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IN OUR ISSUE for September 15, we called attention to the fact, reported to us from an apparently reliable source, that the State Mutual Life of Worcester, Mass., was doing business in Canada without legal authority. This statement the *Standard* of Boston, apparently on the authority of the officers of the company, denied, and our contemporary called for proof or retraction of the statement. Very well, we are prepared to state that a merchant of this city has solicited his acquaintances to apply for policies to the above company, with the promise that a rebate of twenty-five per cent. of the premium would be made on policies thus issued. We are prepared further to state that, on the 31st day of last August an application for a policy in the State Mutual Life was duly made out by or for a gentleman in this city, a resident of Canada, and the medical examination therefor was made in London, Ontario, and the application forwarded to the company, which duly issued a policy thereon. The name of the applicant is in our possession. We further state, that about two years ago a policy was issued by the same company on the life of a resident of Montreal, who was examined by a French doctor also of Montreal. Since writing the above, the *Standard* for October 10th is at hand, stating that the company now admits that two policies have been issued on the life of Mr. Hodgson, a resident of Montreal, but through Mr. Anderson, their New York agent. Policies were, we think, issued to two Messrs. Hodgson, brothers. Our statement is therefore confirmed by the company itself, which, we are glad to see, disclaims any intentional violation of our laws. As the State Mutual has long been considered an honorable company, we accept its disclaimer as sincere.

THE INDEPENDENT ORDER OF FORESTERS, of which Dr. Oronhyatekha of Toronto is Supreme Chief Ranger, recently increased that functionary's salary to $6,000, according to the Brant *Expositor*. Two years ago it was $2,000. In addition to regular salary, the doctor gets paid as editor of the organ of the order, *The Forester*, has an allowance for traveling expenses, and gets fees for the organization of new courts, making, as estimated by one member, some $13,000 annually. Now, let some enthusiastic member of the I.O.F. tell us about the "princely salaries" paid by the old-line companies, some of which receive and care for more money and more business every month than the I. O. F. receives in two years. Possibly Dr. Oronhyatekha gets no more than he is worth, but, then, these model pay-as-you-go associations, whose chief glory it is that they furnish a gilt-edged article of life assurance at wonderfully cheap rates—less than "half the cost of old line companies" they say—ought to be content with an official service graded on the half-cost scale.

THE TWENTY-SECOND annual meeting of the Fire Underwriters' Association of the Northwest was held at Chicago on the 7th, 8th and 9th of the current month, and was largely attended and of more than usual interest. Prepared papers were read on "What Good Things do the Mutuals Possess?" by H. P. Hubbell of Minnesota; "Necessity for Concerted Action for Improvement and Inspection of Risks," by U. C. Crosby, president of the New England Insurance Exchange; the annual address, on "Evolution," by General Agent G. F. Bissell of the Hartford Fire; "Fire Prevention by the Coroner Plan," by C. C. Hine, of the *Monitor*; "As to Our Honesty," by Seth Eggleston of Kansas City; "Insurance as a Profession *vs.* Insurance as a Business," by W. E. Page, Minneapolis. "Random Remarks on Fire Insurance," by D. W. Wilder, editor of the *Insurance and Investor's Magazine*; "Paul *vs.* Virginia," a legal paper, by S. G. Williams, of Denver; "The World, the Flesh and

the Devil; their Relation to Insurance," by J. C. Griffiths of Milwaukee; "Net Results," by Eugene Harbeck, of Michigan; and "The Great Chicago Fire of Twenty Years Ago," by Chas. A. Hewitt, editor of the *Argus*. All of the papers were good, some of them excellent, especially the last named. We shall hereafter give choice extracts from some of the papers, the crowded state of our columns with matter which takes precedence depriving us of that pleasure at present. A portion of the time was spent in discussions, reports on deceased members were presented, and a committee of seven to advise with the World's Fair Auxiliary Congress was appointed.

TWO IMPORTANT TEST cases are now before the Supreme Court of the United States, involving the validity of the McKinley Tariff Act. Briefs have been presented by Marshall Field & Co. of Chicago, and Stembach & Co. of New York, both large importers. Both argue the invalidity of the Act, mainly upon the ground that, as it came from the enrolling clerk, the section relating to the tobacco rebate, stricken out of the original bill in the senate and afterward restored in conference agreement with the lower house, was entirely omitted. The briefs cite several cases, claimed to be similar, which have been decided by various State courts. One case cited was in Michigan, where, in May, 1890, the Supreme Court of that State decided against the validity of an act passed by both houses of the legislature, after two or three conferences and modifications of the bill as introduced first in the lower house. The bill as presented to and signed by the governor contained all the amendments without change proposed by the senate, though only a few of them were agreed to and others modified as finally adopted, The Court held these omissions and additions to be fatal to the law as a whole. We shall await the decision of the Supreme Court on these tariff cases with especial interest.

THE ANNUAL CONVENTION of State Insurance Commissioners in the United States, held in St. Louis September 30th and October 1st, was largely attended, representatives from twenty-one States being present. Able papers were read by Mr. A. F. Harvey, actuary of the Missouri insurance department, on "Fidelity Insurance and Judicial Suretyship;" and by Mr. Wm. D. Whiting of New York, on "Future Rate for Interest," commented upon elsewhere. A resolution, that the reserve required for fidelity or guarantee companies should be a percentage of the amount at risk instead of the premiums received, the amount to be determined by losses incurred (averaged for a term of years) to mean amount at risk, was favorably discussed and referred to a committee for further consideration. A strong resolution against rebates in life insurance and favoring anti-rebate legislation was adopted, as was also a vigorous denunciation of assessment endowment and bond societies. The question of uniform non-forfeiture regulations governing life insurance received consideration, and a commission, consisting of three insurance commissioners and two insurance department actuaries, was created, with power to advise with officials of life companies on the subject, and report to the next convention, which meets in St. Paul. It was evidently a talking convention, barren of definite action.

AS WE PREDICTED, the assessment endowment orders are fast going to pieces, even more rapidly than we anticipated. The courts are busy, especially in Massachusetts, dealing with the concerns, and every day adds to the list of failures. Speaking of the situation, the *Commercial Bulletin* of Boston says:—

> The members are getting uneasy at the signs of collapse, and do not relish paying from half a dozen to seventeen assessments per month when they were led to expect, say, a couple. The Mutual One Year Benefit and the Annual Friend are the subject of many of these inquiries. The former called eight assessments between October 1 and 12. The Golden Grail has now been enjoined from paying any more money, and will doubtless soon gravitate into the receiver's hands, after the example of the Royal Ark and the Friendly Aid. The South Lawrence lodge of the Red Cross is practically disbanded; 17 assessments levied this month was more than the members could stand. It looked to them as if the seventeen assessments not paid meant $34 saved to them, and they concluded the cheapest way was to get out of the floundering concern and lose what they had put in, in some cases $60 a piece.

Since the above appeared, the personal property of nine of the officers of the Royal Ark has been levied on by the sheriff, and the Red Cross has been forbidden by the court to levy any more assessments or to pay out any more money. Another concern, called the "Wonder of the World,"—that is what they all are—is in process of disintegration, and the "Annual Friend Benevolent Institution" is being hunted down by four hundred exasperated St. Louis certificate holders. As the courts seem to hold that the officers of these orders are personally liable, there is likely to be a general panic among them.

A THREE PER CENT. STANDARD NOT NEEDED.

We notice that Actuary Wm. D. Whiting, of New York, read a paper at the annual convention of State insurance commissioners and superintendents, held in St. Louis, on September 30th last, on the "Future Rate of Interest," in which he presented the ultra-conservative view of the question held, we think, by very few people. Mr. Whiting, having a most radical suggestion to make for the change of the standard for life assurance reserves in the United States, from the present four to three per cent., naturally makes much of the decline in the current interest rate during the past twenty years, and in doing so overstates the rate obtainable both East and West by judicious lenders on real estate security twenty years ago, but about fairly states the present safe rate obtainable on that class of securities.

The drift of Mr. Whiting's essay is to prove that the United States is fast approaching the condition of European countries, where the supply of capital, as compared with the demand for its use, is greatly in excess of the supply on this side of the Atlantic. It is claimed that over here "the surplus of capital, by reason of invention, diminution of waste, and greater possibilities of saving, tends to accumulate in increasing

proportion per capita." But how about the fertility of modern invention as creating opportunities for the profitable *use* as well as the production of capital? A general era of prosperity, which enables individuals and corporations to accumulate capital more rapidly than heretofore, also produces an increased demand by the people, who, not being the owners of capital, are both willing and able to pay for its use.

Those who take a pessimistic view of things evidently forget that not only are the resources of the United States, both agricultural and mineral, only partially and very imperfectly developed, calling for vast supplies of capital for a good many years, but that the Dominion of Canada has a productive area of undeveloped country large enough to employ profitably half the surplus capital of England for the next fifty years. And these are not the only countries with vast undeveloped resources on this continent. It is perfectly true that, as compared with a score or even half a score years ago, the current rate of interest in this country has declined, and further slight declensions may very likely occur; but there are no indications whatever, so far as we can see, for a decline such as calls for a reduction of the standard for life assurance reserves, either in the United States or in Canada, below four per cent. Theories are often ingenious and generally entertaining, while opinions are more or less interesting, but accomplished facts are what have the stamp of sterling value. Let us look a little into the facts, therefore, as regards the interest rate realized for a few years past by the life companies on this continent and in Great Britain.

During the past year, three eminent actuaries, Messrs. Mackenzie, Hewat and Harding, have published the results of their separate investigations of the interest rate realized for the twenty years past by the life assurance companies of Great Britain. So nearly do these gentlemen agree in the results recorded that we need only present here the statement of one of them, that of Mr. A. G. Mackenzie, in his paper read before the Institute of Actuaries in January last, which we compiled from the table formulated by him :—

Year.	Average Rate.	Year.	Average Rate.
1870	4.5	1885	4 2
1881	4.3	1886	4.2
1882	4.4	1887	4.2
18. ·	4.3	1888	4.2
1884	4.3	1889	4.1

Inasmuch as Mr. Mackenzie's figures were only down to the year 1888, we have added Mr. Hewat's calculation for 1889, in order to make the comparison as complete as possible. The table, of course, shows a decline, but, as will be seen, not rapid enough nor large enough to be startling. We turn now to the United States experience, as given in detail in the Connecticut insurance reports. Following is the average rate of all the companies reporting for each of the ten years named, based on the mean amount of total assets :—

Year.	Rate.	Year.	Rate.
1881	5.54	1886	5.22
1882	5.35	1887	5.11
1883	5.21	1888	5.05
1884	5.13	1889	4 91
1885	5.15	1890	5.19

This combined experience embraces all the principal companies, and is therefore a clear indication of the results from year to year. The declension, it will be observed, as shown between 1881 and 1890, has been a little over three-tenths of one per cent. If we take the five years from 1886 to 1890 inclusive, we find the average rate to have been 5.09 per cent., while for the five years preceding—'81 to '85—the average rate was 5.27. Turning our attention to the experience of the Canadian life companies for the ten years past, we find the following general averages :—

Year.	Rate.	Year.	Rate.
1881	6.77	1886	6.29
1882	6.20	1887	6.57
1883	6.61	1888	5.83
1884	6.13	1889	5.74
1885	6.22	1890	5.58

From this record we learn that the average rate realized for the five years ending with 1890 has been 6.00 per cent., and for the five years immediately preceding 6.38,—a difference for the two periods of not quite two-fifths of one per cent. These are the recorded facts, and show that in Great Britain, in twenty years, the average rate has declined two-fifths and in nine years one-fifth of one per cent.; that in the United States during ten years the decline has been a little over three-tenths of one per cent.; and that the average interest of the Canadian companies has fallen in the same time a little over one per cent., though in the last five years the decline has been less than three-fourths of one per cent. In five years the decline in Great Britain has been one-tenth of one per cent., and during the same period the reduction in the United States has been merely nominal. It is also to be remembered that in fixing a standard of liability for life companies the rate of interest required is based on the *reserve* alone, and not on total assets, as above calculated,—a very important difference, as anybody can see.

