

Alfred Shortt, Esq., has been appointed General Agent of the City of London Fire Insurance Company for Nova Scotia and Prince Edward Island.

City of London Fire Insurance Co.—Messrs. H. Chubb & Co. have been appointed General Agents for this Company at St. John, N. B. Messrs. Chubb & Co. also represent the Citizens Insurance Company of Montreal.

Mr. Thos. B. Macaulay, whose article we re-print this month from the *Assurance Magazine*, has entered his active protest against the state of single blessedness, by taking to himself a wife. He has the good wishes of INSURANCE SOCIETY for his future.

Mr. Fred. W. Hyndman has been appointed Sub-Agent for P. E. Island, of the Fire Insurance Association (Limited) of London. Mr. Hyndman is also General Agent for P. E. I. of the North American Mutual Life Insurance Company, and agent of the Great Western Marine Insurance Company of New York.

News comes from a Pennsylvania county that the people of that locality are sick of death-bed insurance, and that on a certain day in the early part of this month a public meeting was held, when those who were tired of paying assessments on their speculative policies, destroyed the fraudulent documents by fire. May the blaze increase.

Messrs. Nott & Hanson, of Montreal, General Agents in Canada for the Marine Insurance Company (Limited) of London, and local agents for several other Companies, have dissolved partnership. Mr. Nott retains the agency of the Marine Insurance Company, while Mr Hanson carries on a general brokerage business, which his popularity and large connection will undoubtedly make very profitable.

The fire loss in Milwaukee last month was but $625. Property owners look at the figures and wonder "why in thunder insurance rates are so high" The other months that are past and those that are to come furnish the answer, but you can't get an insurance buyer to appreciate the reasonableness of it. He wants his rate based on the exceptionally good figures, but to have insurance he must yield obedience to the law of average. —*Chronicle.*

The number of fires in the United States and Canada reported by the *Chronicle* table for the month of September was 788, with an aggregate loss of $6,433,500, the loss to insurance companies being $3,121,700. Of the above amounts, the aggregate loss on specials was $5,068,300, and to insurance companies on the same, $2,574,300. These amounts do not include losses by forest and prairie fires, which probably approximate ten million dollars.

It has been known to Insurance men for some time past that the business of the Dominion Insurance Company was not such as to induce the Directors to carry on what was merely a struggle for existence. No one, therefore, was surprised to learn that the business of the Company had been purchased by the Fire Insurance Association of London. There are many desirable risks on the books of the Dominion, which, if they can be retained by the purchasing Company, will be a large item in their business.

INSURANCE DECISIONS.

QUEBEC.

COURT OF REVIEW.

Montreal, April 29th, 1881.

TORRANCE, RAINVILLE, JETTÉ, J.J.

[From S. C., Montreal.

DUNSTIN *v.* THE HOCHELAGA MUTUAL FIRE INSURANCE CO.

Mutual Insurance Co.—Consent to the Insurance.

The statutory requirement applicable to insurance in Mutual Fire Insurance Companies, that the consent of the Directors must be signified by an endorsement on the Policy, or other acknowledgment in writing, is not satisfied by evidence of mere knowledge by the insurers of other insurance.

The judgment from which the present inscription was taken, was rendered by the Supreme Court, Montreal, (Johnson J.), Jan. 31st, 1880, dismissing the action. The Learned Judge made the following observations:—

"This is an action to recover the amount of a fire policy, and the defendants, being a mutual society, plead the statute which voids an insurance contract where there has been another insurance effected without their consent; and also a special condition of the policy (No. 5) to the same effect. This is the principal point in the case. A variety of circumstances were adverted to, tending to show a knowledge by the defendants of the existence of another contract. That, however, does not appear to me, under any reasonable view of the law, to be enough. There must be consent. The words of the statute are: 'unless the double insurance subsists with the consent of the directors, signified by endorsement on the policy, signed by the manager or secretary, or other officer authorized to do so, or otherwise acknowledged in writing.' This is not satisfied by evidence of mere knowledge on the part of the insurers of other contracts. Besides, the evidence seems to me to show that the Company only took the risk because they understood the application to the other office had been withdrawn. There are other points raised, but I do not enter upon them, because I am of opinion to maintain defendants' first plea, and dismiss the action."

In Review, the judgment was confirmed, Jetté, J., dissenting.

OFFICIAL REPORT OF THE CHATHAM FIRE DEPARTMENT.

The reports of the years not mentioned below having been lost, it is impossible to give then:—

	Department in Service.	Department on Ground.	False Alarms.	Total Fires and Alarms.	Value of Property in danger.	Value of Property Destroyed.	Value of Property Saved.	Amount of Insurance.
					$	$	$	$
1861	13	12	5	30	6,000	3,968	2,032	2,500
1862	7	8	3	18	14,950	469	14,464	266
1865	8	14	5	27	15,100	11,500	3,600	2,700
1866	6	2	1	9	55 650	18,582	37,068	18,582
1867	6	3	1	10	6,795	4,300	2,495	.....
1868	14	4	2	20	57,450	22 801	34,649	22,801
1872	24	6	5	35	81,358	36,181	45,204	22,855
1873	13	2	2	17	53,103	22,615	30,488	20,800
1874	9	7	2	18	47,250	26,175	21,075	15,325
1875	12	9	3	24	23,475	6,795	16,680	6,795
1876	15	8	2	25	124,100	44,724	79,376	25.614
1877	12	12	15	27	5 ,035	17,030	33,005	16,850
1878	7	12	6	17	41,133	30,420	10,713	25,550
1879	3	6	7	13	11,925	11,450	475	6,000
1880	12	12	5	17	131,225	15,670	74,526	63,125

[Such information as the above we shall always be glad to receive from those whose duty it is to compile statements of the kind.—ED. INS. SOC.]

Fires in Canada during the Month of October, 1881.

EXPLANATION OF ABBREVIATIONS.

S 34, **B** 104, 243, means—Sheet 34; Block 104; No. 243 on plan. **O**, Owner; **T**, Tenant; **Ca.**, Cause of fire. Nos. after name of place are days of month. In Loss and Insurance columns **B** means Building; **C** Contents.