To sum up, we find the situation to be as follows: The usual standard for life assurance reserves in the United States is 4 per cent., Combined Actuaries. The rate of interest realized on mean amount of *total assets* last year was 5.19, or considerably more than one per cent. in excess of the requirement based on reserves alone. In Canada, the legal standard is 4½ Hm. Table, and the rate realized last year on total mean assets over one per cent. in excess of the requirement.

In the light of all these facts, it is perfectly clear that no reason exists why weight should be given to Mr. Whiting's suggestion for a reduction of the legal rate to three per cent. We believe in a good, liberal margin of interest earnings above the legal requirement, and that we have already, above the limit of safety in any conceivable event. There is an old adage very pertinent to this whole question of reserve standard, and that is to "let well enough alone."

A decision has been rendered by Chief Justice Paxson of Pennsylvania, reversing the ruling of the court below, which quashed an indictment against one Morningstar, arraigned for violation of the anti-rebate law, on the ground that the law was unconstitutional The Chief Justice says it is not the province of the lower courts to pass upon the constitutionality of laws, and he reinstates the case and orders trial proceedings.

MONTREAL CITY PROPERTY AND INSURANCE.

The City Council of Montreal, on final consideration, have decided not to insure any of the property of the city placed in their charge. The proposition of the City Treasurer to insure for a moderate aggregate, dividing the risk equally among the companies represented here, was not, so far as we know, objected to, excepting on the radical ground that the city should not insure at all with anybody. The refusal to insure was based entirely on the ground that, inasmuch as several hundred dollars had been paid yearly to the insurance companies, and the property insured had not burned, therefore the city would better be its own insurer and save this money. If the worthy aldermen capable of such reasoning were taken ill with typhoid fever, they would, of course, if consistent, refuse to employ and fee a physician, on the ground that they had never before died from typhoid fever! The wise people who insure do so, not because they have been burned out, but because they are *liable* to be. Chicago had no large fires for twenty years. Suddenly, in forty-eight hours it became an ash heap. Coming nearer home we must not forget St. John, N. B., Quebec and Halifax.

The worthy aldermen seem to forget that they are bound in law and in morals to protect to the utmost the property of the people whose servants they are,—even better, if possible, than they would their own property. They also seem to forget that they roundly tax all the insurance companies, amounting in the aggregate to about $13,000 annually, for the privilege of doing business in Montreal, and yet, so far as their action goes, would deprive them of all business. They also seem to forget that they were very anxious to have the companies carry the risk on the abattoirs, in which the city has a vital interest, and which, although this property is very undesirable, they consented to do, with the understanding that the entire schedule of the city property was also to be insured at fair rates. Another thing these gentlemen seem to have overlooked, viz., that the proposed insurance was only for a comparatively small portion of the actual value of the property, so that (as in the case of the City Hall, worth about $500,000 and to be insured for only $150,000), in case of a fire the loss to the companies must almost certainly be a total loss.

That was a childish reason named by certain aldermen for declining to insure the city's property, viz., that several thousand dollars had been paid in premiums to the insurance companies within the past twenty years, and only some $5,000 received for losses. (Treasurer Robb is credited by the reporters with saying that the city had received from the companies only $3,000 in thirty years!) Honest men, whether aldermen or otherwise, do not insure hoping to realize on their policies by burning out, and so balance the premium account, but, recognizing the constant liability to burn, are yet thankful if fortunate enough to escape that calamity. At all events, the Treasurer's report shows for the single year 1880 the sum of $9,672.53 received from these companies, and certainly in the Bonsecours market fire this year there was a considerable loss. It is interesting to state in this connection that the city authorities of Toronto, a city whose insurable property value is considerably less than that of Montreal, judiciously protects its property by insurance. Last year the insurance placed in 40 companies, $13,570 in each, was $542,810, exclusive of public school, library and court house property, which are insured separately. The one simple, incontrovertible fact is, that, as custodians of the property of the citizens of Montreal, members of the City Council are bound to protect that property by insurance,—the only method of protection at their command,—just as all good business men protect their own property in like manner.

CASH SURRENDER VALUES.

An animated discussion took place at the last meeting of the Actuarial Society of America, on a paper previously read by Mr. Sheppard Homans criticizing the Massachusetts law as to cash surrender values of life policies. The terms of that statute are that the cash value which all life companies organized in that State shall pay to retiring policyholders shall be equal to the full reserve, less only a deduction of eight per cent. of the "insurance value," or present value of the normal future yearly costs of insurance under the policy. This provides a very liberal value indeed for all forms of policy, and for endowments particularly so, the insurance value of endowment policies being comparatively small. The companies on the latter class are however authorized to charge an additional five per cent. of the reserve.

Mr. Homans claims that this law is capable of much improvement, and there can be but little doubt that this is so, although unfortunately the actuarial physicians cannot agree on a remedy. Almost every one has some specific which in his opinion is superior to all others, while some think that the best course is to leave matters to nature alone, by having no such law at all, and allowing the competition between the companies to regulate the terms of their policies. However, be this as it may, we cannot help seeing a serious danger in any law which compels a company to give a very large proportion, and in some cases almost the whole of the reserve as a cash value to those who desire to drop out. So long as the business of the company progresses favorably and satisfactorily, all may go well. But suppose, for example, that the New York Life had been subject to such a law at this time. Under the vehement and continuous attacks which are being made on that company, there is reason to fear that if its policyholders were able to withdraw the large surrender values guaranteed by the Massachusetts law the number of cancellations would be so great as to really imperil the company's future. Most of the inferior lives would presumably remain, and we would have an instance of "adverse selection" on a large scale. Other companies also have had to go through trying times in their history; and although they are to-day in a flourishing condition, it is quite possible that had they, too, been subject to the laws of Massachusetts, they might have been forced into bank-

ruptcy. The conclusion seems inevitable, that any law which may operate to endanger the existence or even the prosperity of such an important institution as a life assurance company is a most dangerous one. All meddling legislation of this kind must be entered upon with the utmost caution, or it may in the end prove mischievous instead of beneficial.

THE "NEW BLOOD" FALLACY.

There are frequently several methods by which scientific men are able to prove a given proposition, and the fact that precisely the same conclusion is reached by the different roads traversed adds strength to the conclusion. The actuarial science which deals with the life assurance problem most emphatically condemns the ordinary assessment plan as unscientific and fundamentally unsafe, because of an inevitably increasing mortality and consequent increasing cost which the most desirable portion of the membership will refuse to bear, and by their withdrawal accelerate the normal increase. And this will take place even though the much talked about "new blood" be introduced in liberal measure. An increasing and well selected membership may help to postpone the final catastrophe undoubtedly, but, like disease lurking in the system itself, will come to the surface in spite of the most vigorous treatment applied only to the skin of the patient.

This important fact is most conclusively demonstrated in the experience of the Mutual Reserve Fund Life, for it is well known that the amount of new assurance secured each year since its advent has been large, the amount of assurance in force increasing several millions in amount annually. If ever a favorable opportunity existed for the keeping down of the death rate by the introduction of "new blood," that opportunity has fallen to the lot of the Mutual Reserve Fund of New York. But what does the record show? If the much-vaunted theory were sound, the record ought to show that payments for death claims have increased in about the same proportion as the assurance in force has increased. Let us examine the record as made up from the official reports, and see, beginning with the first full year of the association's business:—

Year.	Assurance in force.	Gain over previous year.	Per cent. of increase.	Death claims paid.	Per ct. of increase.
	$	$		$	
1882	35,190,750	.....	.....	34,250	.....
1883	63,328,500	28,137,750	79.9	301,425	780.0
1884	85,452,000	22,123,500	35.8	479,900	59.2
1885	123,353,500	37,901,500	44.3	838,675	74.7
1886	150,175,250	26,821,750	21.7	1,149,140	37.3
1887	156,554,100	6,378,850	4.2	1,378,681	19.9
1888	168,902,850	12,348,750	7.9	1,582,332	14.8
1889	181,358,200	12,455,350	7.4	1,836,031	15.4
1890	197,003,435	15,645,235	8.6	2,146,498	16.9

The association commenced business early in 1881, and 1882 was the first full year's business; and as a matter of course the deaths for the first two years, as with all new life companies, were very few, the third year, or 1883, beginning to show something like a normal rate. For this reason the enormous disparity in the percentages of increased assurance in force and increased death claims in 1883 has no especial significance over the experience of subsequent years. Scanning the record, however, from 1883 downward, we find, that with a largely increasing gain in business in force, ranging from six to more than thirty-seven millions annually—with all this pumping in of "new blood" the payments for death claims have each year increased nearly twice as fast as the increase of the assurance in force, which simply means a steadily increasing mortality as shown by us in February last:—

Year	Mean Amount Assurance in force.	Death claims paid during year.	Cost per $1000 of assurance
1882	$21,135,000	$34,250	$1.62
1883	49,259,625	301,425	6.12
1884	74,390,250	479,900	6.45
1885	104,402,750	838,675	8.03
1886	136,764,375	1,149,140	8.40
1887	153,364,675	1,378,681	9.05
1888	162,728,475	1,582,332	9.35
1889	175,130,525	1,836,031	10.48
1890	189,180,817	2,146,498	11 34

If we consider the actual total average cost to the membership, we find, as heretofore stated in these columns, that in 1890 that cost, measured by what the members paid in, was $17.37 per $1,000 of the mean amount assured. Thus does the invincible logic of mathematics destroy the ingenious theorizing of the advocates of assessmentism, clearly demonstrating that under the most favorable conditions as to new business the burden of assessments to meet increasing steadily increases. To what unendurable proportions that burden grows, where instead of accessions there are declensions for consecutive years, the experience of the United Brethren Mutual Aid Association of Pennsylvania, which we recently printed, strikingly shows.