PLACE.—No. ON PLAN.—BUILDINGS BURNT.	Approximate. Total Losses.	Losses to Ins. Cos.
ONTARIO.		
Acton, 27th, dwelling, **O** H. E. Gomlinton.	$500	.....
Athol Tp., 26th, barns, **C** S. Crandell; **Ca** smoking.	2220	$1700
Beamsville, 1st, barn and shed, **O** J. B. Osborne.	300	.....
Belleville, 22nd, shop and dwelling, **O** Mrs. Horne; **Ca** lamp explosion.	3000	1500
28th, dwelling, **O** B. Travish.	523	523
Grocery and dwelling, **O** D. Blondin.	800	500
30th, vacant building, **O** J. Wylie.	500	.....
Tin shop, **O** L. Quick.	240	240
Biddulph Tp., 1st, barn and contents, **O** T. E. Hart; **Ca** incendiary.	300	300
Brooklin, 6th, barn, **O** S. M. Thomas.	800	600
Bracebridge, 6th, steamer "Rosseau,"	.....	.....
Brockville, 27th, **S** 7, **B** 65, No. 10, machine shop, **O** W. Gilmour, **T** Small & Sheppard; **Ca** spontaneous combustion.	2000	2000
Brougham, 19th, carriage shop, **O** Webb, **T** Voms & Newport.	1500	1000
Brantford, 2nd cigar factory, **C** J. R. Holmes. **T** A. Fair.	1000	500
	7000	6000
11th, spice mills, **O** R. J. Forde & Co.	2000	1000
Brantford (near), 7th, barn, **O** P. Boneham.	3000	2000
Bruce Tp., 25th, barn, **O** A. McLaren; **Ca** incendiary.	2500	1300
Cardinal, 28th, steamer "Island Belle."	5000	2000
Cavan Tp., 25th, barn, **O** R. Porter.	250	175
Cobourg, 4th, block of stores, **O** Dumble.	13000	9000
Hardware, **T** Mulholland.	10000	8000
Grocery, **T** Sutherland & Co.	7500	6000
Grocery, **T** W. Burnet.	5000	3200
Hardware, **O** & **T** Hayden.	6600	6600
Dry goods, **T** Cove, Sanderson & Rose.	1000	1000
Grocery, **O** & **T** Hervey & Son.	700	700
Millinery, **T** Misses Wiseman. Jewellery, **T** Wicks & Sons. Books and stationery, **T** J. Fox. Stationery, **T** George Curry. **T** Gt. N. W. Tel. Co.	1000	1000
Shop, **O** Mrs. Clark.	179	179
21st, vacant foundry, **O** G. M. Clark; **Ca** incendiary.	.....	.....
Duffin's Creek, 16th, church.	250	250
Duntroon, 3rd, storehouse, **O** W. Campbell.	1300	600
Eldon, 14th, barn, **O** A, McAlpine; **Ca** spark.	1914	1914
Elmira (near), 14th, Peel Butter and Cheese Factory.	5000	1500
Formosa, 6th, brewery, **O** J. Fehrenback.	10000	3000
Galt, 28th, **S** 2, **B** A, No. 8, woollen mill, **O** J. Wardlaw; **Ca** lamp explosion.	6453	6453
Gloucester Tp., 9th, barns, **O** W. Borthwick.	2000	.....
Hamilton, 2nd, Hamilton Tack Works.	1000	1000
9th, dwellings, **O** Stenson Estate.	1500	.....
24th, soap factory, **O** James Walker; **Ca** engine.	300	300
Hornby, 28th, hotel, **O** E. J. Walsh; **Ca** defective flue.	1000	600
Hungerford Tp., 3rd, dwelling, **O** J. Finlay.	$1500	$600
Huron Tp., 7th, barns, **O** P. Murray; **Ca** incendiary.	2000	1000
Inkerman, 6th, dwelling, **O** Redmond, **T** Ennis.	600	400
Carriage shop, **O** J. McEwen.	620	620
Innisfil, 6th, barns, **O** W. R. Coleman; **Ca** child and matches.	3500	None.
Kingsmill, 8th, stable, **O** N. Kingsmill.	103	103
Lindsay, 23rd, dwelling, **O** R. Smith.	300	300
T Wolhouse.	400	.....
London, 3rd, Talbot street, stables, **O** Seals, **T** O'Neil; **Ca** incendiary.	150	150
8th, King street, hotel stables, **O** & **T** Deacon	380	380
20th, Talbot street, **B** 27, No. 528, hotel stables, **O** and **T** McMartin; **Ca** incendiary.	2264	2264
22nd, York street, stables, **O** & **T** Capt. Groves; **Ca** incendiary.	200	.....
23rd, **B** 28, 532 Talbot street, hotel stables; **O** S. Crawford, **T** C. Knapp.	325	275
27th, Bathurst street, dwelling, **O** & **T** Mrs. Clark.	200	200
Lucan, 1st, shed, **O** T. E. Hall; **Ca** incendiary.	100	.....
Marlborough Tp., 12th, dwelling, **O** W. Cowan.	900	900
Marmora, 17th, barn, **O** McIlwain.	2000	1000
Minton Tp., 8th, barn, **O** W. Cardwell; **Ca** lightning.	2000	1200
Mulmur Tp., 20th, dwelling, **O** W. Ratter.	300	300
McGillivray Tp., 6th, barn and stable, **O** W. Cook; **Ca** child and matches.	550	320
Neustadt, 13th, cabinet factory, **O** Foster & Tucksch.	5000	1000
Newcastle, 25th, dwelling, **O** Mrs. J. Sims.	231	231
27th, marble works, **T** A. Petier.	1000	1000
Niagara Falls, 4th, barn, **O** Whitty; **Ca** incendiary.	100	.....
North Williamsburg, 1st, barn, **O** D. McArthur; **Ca** defective pipe.	1400	1022
Orangeville, 27th, dwelling, Can. Pt., L. & S. Co.	400	400
Osgoode Tp., 13th, barn, **O** J. Rowan; **Ca** incendiary.	400	250
Ottawa, 6th, Ann street, dwelling, **T** C. Medlow.	800	.....
29th, Wellington street, brewery, **O** Brading.	20000	.....
Pakenham, 13th, barn, **O** P. Quigley.	600	300
Paris, 27th, dwelling, **O** C. B. Watts, **T** T. H. Metcalfe.	1100	800
Park Hill, 20th, station, **O** G. T. R. Co.; **Ca** spontaneous combustion.	.....	.....
Peterboro', 16th, old pump factory; **Ca** incendiary.	900	.....
Tannery bark shed.	20000	.....
Pickering, 27th, college.	428	428
Port Elgin, 3rd, mineral spring bath house.	500	200
18th, barn, **O** D. Currie.	500	200
Scanlon Tp., 4th, dwelling, **O** J. Lowrie; **Ca** spark from oven.	1060	600
Seaton, 21st., dwelling, **O** J. B. Johnston.	500	300
Sidney, 2nd, barn, **O** Armstrong; **Ca** children and matches.	2000	.....

PLACE.—No. ON PLAN.—BUILDINGS BURNT.	Approximate. Total Losses.	Losses to Ins Cos.
Stephenson Tp., 1st., dwelling, **O** W. T. Openshaw; **Ca** bush fires.	$1400	$1400
Toronto, 5th, No. 183 King street east, paints and oils, **T** A. Hamilton.	703	703
22nd, coal and wood, **O** P. Burns.	2500	2200
Wallaceburg, 1st, dwelling, **O** H. Marcheter; **Ca** spark from tug boat.	400	200
Whitevale, 16th barn, **O** T. Pugh.	1500	.....
Williamsburg, 30th, barn, **O** D. Fritz.	300	300
York Tp., 29th, dwelling, **O** D. Brooks, trustee.	1500	600
QUEBEC.		
Aylmer, 26th, bending factory, **O** J. McDairmid.	10000	1000
Bienville, 21st, dwelling, **O** P. Macnaughton.	298	298
Hochelaga, 6th, Frontenac street, block of tenement dwellings, **O** Letourneux and James Howley.	10000	3500
Montreal, 7th, 759 Craig street, lithographer, **O** J. Whelan.	907	907
Boots and shoes, **O** H. Ashley.	850	850
11th, Craig street, saw mill, **O** P. Donnelly; **Ca** dry kiln.	130	130
18th, No. 126 George street, dwelling, **O** Weir, **T** J. McGuire.	162	162
21st. St. Gabriel Locks, machine shop, **O** J. McDougall; **Ca** coal oil lamp.	145	145
21st, C. P. R. street car.	250	250
28th, William street, storehouse. **O** J. McDougall.	100	100
29th, 202 Lagauchetiere street, stable, **O** A. Purcell.	190	190
Pointe aux Trembles, 8th, barns, **O** D. Moreau.	1000	.....
Quebec (near) 11th, dwelling, **O** J. Highfield.	440	440
St. Nicholas, 22nd, dwelling, **O** L. Lambert.	1500	1000
Ste. Therese, 5th, college, **O** Corp. de Petit Seminaire.	90000	40000
Four dwellings, **O** & **T** various.	3000	1000
St. Cæsaire, 1st, steam saw mill, grist mill and cabinet factory, **O** Morin & Co.	11275	5325
T L. Vaduais.	750	300
T Nap. Smith.	2314	1000
Stanbridge Station, 6th, dwelling, **O** Mrs. G. O. Metcalfe.	600	450
Three Rivers, 4th, dwelling, **O** J. B. Normand; **Ca** spark from flue.	100	60