A QUESTION OF ADJUSTMENT.

Editor INSURANCE AND FINANCE CHRONICLE.—

We have been asked the following question, but are unable to answer it. Will you kindly afford us the information?

Mr A. insures a house for $1,000, loss payable to a loan company holding first mortgage for $1,000. Mr. B. takes a second mortgage, and A. puts on (with consent of first insurance company) $1,000 more insurance, making loss payable to B. A fire occurs which damages building to the extent of $2,000. Would second insurance company have $500 to pay, and could B collect same, or would the loan company holding first mortgage receive the full amount of loss paid? You will greatly oblige by giving us the information.

Truly Yours,
McCAUSLAND & OGILVIE.

AYLMER, Ont., Oct. 8, 1891.

In reply we may say, the question is purely a legal one. The two policies are concurrent, covering the interest of the insured, mortgageor, upon one and the same subject: and under the contribution clause, which we assume was to be found in each of the policies, each one should contribute in payment of the loss its *pro-rata* amount within the respective amounts. The loan company's amount being secured by a mortgage does not give it any additional rights to the insurance money to the injury of its insurer by preventing its calling upon B's policy to share in the loss *pro-rata*. Each company can legitimately claim contribution from its co-insurer, the payments being $1,500 and $500 respectively. Such, at least, is our decided opinion, as the fact of the loan company holding a mortgage upon the property plays no part in the adjustment, and the apportionment would proceed as if it did not exist.

THE NEW YORK LIFE.

With regard to the affairs of the New York Life, no new developments of real importance have occurred since the dismissal of Mr. Banta, if we except the institution of a second libel suit against the New York *Times*, with damages laid at $750,000. This suit is based upon the publication of the Banta charges, and is consistent with the attitude assumed four years ago with reference to these charges by the trustees of the company and the recent denials of the executive officers. Having officially been declared by the trustees to be unfounded, their publication, with the attendant comment, with the later publication of Mr. Banta's letter practically reiterating the charges, was a direct impeachment of the honesty of the company's trustees and managers. If the first libel suit was wise and justifiable, the second was equally so. Very likely these cases will never come to trial, whether they do or not depending largely upon the willingness of the *Times* to meet the issue. As we have before stated in these columns, extended expressions of hostile opinion or partizan club-swinging are alike out of place until the official report shall have been made. We shall wait for the evidence before expressing an opinion upon the merits of the charge—for all the so-called charges from whatever source amount to the one serious charge of corrupt mismanagement. Until convincing evidence of such mismanagement appears, we assume the innocence of the accused and the perfect solvency of the company. The latter its worst enemies have not questioned. It may here be serviceable to place in their consecutive order the various events which have transpired affecting the situation since the New York *Times* first inaugurated war on the company.

Preceding the attacks of that journal necessarily comes mention of the Spanish-American department defalcation for $350,000, made known in May last, for which Merzbacher was responsible. Serious and persistent charges against President Beers by the New York *Times* soon after hastened that gentleman's return from Europe and prompt denial over his own signature. Pending this return, however, the finance committee of the company formally requested the Insurance Department of the State to enter upon a thorough investigation of the condition and management of the company; on June 20th the trustees ratified this request, and the examination was very soon entered upon. The attacks of the *Times* having continued from day to day, on July 9th the company's trustees directed a libel suit, with damages at a million dollars, to be brought against that journal, which was formally done something more than a month later. This suit was based on articles appearing in the *Times* up to June 30th. Up to August 3rd, the specific charges made by Cashier Banta in October, 1887, and dismissed by the trustees, had never reached the public eye, but on that date they appeared in full in the *Times*, and created a sensation. Copious letters in the various newspapers followed, from ex-Governor Chamberlain (Mr. Banta's former attorney), Mr. Hornblower, the attorney for and a trustee of the New York Life, and from others, with the net result that, as usual, each lawyer proved his side to be right. On August 28th, the *Times* printed a long letter from Mr. Banta, defending his course and motives, and in effect reiterating the principal charges previously made. His dismissal from the service of the company followed on August 31st. Since then the *Times* has kept up its fire, bringing out nothing new of importance, however, and on September 26th the company brought its second libel suit, based mainly on the publication of and comment on the Banta charges, as above stated.

PAYMENTS TO LIFE POLICYHOLDERS

Following is the death rate per thousand lives assured in Canada for six years, together with the total premium income on the life business in Canada of the British and American companies, combined with the entire business of the Canadian companies, also the percentage of premiums paid to policyholders for twelve years:—

Year.	Death rate per 1,000.	Premium Income.	Payments to policyholders.	Percentage of premiums thus paid.
1879	.....	$2,606,750	$1,301,480	49 93
1880	.....	2,691,128	1,389,986	51.65
1881	.....	3,094,689	1,899 240	60.72
1882	.....	3,544,603	1,9 .,444	54.91
1883	.....	3,861,179	2,201,152	57.01
1884	.....	4,195,736	2,073,395	49.42
1885	9.64	4,684,409	2,541,101	54.31
1886	8 13	5,298,596	2,851,981	53.83
1887	8.31	6,105,474	3,235 205	52.99
1888	8.61	6,655,762	3,440,729	51.70
1889	8.84	8,336,167	3,942,596	47 30
1890	10.14	8,131,852	4,445,668	54 67
	8.94	$59,206,341	$31,251,971	52.78

As compared with the United States companies on their total business, the above is a very satisfactory showing. The average death rate, based on the mean number of policies in force, of the American companies for the five years past has been 13.14, against 8 94, as above shown. The percentage of premiums paid policyholders has been somewhat larger also.

THE GERMAN INSURANCE EXPERIMENT.

When last April the members of the Institute of Actuaries had the privilege of listening to an impartial and dispassionate criticism of the German system of insurance against invalidity and old age, and to the views of some of the most eloquent advocates of similar schemes in this country, it was perhaps scarcely anticipated that the experience of a few brief months would prove one of the strongest arguments against "national superannuation" as conferred upon the Fatherland by the enactment of June, 1889. Yet such is the case. For six months only has Germany enjoyed the blessings of a complete system of compulsory insurance, carried into effect by a network of Government organizations and local insurance boards, and already it begins to groan under its burdens. No one seems to have a good word to say for the working of the new scheme, and so unanimous has been the testimony given against it by Berlin correspondents that we are almost tempted to become apologists for German insurance law, and to point out that its burdens are at first naturally brought into greater prominence than its benefits, and that the friction attending the start of such a gigantic concern is necessarily enormous * * * *

The chief practical difficulties to be encountered in carrying out this great scheme of State insurance appear

from the first to be the difficulty of classification, then the difficulty of collection, and lastly, the difficulty of investigation of claims. Of these, the third has scarcely yet had time to make itself seriously felt, and it is fortunate that this is so, as there has apparently been quite enough to tax the energies of the Government and the patience of the people. All who have had actual experience of German officialism will be able to form some idea of the endless formalities which intervene between the workman and his pension. Red-tape is even more conspicuous in German Government departments than in English, and whatever might be the original merits of a scheme of such gigantic proportions, it would scarcely have been surprising if red-tape had strangled it at its birth. Whether the present scheme, faulty as it undoubtedly is, will survive its inception remains to be seen, but the outlook at present can hardly be regarded as promising. We quote the following summary of the requirements to be carried out week by week by the long suffering German artizan:—"Every worker has to be furnished every year with a register card containing forty seven spaces, and in each of these spaces the masters must affix a stamp to be procured from the Post Office certifying the weekly payment. Even then the work is not done, as the cards have to be presented to the local Insurance Board, who have to see that each workman is credited with the weeks of absence through sickness or on military service. The importance of these official records is great, because no worker can claim an invalid pension who has not contributed according to his class for 235 weeks, and none can claim an old age pension who has not paid in for 1,410 weeks." The whole scheme, the division of workmen into classes, and the limitation of the benefits to those with incomes of less than £100 a year, appears to us to contemplate one of the worst curses which could fall upon an intelligent and prosperous community—viz., complete social stagnation. Presuming that the initial difficulties of classification have been successfully overcome, in what an iron mould this very fact constrains the energies of the people, cramping the natural ambition of a man to rise by his own efforts, and should he, in spite of these influences, raise his income to over £100 a year—which is, we believe, the German dividing line between the classes and the masses—offering him the prospect of having paid his weekly tax of 4 per cent. to be debarred from receiving any of the benefits of his investment. There is too much reason to fear that enforced thrift of this nature acts as a direct encouragement to the idle and unthrifty. The one hope that the German insurance law, if persisted in, notwithstanding the pitfalls that beset it, will not succeed in checking the industrial progress of the people lies in the fact that the miserable pittance insured for the decline of life can scarcely suffice for even the frugal wants of German working men. This would be the practical failure of the scheme, but it would be failure more desirable than success. It seems doubtful whether the paternal Government of Germany will be able to carry out its intentions in the face of the many adverse influences which are at work. The workmen have already discovered that the scheme will involve "meddlesome interference by the State," the employers can hardly be expected to receive with enthusiasm a heavy additional burden laid upon their shoulders, and the third party to the agreement, the Government itself, is already looking with alarm at the rapidly increasing expenditure, which is likely greatly to exceed the estimate, and beside which, the outlay of the most expensively managed private concerns will appear economy indeed. The actuarial soundness of the German insurance experiment is not likely to come to the test, and will thus escape a trial which we do not believe it could sustain.—*Insurance Record, London.*

THE ACTUARIAL SOCIETY OF AMERICA.

In our last issue we gave a brief account of the Fall meeting at Toronto of the above Society, which we now supplement with the presentation of President D. P. Fackler's opening address, the principal papers read, and a pretty full abstract of the discussions engaged in pertaining to papers previously presented.

OPENING ADDRESS BY THE PRESIDENT.

After referring to the large attendance and the cordial reception accorded by the Canadian members of the Society, Mr. Fackler said:—

Last spring we entered on our third year with the largest meeting we have had yet, and since then much business has been transacted by the Council, the members of which deserve our gratitude for their faithful attention to the affairs of the Society at much cost of personal inconvenience—and at this time the condition of the Society, as shown by the attendance here, and also by the number and character of the papers to be read, may well afford us satisfaction.

Before our organization there had been several attempts to form an Actuarial Society on this continent. The first effort, some twenty years ago, resulted in only one meeting, after that there were two or more attempts that did not even go as far as that, for most of us saw that circumstances were not favorable to the formation of such a society as we wished. The trouble was there were too many persons with the title of actuary, and some of them in prominent positions who had few or no professional qualifications as such. A society could not well be formed without them, but giving them full membership and possibly office in such a society would be tantamount to dispensing with all requirements in the way of qualification.