PLACE.—No. ON PLAN.—BUILDINGS BURNT.	Approximate. Total Losses.	Losses to Ins. Cos.
NEW BRUNSWICK.		
Carleton, 12th, **S** 1, **B** 52, dwelling, **O** & **T** R. Rossiter; **Ca** spark from flue.	$550	$550
S 1, **B** 71, dwelling, **O** & **T** T. Hill.	700	400
Centreville, 9th, barn, **O** & **T** J. Hawkins.	1000	.....
Cunningham, 4th, smoke house, **O** & **T** G. E. Fountain.	400	.....
Deer Island, 3rd, dwelling, **O** & **T** Capt. A. T. Lloyd.	1000	500
Elgin, 6th, store and school, **O** A. Rogers, **T** Steeves Bros.	1500	.....
Gaspareaux, 9th, dwelling, **O** & **T** T. Christie.	400	150
Golden Grove, 17th, barn, **O** & **T** J. Fawcett.	600	.....
Keswick Ridge, 9th, barns, **O** & **T** D. Jones.	1000	.....
Milledgeville, 11th, dry house, **O** & **T** E. D. Jewett & Co.; **Ca** sparks from steam mill.	1200	.....
Oxford, 4th, dwelling, **O** & **T** T. King.	800	.....
Pollett River, 4th, barn, **O** & **T** A. Styles.	1600	300
Quispanesis, 22nd, barn, **O** & **T** M. Perry.	600	500
Rothesay, 3rd, barn, **O** & **T** Manlow Harrison.	600	300
St. John, 14th, **S** 4, **B** 117, No. 29, shop, **O** J. & R. Reed, **T** J. Kennedy and J. McCormack; **Ca** defective flue.	800	800
St. Stephens, 26th, grist mill, **O** W. & L. Thompson.	4000	2500
NOVA SCOTIA.		
Cranberry Island, 13th, light-house, machine shop, dwelling and outbuildings, **O** Dom. Government.	.....	.....
Halifax, 18th, cor. Granville and Duke streets, building, **O** Estate Dechezrow & Crowe.	4000	4000
Confectionery, **T** J. Cohn.	2000	2000
Tailors' shop, **T** Davidson & Co.	1500	1500
Jewellery, **T** Cohn.	1000	1000
Lorway Colliery, 4th, buildings; **Ca** incendiary.	10000	.....
P. E. ISLAND.		
Crapaud River, 13 buildings, **O** & **T** various.	20000	5000
MANITOBA.		
Winnipeg, 19th, hotel, **O** V. D. Tarrante.	800	800

ERRATA AND OMISSIONS IN SEPTEMBER FIRE RECORD.

Notices of emendation inserted here if forwarded in time for next issue.

OMISSIONS.

PLACE.—BUILDINGS BURNT.	Losses.	Insurance Paid.
Dundas, 27th, **Sheet** 4, **Block** H, No. 77, hotel and stables, **O** & **T** J. Williams	$8,500	$6,100
75, Dry goods shop and dwelling, **O** & **T** Miss Ramsay	5,000	800
67, Groceries, **O** & **T** P. & R. Lang	7,000	6,000
66, Hardware, **T** J. F. Smith	10,000	6,000
83, Flour and feed, **O** J. Webster, **T** W. P. Crawford	750	500
82, Boots and shoes, **O** & **T** Mrs. W. P. Davis	750	500
81, Dry goods shop, **O** Mrs. Brown, **T** Miss Mason	1,000	.....
S 3, **B** H, Nos. 62, 63, 64 and 65, clothing, **O** Miss Laidlaw	2,000	1,500
T T. Seaman	2,000	375
56, 57 and 59, vacant, **O** Mrs. Filman	2,500	2,000
Agricultural implements, **O** & **T** J. P. Billington	15,000	.....
Dwelling, **O** & **T** J. P. Billington	1,500	1,000
Dwelling, **O** M. Mulhorn	1,200	.....
Dwelling	1,500	.....
Victoria, B.C., 29th, steamer "Elizabeth Irving," and freight	150,000	.....

LIST OF INSURANCE PLANS

PUBLISHED BY

CHAS. E. GOAD - - - - CIVIL ENGINEER,

102 St. FRANCOIS XAVIER STREET, MONTREAL.

ONTARIO.