Gradually, however, the increasing complexity of actuarial calculations compelled the companies to give the rank and title of Actuary only to those who were properly qualified; and when this proper condition of affairs was attained, the natural instinct of co-operation caused us to come together into this Society as an essential factor of our professional life. * * *

Though we do not formally represent companies, we are, nevertheless, something of a bond of union between some forty companies insuring four millions of persons under policies of all sizes, and with assets rapidly approaching one thousand millions of dollars. Surely we have a field large enough to inspire a lofty ambition and a large benevolence! In England and in Europe the scientific character of actuarial work has long been recognized; government annuities and the valuation of complicated and large life interests in vast entailed estates gave a wide scope for service outside of the life companies, and led the public to appreciate the professional standing of actuaries. In this country, however, until quite lately, there has been but little employment for the profession outside of the companies, and thus the character of their work has not been understood and has often been supposed to be perfunctory routine.

Twenty or twenty-five years ago this was indeed true of the actuarial departments of some of our companies, but about that time a decided change began. Our companies entered on a period of rapid growth, and began to issue numerous varieties of policies requiring much nicety of calculation for the proper adjustment of the premiums, reserves and dividends, and requiring great ability, experience and judgment to keep the whole system well in hand. As an example, I may state that one of our large companies publishes 139 different rates for varying terms and modes of insurance—this statement is based on a careful count. Thus the field for actuarial

work in this continent has increased enormously, and now probably far exceeds what is found in European offices. In consequence, as before stated, our companies have been compelled to obtain the services of men highly gifted and trained, not only to be heads but also assistants in their actuarial departments. * * *

This Society, being the index or exponent of our professional standing and attainments, we must jealously guard its character and reputation, which will always depend on the learning, industry and personal worth of its members. A factitious reputation based on claptrap would soon be lost; we can maintain a high standing only by deserving it. It must not be supposed that a narrow exclusiveness is advocated; on the contrary, it is desired that the Society should gradually embrace in some way or other, as may be practicable, all the best life insurance men on the continent, whether employed in the practical or in the mathematical departments of the business.

If any think this is aiming too high, I would say that inasmuch as the actuarial department of an insurance company is the essential feature which distinguishes it from other corporations, then, without derogation to the other branches, we may fairly claim to be the heart and soul of the business. If, then, we constitute the essential element of the business, may not our Society reasonably be expected to afford the best common meeting place for the best men in all branches?

If it be asked, how under these circumstances can our Society retain its distinctive actuarial character? and will not the actuarial element be swamped in such a heterogeneous membership? the answer to this would seem to be that the history of similar societies in this and other professions shows that a perfect safeguard can be provided by classifying the membership and retaining the general control as now in the hands of those who are actuaries professionally. * * *

When this Society was undergoing incubation, in the winter and early spring of 1889, it was strongly insisted by several that the invitations to the preliminary meeting should go forth only to those principally or solely employed as actuaries, so as to ensure a homogeneous nucleus of professional and responsible actuaries; since then we have had many valuable accessions to our membership from the legal, editorial and other professions, but we have been afraid to admit some other valuable men because of their occupation—a difficulty which would be entirely obviated by a classification of our future members. On the other hand, if we adopt a policy of indiscriminate liberality, our standard of membership will fall beyond recovery, our best men will lose their interest, and the precious time of our meetings will be wasted by cranks, doctrinaires and ignorant critics.

That we are not a mutual admiration society has already been fully demonstrated by our free and frank discussions of each other's papers; our danger is rather the other way. * * * *

In building for the future we should neither disregard the constitution of other similar societies nor yet slavishly imitate them. The British Institute, with its honorable record of nearly half a century, with its world-wide and diversified membership of over 600, divided into several classes, has a constitution well worthy of our study; and here at home we have the American Society of Civil Engineers, which contains in its various classes, not only civil engineers, but presidents, and other officers of railroads, contractors, mine-owners, mathematicians and even actuaries; a numerous and varied membership, which greatly increases the influence of the Society, but owing to classification does not extinguish its essential characteristics. The relations of civil engineers to railroads and other corporations so much resemble our relations to life insurance companies, that this association would seem to deserve careful consideration. * * * *

A COMPARISON OF AMERICAN AND AUSTRALIAN MORTALITY.

BY RICHARD TEECE, SYDNEY, AUSTRALIA.

The theory of life assurance is practically the same all the world over; the practice of the business originating (at least in its modern form) in Great Britain has received many modifications in its development in English-speaking countries. The practice, as we find it at present, is largely the product of its environment, and the study of the results as modified by time, by racial characteristics and by national influences, is an intensely interesting and profitable one. In the United States of America and in the Australasian colonies, the growth of the business in a comparatively short period of time has been quite phenomenal. A variation in the English practice has been both the creature and the creator of this abnormal development. The American and the Australasian peoples, starting from the same parent stock, have inherited many characteristics in common, and have, in their departures from the parent type, been influenced by many common circumstances. It is natural, therefore, to suppose that the growth of the life assurance business would, in America and Australia, while departing from the parent model, yield results having many features in common, and exhibit many indications of a common influence. A few of the points which may be assumed to operate in modifying the character of business in America and Australia are:—

1. The more vigorous prosecution of the business, which is characteristic of people in a new country to which the most active and enterprising spirits are invariably attracted.

2. The large proportion of people in the humbler walks of life—artisans and laborers—who, in new countries, possess the means to assure, which are frequently denied to the corresponding classes in the old world.

3. The smaller proportion of large assurances (owing to the absence of a large moneyed and leisured class) which are accessible to life offices.

4. The tendency to look upon assurance as an investment rather than as a philanthropic undertaking or a domestic duty.

5. The tendency of policies to lapse, due to the migratory character and fluctuating pecuniary circumstances of people in the earlier stages of national development.

6. The absence of epidemics such as cholera and small-pox, and the presence, in lieu thereof, of accidents and privations inseparable from the development of new countries.

As an introduction to the inquiry suggested by these remarks, I propose to compare the mortality experiences of several American companies with that of the Australian Mutual Provident Society during the first 40 years of its existence, viz., from 1849 to 1888. I am now engaged in an investigation into this experience of the Australian Mutual Provident Society, and it has occurred to me that a few of the results which have already been determined will possess an interest for my professional brethren in the United States, and will perhaps be of service to them in instituting independent inquiries. The American experiences with which I propose to deal are those of the Mutual Life Insurance Company of New York, the Mutual Benefit Life Insurance Company of New Jersey, the Connecticut Mutual Life Insurance Company, and the Thirty American

Offices. The table marked A, appended hereto, exhibits the extent of the observations in each case.

It would have been convenient had the ages at entry been obtainable in the cases of the Mutual Benefit and the Connecticut Mutual; I do not, however, find this information in the volumes published by these offices; and as these remarks are hurriedly penned, I have not had time to determine it for myself. It will be observed that (to the extent to which deductions from this information are warranted) the experiences of the A. M. P. Society and the Mutual Life of New York show a tolerably close agreement, for the longer duration of the policies in the former may be taken as a set-off against the greater age of the lives in the latter. The agreement of the Mutual Benefit and the Connecticut Mutual with the thirty offices is remarkable in the face of the fact that the duration of the policies in the former cases was so much greater than in the latter. There may, however, be some explanation of the point which will at once occur to American actuaries, but which is not evident to me, owing, probably, to my imperfect acquaintance with the experience of the Thirty Offices, to which I have not yet been able to give very close attention. Tables B, C and D give the tabulated experience relating to the Australian Mutual Provident Society for the 40 years 1849–1888. The graduated Table D has been deduced by the graphic method to which reference is made in a note hereto. It is not necessary to repeat the corresponding tables relating to the other offices compared, as they are accessible to the members of the Society. In Table E, however, the graduated values of q_x are shown in juxtaposition, and in Diagram I a graphic exhibit of the same functions is presented. Table F* shows the actual deaths in the Australian Mutual Provident Society, compared with the numbers expected according to each of the other four tables. From this table it will be seen that the actual number of deaths was 5,552, while the expected numbers were:

By the Mutual Life experience, . . .	6,353
" Mutual Benefit "	6,247
" Connecticut Mutual experience, . .	6,826
" Thirty Offices' experience, . . .	7,625

One is naturally led to inquire, What is the cause of this wide difference? My imperfect knowledge of the American practice precludes me from speaking with any authority on the subject, but I suggest, for the consideration of the members, the following points.

1. I believe it is the practice of many American offices either to accept lives at their real ages or to decline them altogether, and that the custom of adding a certain number of years to the age in the cases of lives somewhat impaired does not hold. The contrary is the case in the Australian Mutual Provident Society. Of the 114,471 lives here dealt with, 75,714 were accepted at their real ages, the remaining 38,757 had additions of two years and upward made to the true age. These additions averaged 1¼ years for the whole of the lives, or 3½ years each for the lives to which additions were made. In the mortality experience all lives are taken at the age at which they were accepted.

2. I understand it is the practice of American offices to accept, for some other class of policy, lives which cannot be accepted for whole-life policies. In the Mutual Provident Society a proponent who cannot be accepted for a whole-life policy would be declined for any other class of life policy.

3. In the Mutual Provident Society a large proportion of the policies are for endowment assurances. I have not the information to enable me to determine what proportion of policies embraced in the observations of the American companies were endowments, but I find that the proportions in respect of policies in force at 31st December, 1888, were as follows:—

Australian Mutual Provident Society, . .	42·9 o/o
Mutual Life of New York, ...	20.8 o/o
Mutual Benefit of N. J., ...	19.9 o/o
Connecticut Mutual, ...	7.8 o/o

My own impression is that where the option is left to the life assured, endowment policies (or, as we term them, endowment assurances) will exhibit a lower death-rate than ordinary whole-life policies. I shall in due course be in possession of information to enable me to speak with more certainty on this point; for the present I merely express an opinion. If I am correct in my impression regarding the foregoing points, the comparatively favorable mortality experience of the Mutual Provident Society will, to some extent, be accounted for. But when due allowance has been made for all these disturbing influences, the fact still seems to be established that the mortality experience of the Mutual Provident Society has been more favorable than that of any of the American experiences concerned. This will, I think, be made clearer when we compare the experiences in respect of policies which have been less than five years in force and those which have been in force for five years and upward. Writing as I am for professional actuaries, it is, of course, needless for me to point out what a comparatively unimportant point the rate of mortality is in the success or failure of a life office. Table F* gives the information shown in Table F arranged for quinquennial intervals of age. Table G shows the numbers exposed to risk, the actual deaths and the mortality per cent. in the Australian Mutual Provident Society arranged according to years of assurance; also, the expected deaths and the mortality per cent. according to the experiences of the Mutual of New York, the Mutual Benefit, the Connecticut Mutual, the Thirty American Offices, and the Twenty British Offices. In making a comparison, it must be borne in mind that the experience of the Connecticut Mutual is based upon policy years and not calendar years. Due regard must also be had to the fact that at the older years of assurance there are no data referring to the American experiences compared. Policies for children's endowments are not included in this table. The results exhibit a marked superiority in favor of the Australian Mutual Provident Society, but here again the question of the rating up of impaired lives and the influence of endowment assurance policies may affect the result, though even these points can scarcely alter the fact. For policies which have been in force for less than five years, the figures may, I think, be considered fairly comparable. With the view of affording facilities for a comparison which may be taken as unexceptionable, I have formed separate tables of the values of q_x in respect of policies which have been less than five years in force, and of these which have been in force for five years and upward for all the experiences embraced in Table G, except that of the Thirty American Offices. These will be found in Table H. Table K, wherein the actual and expected deaths in respect of policies in force for less than five years and for five years and upward are shown separately, will be found most instructive. It will be observed that this table presents a different distribution of the expected deaths from that shown in Table G. The method of construction renders the result in Table K much more reliable for purposes of comparison than those in Table G. The figures in Table K appear to me to establish beyond doubt the superiority of the Australian lives in point of vitality. There are a number of other points of a highly interesting nature indicating a more or less close agreement between the experience of American and Australian lives and a departure of both from the English experi-

*In this table lives under 20 (all of which represented children's endowments) are omitted.

ence, the consideration of which cannot fail to reward the investigator. To these I hope to return at some future time. Meanwhile, I venture to express the hope that these hastily penned remarks may not be without interest for my professional brethren in America.