Ailsa Craig
Alexandria*
Alliston*
Almonte
Amherstburg
Arnprior
Ancaster*
Arthur*
Ashburnham*
Aurora
Aylmer
Byr*
Baden*
Barrie
Beaverton*
Belleville
Berlin
Blenheim
Blyth
Bobcaygeon
Bolton*
Bothwell*
Bowmanville
Bracebridge*
Bradford
Brampton
Brantford
Brighton
Brockville
Brooklin*
Brussels
Caledonia
Campbellford
Cannington*
Carleton Place
Cardinal*
Carronbrook*
Cayuga
Chatham
Chippawa*
Clarksburg*
Clifford*
Clifton
Clinton
Cobourg
Colborne
Collingwood
Cornwall
Dresden*
Drummondville*
Dundas
Dunnville
Durham
Elmira*
Elora
Essex Centre
Exeter
Fenelon Falls
Fergus
Flesherton*
Fort Erie*
Fort William*
Galt
Gananoque
Georgetown
Glencoe*
Goderich
Gravenhurst*
Grimsby*
Guelph
Hamilton
Harriston
Hastings
Hawkesbury*
Hespeler*
Ingersoll
Jarvis*
Kemptville
Kincardine
Kingston
Kingsville*
Lakefield*
Leamington*
Lindsay
Listowel
London
L'Orignal*
Lucan
Lucknow
Lyn*
Madoc
Markham*
Meaford
Merrickville
Merritton
Millbrook
Milton
Mitchell
Morrisburg
Mount Forest
Napanee
Newbury*
Newcastle
New Edinburgh*
Newmarket
Niagara Falls.
Norwich
Oakville
Odessa*
Omemee
Orangeville
Orillia
Orono
Oshawa
OTTAWA
Owen Sound
Paisley
Pakenham*
Palmerston
Paris
Park Hill
Pembroke
Perth
Peterboro'
Petrolia
Picton
Point Edward
Port Burwell*
Port Colborne
Port Dalhousie
Port Dover
Port Elgin
Port Hope
Port Perry
Port Stanley
Prescott
Preston
Renfrew
Ridgetown
St Catharines
St Mary's
St Thomas
Sarnia
Seaforth
Shannonville
Simcoe
Smith's Falls
Southampton
Stayner
Stirling
Stouffville*
Stratford
Strathroy
Streetsville*
Tamworth*
Teeswater
Thornbury*
Thorold
Tilsonburg
TORONTO Vol I.
" " II.
Trenton
Tweed
Uxbridge
Walkerton
Wallaceburg
Wardsville
Warkworth
Waterloo
Watford
Welland
Whitby
Windsor
Wingham
Woodbridge*
Woodstock
Wroxeter
Yorkville*

QUEBEC.

Acton*
Aylmer
Beauharnois
Bedford
Berthier*
Brigham
Buckingham*
Coaticook
Coteau St Louis
Cowansville
Danville*
East Farnham
Frelighsburgh
Granby
Hemmingford
Hochelaga
Hull*
Huntingdon*
Joliette
Lachine
Lachute
Laprairie
L'Assomption*
Lennoxville
Levis
Longueuil
Maskinonge*
MONTREAL, Pt I.
" " II.
" " III.
Nicolet
Ormstown (D'r'm)*
QUEBEC
Quebec Coves North Side
Quebec Coves South Side
Richmond
Riviere du Loup*
Rock Island
St. Andrews*
St Cunegonde
St. Eustache*
St. Gabriel
St. Henri
St. Hyacinthe
St. Jean Baptiste
St. Jerome
St. John's
St. Louis of M'e E'd
St. Scholastique*
St. Therese*
Shefford*
Sherbrooke
Sorel
Stanbridge*
Stanstead
Sweetsburgh*
Terrebonne
Three Rivers
Valleyfield.
Waterloo
West Farnham

P. E. ISLAND

Alberton*
Charlottetown
Georgetown*
Princetown*
Souris*
Summerside*
Montague*

MANITOBA.

Winnipeg
Emerson
Portage-la-Prairie

NEWFOUNDLAND.

ST. JOHN'S
Harbour Grace
Carbonear

NOVA SCOTIA.

Amherst
Annapolis
Antigonish
Arichat*
Bear River*
Bridgetown*
Bridgewater*
Canso*
Chester*
Dartmouth
Digby
Guysborough*
HALIFAX
Kentville
Liverpool
Lunenburg*
New Glasgow
Pictou
Shelburne*
Stellarton*
Sydney
Truro
Windsor
Wolfville
Yarmouth

NEW BRUNSWICK.

Bathurst
Campbellton
Carleton
Chatham
Dalhousie
Dorchester*
Fredericton
Grand Falls*
Hillsborough*
Moncton
Newcastle
PORTLAND
Petitcodiac*
Sackville
Salisbury*
St. Andrews
ST. JOHN
St. Stephen
Shediac*
Sussex*
Woodstock

* Places thus marked, mostly small villages, will be surveyed as soon as required.

Printed Appliance Reports are prepared of most places above noted, giving information respecting means of protection against fire, etc.