Appended to Mr. Teece's paper are series of elaborate tables covering twenty-three pages of closely printed figures. Space prevents our including them.

DISTRIBUTION OF EXPENSES IN LIFE INSURANCE.

BY WILLIAM D. WHITING, NEW YORK.

The factors which go to make up life insurance calculations are the rate of interest, mortality and expenses. These give us the essentials for important computations, such as making up premiums, reserves and dividends. Although all three are of primary importance, it happens, singularly enough, that only two have been particularly studied and developed; while the third, that of expense, has either been ignored or lumped together, in the most inconsiderate manner.

While something may be said for this procedure on the score of convenience, it is certainly neither scientific nor safe, and has led to very one sided and confused results.

Some attempts have been made, it is true, to sketch out an ideal mode of distributing expenses upon the principle that they should be charged up to the policy-holder in proportion to the value of the insurance which he enjoys. But as practical facts, unfortunately, lend themselves but rarely to theoretical considerations, however just in themselves, we have never heard that any such attempts have been reduced to actual practice. Agents must be employed upon such terms as they will consent to work in these times of fierce competition. Rents, salaries and general expenses refuse to be governed by "insurance values," and all endeavors to adjust them upon ideals fail.

Nor can it be justly held, that regardless of how expenses arise, their distribution should be made according to the benefit which they confer upon the individual to be charged. This is not the case in any of the affairs of life. Freight charges and storage are not proportionate to the *value* of the goods, but to their bulk and weight. And so in life insurance, expenses should be allotted, as nearly as may be, according as the policy-class occasions the expense, regardless of the value to the insurer. We must take expenses as we find them, and charge them as they are caused.

This is, of course, no easy task, and probably furnishes the reason why experts have been so reluctant to undertake its solution. The finer adjustments are, no doubt, impossible, but this does not excuse us from adopting certain broad and general principles not difficult to recognize or to handle, especially in view of the fact that our usual *procedure*, in its application to dividends, is absolutely unjust.

Although the relation of expenses to premiums and to reserves *offers a most tempting field for* actuarial exploration, we will not at this time enter therein further than to remark that the present method of loading premiums by a variety of percentage is open to serious criticism, as such margin bears no just relation to the function which it is called upon to perform. And in calculating reserves for ascertaining the limit of solvency, the assumption that the arbitrary margin, with which the premiums may be loaded, is the exact measure for future expenses is wholly indefensible. But our present business is with the relation between the expense element and the distribution of dividends.

Let us illustrate. The so-called contribution plan, so generally in use in this country for making dividends, aims to distribute the profits into their several sources, of gains from interest (over 4 per cent. on reserves), from mortality (actual deaths, below tabular expectation), and from saving upon the marginal loading of the premiums. This is all plain enough sailing until we enter the fog-bank of expenses. The expenses of management, less surrender charges and lapsed reserves, are generally thrown in bulk upon the margin or loading, thus occasioning a dividend which rises with the duration of the policy. In this way part of the dividend is derived from interest, mortality and loading.

It is to this manipulation of expenses that we take exception. It is easy to perceive, that in the present state of interest earnings and for the average company, if the investment and mortality branches of the business were charged with the respective shares of the expenses which they themselves have occasioned, there would be no residual gain from either worth speaking. The expenses of and losses upon investments and assets should clearly be deducted from interest earnings; while the expense of getting the new business (including medical fees) which occasions the low mortality, less surrender and lapse gains, is clearly a debit against mortality. The more careful and conservative actuaries hold back a part of the interest gains as a Sinking Fund, against loss of principal by panic, embezzlement and other incidents, from which all investments are liable to suffer, and on account of diminishing market value as premium bonds approach maturity. They also hold back a part of the mortality gains from excessive new business as Suspended Mortality, against the loss after the fifth year, by reason of the construction of net premiums upon imperfect mortality tables.

Let us endeavor, then, to ascertain without too much refinement some rational basis for the distribution of expenses upon which all might reasonably agree, and free ourselves from the mist which surrounds the subject. We offer the following

SCHEDULE.

INVESTMENT DEPARTMENT.—Interest account, annually.

- Deduct ½% of assets as sinking fund, until it equals 10% of liabilities (this is to be divided as *post-mortem* dividends).
- Deduct ½% of assets, as cost of making and handling investments.
- Deduct $2.00 for *each* paid-up policy and annuity, for expense of taking care of same—there is no other fund but interest to meet this.
- Deduct or add losses or gains on assets, as case may be.
- Add $15.00 per $1,000 of death-claims for loss of interest by paying claims within two months instead of six (debit mortality account for this).

MORTALITY DEPARTMENT.—Gains on mortality, annually.

- Deduct ½ of actual below tabular mortality, as suspended mortality fund, until it equals one year's mortality on outstanding risks (this is to be divided as *post-mortem* dividend).
- Deduct cost of litigation and examination concerning validity of death-claims.
- Deduct medical examinations and expenses of medical department.
- Deduct cost of getting new business (less $4.00 per $1,000 of insurance for ordinary expenses, to come out of margins)
- Add gains from lapsed reserve and surrender charges—these are expected to cover increased mortality by withdrawal or to replace with new insurance.

PREMIUM DEPARTMENT.—Margin account, annually.

- Deduct $4.00 per $1,000 of insurance for ordinary expenses of premium-paying policies.
- Deduct all other expenses not specifically provided for above.

The principal difficulty in constructing the foregoing schedule has arisen in determining the permanent normal cost of taking care of running policies and the proper place for such residual expense as was not specifically provided for. A fixed charge of $4 per $1,000 in

surance seemed on the whole least objectionable. Both are take.. - at of margins. The same amount and method would also seem most practicable as a deduction from loading in making gross valuations.

The above provides a rational scheme for a surplus in the sinking fund to protect the assets against accidents, and the suspended mortality account to protect policyholders against the inevitable excess of mortality which would follow a cessation of new business; while the $4 per $1,000 for expenses ought to be enough to conduct a company when the extraordinary expenses incident to getting new business are no longer incurred —thus insuring a perpetual solvency against all contingencies.

It will be well to take the experience of some fairly average companies for a year, in order more particularly to illustrate the practical working of the foregoing schedule. We have selected three prominent companies, and taken the data from the N.Y. State Report for 1891. The figures are proportionately reduced so as to avoid recognition and to eliminate personalities.

INCOME.

New premiums	$8,044,211	
Old premiums	19,653,890	
	27,698,101	
Interest, dividend and rents	6,165,428	
		$33,863,529

DISBURSEMENTS.

Death-claims	$7,567,320	
Surrendered policies	3,005,670	
Dividends to policies	2,192,990	
Paid commissions	$4,152,087	
" Agents' salaries	166,828	
" Medical fees	301,897	
" Office salaries	475,521	
" Taxes and rent	369,136	
" Advertising	170,751	
" Miscellaneous expense	1,439,554	$7,075,774

INVESTMENT DEPARTMENT.

Interest, etc., received, less loss in market values and on accrued interest		$5,199,413
Add $13 per $1,000 for death-claims, paid in advance of 6 months		98,375
Total increment on investments (4½ %)		$5,297,788
Deduct ½% on mean assets ($121,317,822) for expense of handling investments	$ 606,589	
Deduct 4% on reserve and net premiums	4,725,361	
Deduct $2.00 for each paid-up policy and annuity	100,000	5,431,950
Loss on interest account		$134,162

The surplus of $15,436,839 @ 3.83% earned $591,746 of above interest, so that the real loss, so far as reserves and premiums are concerned, was $725,908, leaving nothing of interest to be divided on the "Contribution Plan."

MORTALITY DEPARTMENT.

Apparent gain, 20% on deaths incurred		$1,541,681
Add gains from surrender charges (1% of $3,005,670)		1,001,890
Add gains from lapses, $25 per $1,000 in		885,150
		$3,428,721
Deduct for litigation and examination of claims	$50,000	
Deduct for medical examinations	301,897	
Cost of new business 50% of premiums ($3 on 166,001 = $994,004)	3,358,101	
Loss of interest on claims paid in advance	98,375	3,808,373
Loss on mortality account		$379,652

This loss would be greater by $770,840 if one-half the "apparent gain" from mortality should be retained against future contingencies.

PREMIUM DEPARTMENT.

Loading 25% on total premiums		$6,924,525
Deduct $4 per $1,000 on $642,684,000 outstanding business	$2,570,736	
Deduct for residual expenses not provided for above	695,040	3,265,776
Gain on margin account		$3,658,749

If we deduct the losses on interest and mortality accounts, we still have $3,144,935, or nearly a million more than was actually paid out in dividend during the year. As the surplus only increased $93,214 during the year, the gains as above estimated are $851,731 *too large*. At any rate, the evidence seems conclusive, that the only just dividend which could be made would be upon the margins of participating policies, and that the overworked "Contribution Formula" is entitled to a long merited vacation, having ceased to be applicable to present conditions.

It is hardly necessary to state that the above is offered tentatively and for the purpose of serving as a nucleus to bring out the thoughts and criticism of others who may have given the subject consideration, and who, we trust, will improve upon it.

CASH SURRENDER VALUES FOR LIFE INSURANCE POLICIES.

BY B. J. MILLER, NEWARK, N.J.

In view of the widely different practices of the various life insurance companies with regard to the purchase of policies, it would seem very desirable that the question of the true basis for a surrender charge should be fully discussed, in order that a more general agreement may be reached as to the principles properly applicable to the determination of equitable cash surrender values.

The principal dangers to be apprehended in the indiscriminate purchase of life policies at the option of the insured are the possible impairment of the average vitality of the company's risks, and the possible loss owing to the enforced realization of the company's assets that might be necessary in order to meet an extraordinary demand for cash surrender values.

The first consideration can, I think, be fully met by a moderate percentage of what Prof. Wright calls the "Insurance Value." The second can, I think, be conveniently met by Mr. Homans' suggestion, that the policy reserve be computed at a higher rate of interest than that assumed as the basis of the company's general calculations.

I think, however, that upon common-sense business considerations a third charge can fairly be made, based upon the failure of the insured to continue his contribution to the general business of the company, according to the terms of his policy contract.

It is to be remembered that the company has no option to take up a policy before maturity, and if an option to discontinue future payments is granted to the insured, it is only fair that he should be charged a moderate penalty, based upon the present value of the future payments he was expected to make in order to complete his policy contract. This penalty should strictly be a percentage of the present value of his future gross premiums. But it is perhaps more convenient to make it a percentage of the present value of his future net premiums, as substantially the same result can be reached by either method. Still, the problem is by no means solved, even if these general propositions be admitted, for it still remains to determine the proper percentage of the insurance value, and the proper percentage of the value of future premiums to be deducted from the computed reserve, and the proper rate of interest to make use of in determining such special reserve.

Prof. Wright maintained that eight per cent. of the insurance value was an adequate surrender charge in every case, and disregarded any other charge for capitalization of assets or for loss of business. It seems to me that he committed two errors in so doing. I think that, while eight per cent. of the insurance value is more than enough to offset any probable loss on the vitality account in many cases, it is in other cases inadequate, and I think that his disregard of any other consideration than that of impaired vitality cannot be justified upon fair business principles.

Experience shows that the selection resulting from the most rigorous medical examinations hardly extends beyond the period of five years; but during the first two or three years, it is worth much more than eight per cent. of the insurance values for those years. In case of an endowment policy with less than five years to run, the adverse selection resulting from the voluntary withdrawal of presumably healthy lives might easily be worth as much as the favorable selection resulting from the medical examinations of candidates for new insurances; and this being the case, a charge of twenty or thirty per cent. of the insurance value might be deemed no more than a fair equivalent for the vitality losses occasioned by the surrender of such policies. In fact, as the favorable results of the selection of lives cannot be held to extend over a period of more than about five years, I think that a surrender charge of, say, twenty per cent. of the insurance values of the next five policy years would be productive of more equitable results than a charge of eight per cent. of the insurance values of all future policy years.

In view of the fact that it is doubtful whether experience shows that any impairment of vitality whatever has resulted from the surrender of policies in companies of good standing, it seems to me particularly unfortunate that the Massachusetts Non-forfeiture Law, framed according to Prof. Wright's theory, should base its surrender charge solely upon the insurance values for all future years.

I cannot, however, agree with Mr. Homans' view, as expressed in his paper published in "Transactions No. 5," to the effect that a surrender charge upon the ordinary dual endowment policy should be a percentage of the insurance value of the term part of the contract, disregarding entirely the negative and offsetting insurance value of the pure endowment part of the contract. Operating upon the theory that the life insured under the policy about to be surrendered represents more than average vitality, it becomes to the company's interest to purchase the pure endowment part of the contract, just as it is against the company's interest to purchase the term insurance part of the contract. One consideration should, it appears to me, be set off against the other. If the dual contract were split into its two separate parts, and it were proposed to surrender the term insurance and retain the pure endowment, then a surrender charge should, of course, be based upon the insurance value of the term policy. But if both of the separate contracts were surrendered at the same time, it seems very clear to me that it would be proper to set off the insurance value of the pure endowment against the insurance value of the term insurance contract, and base the insurance charge upon the difference, which would, of course, be Prof. Wright's insurance value of the dual contract. If the insured proposed to retain his term insurance contract and to surrender his pure endowment contract, I do not think that the company could afford to purchase the latter at any price, without a new medical examination and a careful investigation of the vitality of the insured.

Suppose a man 35 years of age held in the same company a paid-up life policy for $1,000, and also an annuity bond entitling him to $38.46 per annum; $38.46 payable at the beginning of the year being equivalent to four per cent. interest on $1,000, payable at the end of the year. The four per cent. Am. Ex. reserve on the paid-up policy would be $328.81. The reserve on the annuity would be $671.19. The reserves on both contracts would amount to just $1,000. At the end of any subsequent year, the sum of the reserves on the two contracts would always be $1,000. The relation between the member and the company would be the same as if he had simply deposited $1,000 with the company, to be paid to his estate at his death, the company in the meantime to pay him interest at the rate of four per cent. per annum. Is it not true that in such a case the company could at any time take up both contracts for their full reserve value of $1,000, without incurring even the possibility of any damage on the score of impaired vitality? In this case the insurance value of the paid-up policy would always be equal to the negative insurance value of the annuity bond, which, in itself, is nothing but a series of pure endowments. The two separate insurance values would balance each other, and, upon Prof. Wright's theory, there should be no surrender charge. Mr. Homans' suggestion, however, establishes a surrender charge based upon the full insurance value of the paid-up policy, although under no possible circumstances could the company lose anything by impaired vitality owing to the surrender of the two contracts at the same time. It would simply pay out money which it held on deposit, and would be relieved from future interest payments thereon, just as a savings-bank would pay out its deposit and be relieved from subsequent interest payments.

I do not think that the problem of the determination of an equitable surrender charge, where life policies are surrendered for cash values, can be solved upon strictly mathematical principles, or that any simple formula is likely to be devised which can be claimed to produce satisfactory results in every case.

A man who has bought insurance from a company and paid for it in advance, cannot expect the company to buy it back from him at his own option at the same price, any more than he could expect to buy a horse and wagon from a dealer one day and demand that the dealer should take them back at the same price a few days after. The ordinary laws of trade would justify the dealer in retaining a fair proportion of the original purchase money. If the company pays the full reserve for a surrendered policy, it may be said to be taking back the insurance on the same terms as those on which it sold it. No reasonable man could expect such treatment. On the other hand, the insured may reasonably expect to withdraw a fair proportion of his money from the company, leaving enough behind to compensate the company for all insurance rendered to date, and to provide a moderate profit for the company on the transaction. As a policy grows older and approaches maturity, the company can certainly afford to allow a larger percentage of the reserve as a surrender value.

I think that any company would find it a wise plan to purchase policies upon demand where two or three premiums had been paid thereon for an amount not less than a fixed percentage of the four per cent. reserve, and to gradually increase this percentage as the policy approached maturity. Practically, I think the following rule will be found productive of satisfactory results:—

To a given percentage of Prof. Wright's insurance value add a given percentage of the present value of future net premiums, which is readily found by subtracting the reserve from the net single premium for the present age of the insured. Deduct the sum of these two items from a special net reserve, computed at a given rate of interest in excess of that upon which the com-

pany's regular reserves are calculated, and allow the difference as a cash surrender value, provided such value is not less than a given percentage of the regular reserve.

I believe that cash surrender values can be paid upon a liberal basis without detriment to a company's solvency or prosperity, and I think the cases are rare in which a company cannot afford to cash a policy upon which two or three years' premiums have been paid, for a very considerable proportion of the reserve. I cannot believe, however, that Prof. Wright's rule yields an adequate surrender charge in the great majority of cases. His rule would require a company to cash a ten-year endowment policy issued at age 35, for $1,000, for $438.88 at the end of the fifth year, the company's maximum profit on the transaction being the difference between that sum and the policy reserve of $439.79, viz., 91 cents.

ON A COMPLETE ANNUITY DUE.

BY JOSEPH H. SPRAGUE OF CONN. INS. DEP'T.

The above paper bristled with equations, logarithms, compound fractions, square roots, functions raised to the (— mth) power and other such like expressions, on every word of which we have no doubt our readers would hang with feverish interest akin to the perusal of one of Rider Haggard's novels. Consideration for the feelings of our printer, however, moves us to forego for the present the pleasure of reproducing the paper.

REVIEWS OF MR. HOMANS' PAPER ON "INSURANCE VALUES."

From the discussions of Mr. Sheppard Homans paper on "Insurance Values," read at the April meeting we present extracts as follows:—

1. BY WILLIAM E. STARR, WORCESTER, MASS.

In his paper read before the society April 30, 1891, Mr. Homans makes it evident that his opinion of the law which fixes the values of the policies of the Massachusetts companies, in cases of lapse or surrender, is not favorable. He charges the law with an "anomaly" and with fallacies and absurdities.

Whether I shall be able to completely vindicate the character of the Massachusetts law or not, I expect to be able to show that it does not monopolize all the anomalies and fallacies and absurdities.

The "anomaly" which he charges upon the law is, that as the surrender charge imposed by the law is 5 per cent. of the insurance value, and as he says the insurance value of a pure endowment is negative, therefore the surrender charge is negative, and the holder of a pure endowment policy might logically claim a premium on its surrender.

I reply: A pure endowment policy cannot have insurance value. What appears as the negative insurance value of a pure endowment does not conform to the definition of insurance value given in the Massachusetts law, and therefore cannot be the basis of surrender charge under the law. But if it be admitted, for the sake of the argument, that a pure endowment may have an insurance value somewhat less than nothing, even then a negative surrender charge is not suggested either by the law or by logic, any more than the law which imposes a tax upon every estate in proportion to its value logically suggests a negative tax for a worse than worthless estate. And there is no more anomaly in the one law than in the other.

Mr Homans' next proposition asserts the equivalence of an endowment insurance policy to two separate policies of the same date upon the life, each for the same amount and payable upon the same contingencies, each for each, the one policy being for the insurance only and the other for the endowment only.

If this is intended as a tacit suggestion that endowment risks and term insurance risks should have the same treatment as to inducements for entering and facilities for withdrawing, whether in combination or in isolation, I do not admit it, and the Massachusetts law is evidently based upon a different view.

The next proposition is that an ordinary whole-life policy is an endowment insurance. The truth of this proposition I cannot admit. How can a policy insure a man for the whole term of his life and provide him an endowment later? Besides, a whole life policy cannot, in accordance with its terms, become a claim till proof of death is furnished to the company. I see difficulties too in the way of dividing a whole life policy into two policies, representing the insurance part and the endowment part separately, and placing them in different institutions. But Mr. Homans says it can be done, and indeed he has done something which has that appearance. But here is what he says about it: "The endowment portion of a whole-life policy purchased by equal annual premiums is an *evolution*, the germ of which is included in the premium." "It is only in extreme old ages that this germ becomes developed or apparent." This explanation is not the least remarkable thing about the endowment portion of a whole-life policy.

The Massachusetts law was framed for the protection of the policy-holder who finds himself unable conveniently to continue his insurance, and not with any view to assist feeble companies. It was judged that 8 per cent. of the insurance value of any policy, supplemented by a further deduction of 5 per cent. from the value of an endowment policy, would be a reasonable compensation for the policy holder to make to the company out of his reserve for the privilege of withdrawal. And such is the law.

The fact that all the companies decided so promptly not to avail themselves of the 5 per cent. permission does not detract from the merit of the law, but does suggest that those most interested and most competent to judge did not consider it a hard law for the companies. Of course, it would be hard to find an actuary who is not conscious of the ability to frame a better law than ever was framed. But, unfortunately, the opportunity is not often coincident with the ability.

I am not sure that I would be willing to commit myself to the opinion that the Massachusetts law is perfect, but I would honestly advise any enterprising actuary who might desire to distinguish himself by framing the best possible scheme of surrender charges, to attempt to accomplish it within the lines of the requirements and permissions of the Massachusetts law, making use, if found necessary, of any part or the whole of the 5 per cent. permission, with discrimination upon endowments of different terms and ages.

In conclusion, I beg leave to express the opinion:—

That the "anomaly" which Mr. Homans thinks he sees in the Massachusetts law has no real existence;

That it is an absurdity to attribute insurance to a pure endowment policy, or endowment to a whole-life insurance policy;

That it is a fallacy to imagine a mathematical difference between a whole-life insurance policy, a term insurance policy for the term of life, and an endowment insurance policy for the term of life;

That it is a fallacy to assume that the risk on an endowment insurance policy is greater than on its constituent term insurance,

That to condemn Prof. Wright's 'normal future yearly costs of insurance" because they do not "grow less with each advancing year," is to condemn still more emphatically the values which Mr. Homans proposes to substitute;

That the surrender charges proposed by Mr. Homans are too high ;

That my estimation of the Massachusetts law is not impaired by a careful study of Mr. Homans' paper.

II. BY D. P. FACKLER, ACTUARY, NEW YORK.

Though agreeing with Mr. Homans' general remarks as to legislation upon cash surrender values and the impropriety of basing surrender charges solely upon insurance values, I am unable to see that Elizur Wright was wrong in his mode of calculating the insurance values of policies. * * * *

On first reading that part of Mr. Homans' paper, in which ordinary endowments are treated as composed of term insurance and simple endowment, I was disposed to criticize the statement that the latter component is "pure investment," and I think Mr. Homans might have reached somewhat different conclusions had he made his analysis in the following manner, in which one of the components is purely and absolutely an investment :

In the case of a ten-year endowment for $10,000, we find that $800.875, invested yearly at 4 per cent. interest, would amount to exactly $10,000 at the end of ten years. The accumulations at the end of each year (which are not the same as the usual reserves) are shown in column 1 of the following table, and column 3 shows the net insurance required each year. The net level term premium at age 40 for the decreasing insurance is $56.76, which, added to the investment premium above, makes up the regular endowment assurance premium.

The level premium decreasing insurance has only negative reserves, as shown in column 3, which and column 4 are added to show that this theoretical analysis gives results entirely in accord with the common modes of considering the subject.

If we compute the net natural premiums for the decreasing insurance each year as in column 5, we find that their average is just about the same as the level premium ; and then, computing the present value (at the date of issue) of the yearly costs of insurance on this plan (see column 6), and adding these, we obtain the insurance value of the compound contract, which is nearly the same as Prof. Wright computes it for the ordinary endowment contract, and the latter would therefore seem to be correct. Mr. Homans' mode of estimating would make the insurance value twice as great.

A TEN-YEAR ENDOWMENT-ASSURANCE POLICY,

Considered as a *Combination of Yearly Savings Bank Deposits* and *Decreasing Insurances*, paid for either by level term premiums or by decreasing natural premiums.

Age, 40 ; amount, $10,000 ; Actuaries' 4 per cent. ; Net Endowment-Assurance Premium, $857.635 ; Annual Savings Bank Deposit, $800.875 ; Level Term Net Premium, $56.760.

Policy year.	ANALYSIS.		Net insurance paid for by a level term premium.		Net insurance paid for by a decreasing natural premium.		Current age.
	Savings Bank Fund at end of year.	Net ins. required.	Neg. res. for decreasing insurance.	(1)—(3) = Ord. end. ass'ce reserve.	Net nat'l prem. required each year.	Initial present value of the yearly costs of insurance.	
	(1)	(2)	(3)	(4)	5)	(6)	
1	$832.91	$9,167.09	— $36.33	$796.58	$91.34	$91.34	40
2	1,699.14	8,300.86	— 67.56	1,631.58	84.70	80 60	41
3	2,600.01	7,399.99	— 92.86	2,507.15	77.52	70.17	42
4	3,536.92	6,463.08	— 111.51	3,425.41	69.92	60.20	43
5	4,511.31	5,488.69	— 122.62	4,388.69	61.73	50.53	44
6	5,524.67	4,475.33	— 124.67	5,400.00	52.55	40 88	45
7	6,578.57	3,421.43	— 115.97	6,462.60	42.20	31.18	46
8	7,674.62	2,325.38	— 94.30	7,580.32	3022	21.19	47
9	8,814.52	1,185.49	— 56.76	8,757.76	16.25	10.81	48
10	10,000.00	0,000.00	0.00	10,000,00	0.00		49

Sum of column 5, the yearly premium for dec'g. ins., $526.43.
Sum of column 6, or initial insurance value of the decreasing insurance, $456.90.

Prof. Wright makes the I. V. for the ordinary endowment contract to be $464.60
And Mr. Homans makes it 933.00

* * * * * *

In all discussions of the subject, it seems to me that we should bear in mind that the insurance values of policies do not indicate their *business* values to the companies issuing them, for the expression "insurance value" may mislead some, though any one can see that though natural premium policies have the largest insurance values, they may have the least *business* values, as they have no reserves to meet surrender charges and thus ensure persistence.

III. BY WM. D. WHITING, OF NEW YORK.

When an ordinary endowment is surrendered, the assumption is that the life insured is better than the average. Therefore the company loses on the paid-up insurance part of the contract, and on the future premium (annuity) part also, by his withdrawal. But it gains on the pure endowment part *per se*. Therefore, from the insurance values of the first two must be subtracted the insurance values of the third, to arrive at the net result correctly. This is substantially what Mr. Wright did in deducting the reserve on the whole policy from the amount at risk to obtain his "normal costs."

It is perfectly true that Mr. Wright overlooks the loss occurring from disturbed investment, loss of prestige and increased temporary ratio of fixed expenses. But these are to be met by an additional surrender charge and by accrued but undeclared dividend (undivided interest in surplus), and not by dimembering the insurance values of the contract. * * *

The fact is, none of our so-called non-forfeiture laws provide a proper surrender charge. The principles upon which they were made up are obsolete. Competition has now made it requisite that all contracts shall contain a liberal surrender clause to make them popular. The danger is now rather in the direction of too liberal values. Several companies advertise to pay over the entire reserve. In view of this and the conflict of jurisdiction exhibited in Pettus, admr. for Wall *vs.* Equitable Life, we may well ask ourselves if the time has not arrived for the repeal of all such statutes.

DISCUSSION OF MR. HALL'S PAPER ON MEASURING AMOUNT OF INSURANCE ON A SINGLE RISK.

From the discussions of Mr. Clayton C. Hall's paper, presented at the April meeting of the Society, on the above subject, we extract the following :—

I. BY WALTER S. NICHOLS, NEW YORK.

The question discussed by Mr. Hall, though it has never commanded marked attention among life underwriters, has long been prominent in fire underwriting. Here it has been a favorite maxim, that no risk of exceptional magnitude or uncertain character should be accepted, unless enough of a similar kind could be secured to average among themselves. Nearly twenty years ago I combated this erroneous notion, and was surprised when it was repeated by an authority so eminent as Mr. Sprague. A simple case will illustrate the apparent fallacy. A company has $100,000,000 insured in a thousand risks of $100,000 each, which, let us assume, furnish a safe average. On the theory of Mr. Sprague, if that $100,000,000 of insurance had been divided among ten thousand risks of only $10,000 each,

the acceptance of a single $100,000 line might cause a serious deviation from the average. On the contrary, is it not obvious that a company with $100,000,000 of insurance distributed, with a single exception, among many small policies, will be liable to a smaller deviation than if distributed among a few large ones? * * *

Finally, the proper magnitude of a single risk depends on our knowledge of the actual value of the risk assumed. If, through uncertainty as to the value of life at the particular age, or as to the physical condition of the applicant or his climatic surroundings, you are unable to accurately estimate the value of the risk, you cannot afford to write so large a line, for, added to the ordinary risk of fluctuation, is the risk of error in the actual cost of the insurance. This principle is practically recognized in the caution exercised by a prudent company when embarking in a new and untried field, or granting policies at ages where the life-table is unreliable. As a limited experiment it may be profitable, but beyond that it is imprudent. * * *

II. BY T. B. MACAULAY, OF MONTREAL.

By the careful thought and reasoning displayed in this essay, Mr. Hall has done himself credit, and although I differ from the conclusions reached by him, I nevertheless feel that he has placed the members of this society under an obligation. It is much easier to build when another man has done the excavating and laid the foundations, even though the structure to be erected upon it be very different from what the original builder intended.

Mr. Hall lays down as a principle that "the limit of maximum risk upon a single hazard should be determined by reference to the probable deviations from the normal experience, and consequently be proportional to the square root of the most probable number of deaths or claims." He illustrates this by four suppositional companies, in each of which the probable mortality is $1,000,000, but which have policies of different amounts, as follows :—

Company.	Probable Claims			Probable Fluctuation.	Corresponding Maximum of Risk.
	Number.	Amount of each.	Total.		
(1)	100	$10,000	$1,000,000	$100,000	$30,000
(2)	200	5,000	1,000,000	70,000	21,000
(3)	400	2,500	1,000,000	50,000	15,000
(4)	1,000	1,000	1,000,000	32,000	10,000

Now, this table, as it stands, is I think, proof in itself that the theory on which it is based is unsound. The company which has its assurances spread over the largest number of lives is admittedly freest from the risk of variations in its death rate, and should consequently be best able to bear the further risk of fluctuation which would be involved in taking a large line on a single life. Company No. 4, as above, has only to provide for a fluctuation in its existing business of $32,000, while Company No. 1 has to provide for $100,000, or more than three times that amount. A possible increase in its mortality of ten per cent. in the case of No. 1 is a serious matter, and in comparison with its competitors it is not in a position to increase its maximum at all beyond the $10,000 it already carries. It cannot afford to add the further risk of a few policies of such a large amount as $30,000 falling in. Its neighbor, No. 4, however, could run such a risk with ease, since it could provide for two unexpected claims of $30,000 each, and yet have only a probable fluctuation of $92,000, as against the $100,000 already existing in the case of No. 1.

Let us carry the theory a little further. Let us suppose another company whose expected mortality is also $1,000,000, but under ten policies of $100,000 each, the total number of lives assured being, say, 1,000. The probable fluctuation is again the square root of the number expected, or say three of $100,000 each or $300,000 in all. If a probable fluctuation of $100,000 in the case of Company No. 1 gives power to carry $30,000 on a single life, then a probable fluctuation of $300,000 should give power to carry $90,000 or $100,000. We would thus have to conclude that a company of 1,000 policy holders can carry $90,000 or $100,000 on a single hazard, while Company No. 4, of equal size, but having probably 100,000 policy-holders, can only risk $10,000.

But I will be told that such a company as I am supposing could not exist, since the limit it is already carrying is excessive and dangerous. This is quite true but it only strengthens the argument. A logical sequence of the theory is, that a company whose business already approaches the extreme limit of safety, in regard to maximum assurances, can carry more than one whose business has been conducted on conservative lines, while one which has actually gone beyond safe limits can safely carry more than all. A consideration of these facts affords, I think, proof that the correct solution of the problem must be based on the following fundamental principles :—

1st. That no company should incur a risk of fluctuation in mortality of sufficient amount to embarrass it or cause undue variation in the payment of profits to its policy-holders.

2nd. That the simplest way of measuring the maximum amount of total fluctuation which it is wise to risk is by a percentage on the total expected mortality for the year, such percentage to be based on the special circumstances and business of each office.

3rd. That the ability of a company to increase its maximum assurance on single lives is in proportion to the amount by which the probable fluctuation in mortality on its existing business falls short of the percentage on the expected mortality just mentioned.

4th. That as between companies having the same total expected mortality the ability to carry large lines of assurance on single lives is in *inverse ratio*, rather than the reverse, to the probable deviation from the normal mortality. Taking up Mr. Hall's simile of the bridge, I would put it that the weight which the bridge can safely bear is in inverse ratio to the amount of strain which the existing traffic is putting upon it.

I am heartily in accord with Mr. Hall in his condemnation of the idea that "the policies of maximum amount in an office must be looked upon as forming a class by themselves so to speak, self-supporting—so that the claims arising out of these policies are to be paid out of the premiums received upon them." Some years ago the Australian Mutual Provident Society submitted a number of questions, and among them this of maximum assurance, to three English actuaries, Messrs. Robt. Tucker, A. H. Bailey and T. B. Sprague. Their joint opinion on this question was as follows :—

"In fixing the maximum amount of risk to be held on a single life, the principal question to be considered is the probability of obtaining a sufficient number of policies of about that amount to form an average and avoid too great fluctuations in the claims. If a small number of persons are assured for very large amounts, the deaths among these will probably cause the claims in successive years to fluctuate greatly, and it might easily happen in consequence that the divisible surplus in successive periods would fluctuate inconveniently. We recommend that the limit of risk be increased to £5,000, if there appears reason for believing that five or six assurances of that amount will be effected every year."

In their supplementary individual remarks, Mr. Tucker said:—

"There can be no objection, either in theory or practice, to extend the limit to £5,000, provided that a sufficient number of £5,000 policies can be obtained to form an average. An even rate of mortality is obtained by large numbers but an even amount of claims is only to be expected from an equal distribution of risks."

Mr. Sprague's further remarks were:—

"In proportion as the resources of the Society become larger, the effect produced on the divisible surplus by the death of a few persons whose lives are insured for large amounts will be of less importance; and a larger amount may then, in my opinion, be safely retained on a single life than at present. It will, in fact, be no longer so important that the Society should have a sufficient number of lives insured for the maximum amount to form an average."

It appears to me that the position here taken is radically unsound. As Mr. Hall has pointed out, if enough members of the maximum amount to obtain average results must be secured, then the smallest company can as readily assume risks of $100,000 as of $1,000. But from the quotations given above it is evidently not intended that the word "average" shall be taken literally. If a company only issues five or six policies of maximum amount in each year, it cannot hope to ever have a sufficient number of such policies to assure an average death-rate. As a precaution against fluctuations in mortality, this proviso seems to be quite useless. There is a safety in large numbers, but not in small classes of five or six, or even fifty or sixty. As a matter of fact, a company which has, say, fifty or sixty policies of maximum amount is much more exposed to fluctuations in mortality from this source than another which has only one such policy on its books. Let us take an illustration: A company has 10,000 assured lives, of whom 9,999 hold policies of $1,000 each, and one has a policy of $25,000. If we assume a death-rate of ten per thousand, the expected claims will be, say, $100,000, so that even if that one large policy-holder were to die, there would be a fluctuation of only about 25 per cent. in the annual mortality from this source; but if there are fifty of these large policies, we must take into account the chance of two, three or four such claims falling in in one year. If three more than expected were to die, there would be an extra mortality of $75,000, or 75 per cent. instead of 25 per cent., as in the other case. It follows, therefore, that a company which issues eight or ten maximum policies in a year is liable to greater fluctuations in mortality than one which issues only one or two such policies, and is therefore less able to carry the maximum line on single lives than the other company. This is diametrically opposed to the opinion of the prominent English actuaries I have quoted, but is, I think, sound.

If we accept the theory that, other things being equal, the ability of a company to carry a large amount on a single hazard is in inverse ratio to its probable fluctuations in mortality, it next becomes important to see that the principle is correctly carried into practice. And in this connection we must see that we do not fall into the error which we have just been condemning, of subdividing the business into classes by amount. The probable fluctuation cannot be correctly ascertained in that way. Let us assume a company with expected claims of

33	of $10,000,	amounting to	$330,000
67	" 5,000,	"	335,000
335	" 1,000,	"	335,000
In all 435	claims,	amounting to	$1000,000,

How is the probable fluctuation in this case to be ascertained? The fact that the policies are of varying amounts has no influence on the probable fluctuation in *number* of claims. And if the policies were all of $1,000 in the above example, the probable variation would easily be arrived at. The only bearing which the variation in amount has on the case is, that on certain policies there is a chance of losing an excess beyond the $1,000 already provided for, or, in other words, in one case $9,000 and the other $4,000. To ascertain the true probable fluctuation in the above case, we would proceed as follows:—

√435 = 21	-	of $1,000 each	$21,000
(√100 = 10)	"	4,000 extra each (making $5,000)	40,000
(√33 = 6)	"	5,000 further extra each (making $10,000),	30,000
Total, 21, amounting to			$91,000

This, of course, gives a smaller total than if the groups were considered separately, and yet even it gives too large a figure, for it must not be forgotten that the probable fluctuations may be on either side of the line—either too much or too little. And any subdivision into classes, such as the above, ignores the fact that many of these fluctuations will nullify each other, so that the total probable fluctuation will be less than the sum of those for the groups. For this reason it would be advisable to take an average amount for the claims on the bulk of the business, and only keep those policies which are considerably above the average in groups by themselves.

By the above means we can ascertain with comparative accuracy the probable deviations from the expected mortality. If any objection be made to the small amount of grouping which will yet remain, as yielding results still somewhat excessive, it must be borne in mind that there is also a small possibility of errors arising in excess of the square root of the number expected, and the one contingency can be placed against the other.

Having now ascertained the probable deviation in mortality, we are in a position to form an intelligent opinion as to the maximum line which the company can carry on any one life. We must take into consideration the special circumstances of the institution, its mode of dividing profits, and other matters, and decide what percentage of its total expected mortality it can stand without inconvenience as an adverse fluctuation for the year. Compare this, then, with the existing probable fluctuation already found, and decide whether there is any margin remaining to provide for the further fluctuations in the death-rate, to which policies of larger amount might give rise. If there is such a margin, an increase in the maximum of risk may safely be made, but not otherwise. And in deciding the matter, the number of such large policies which will be issued must be taken carefully into account and the probable further deviation based on that estimate.

In the foregoing review of the question I have looked at it from a theoretical standpoint only. In actual practice there are other points which have to be taken into account, as, for instance, the moral hazard and the heavy mortality which is known to prevail among large policies, on this side of the Atlantic at least. I have merely endeavored to point out some cardinal principles which should, I think, be recognized in any future discussion of the matter.

IV. BY J. M. CRAIG, OF NEW YORK.

The paper presented by Mr. Homans at the last meet-

ing of this society on "Insurance Values as Bases for Surrender Charges," is deserving of more than ordinary attention, because it discusses a *condition* as well as a theory.

It is said that the resort to an extreme case is generally best for elucidating a principle.

With this view we will take a policy for $1,000, issued at 30 and payable at death or 40, having paid nine years. The reserve is $877, and the surrender value is likewise $877. This surrender value will purchase a policy due in one year, whether the insured be dead or alive, for $912, which must be carried on the books of the company without an allowance of *one cent* for expenses, which, of course, is an absurdity. And to make the matter worse, the inexorable tax gatherer lays claim on a part of the reserve.

The author of what is now generally known as the "Massachusetts non-forfeiture law" probably did not design to establish a scale of loaded single premiums, but, as a matter of fact, the law does establish a scale of gross single premiums for all companies subject to its provisions.

The reserve is the gross premium it establishes. The surrender value is the net premium, and the surrender charge of 8 per cent. of the insurance value is the margin.

This is one of the most pernicious elements in the whole law, because it implies the necessity of governmental aid in constructing premiums, and the principle once encouraged is liable to extend to annual premiums. There certainly is no more justification for requiring companies to adopt a certain scale of single premiums than for a similar requirement on annual premiums.

The anti-rebate law provides that "no life insurance company doing business in Massachusetts shall make or permit any distinction or discrimination in favor of individuals between insurants of the same class and equal expectation of life in the amount or payment of premiums or rates charged for policies of life or endowment insurance."

The evident intent of this law is, that for the same kind of insurance two men of the same age and equal expectation of life shall pay the same premium. Let us see how these two laws work together.

A policy issued at age 30, payable at death or 75, and having a reserve at the end of 20 years of $535, can be converted into a single premium policy for $1,000 at the option of the insured. The published rate of a company subject to the provisions of this law for a similar single premium policy is $572.19. Here is a difference in favor of one man against another of $37.

A policy issued at age 30, payable at death or 60, and having a reserve of $604, at the end of 15 years can be converted into a single premium policy for $1,000, while the published rate for such a policy is $661.55, a difference of $57.

If the view herein advanced be correct, then it follows that those companies operating, under both the non-forfeiture and anti-rebate laws, must either change their single premium rates to conform to those established by the non-forfeiture law or else plead in self defence that although one law forbids discrimination another makes it mandatory.

Having already shown that one practical effect of the application of the non-forfeiture law is to create a scale of gross premiums, notwithstanding the prime object was to secure an equitable charge for surrender, we are justified in viewing the question from the standpoint of loading.

The office premium on a single payment policy includes the total expense charge down to the maturity of the contract, and I am not aware that any writer has advocated the return of any portion of this expense charge in the event of surrender before maturity.

The same may be said of all limited payment policies when the premiums are fully paid. Even this law sanctions the retention of unearned margins in addition to the surrender charge prescribed and therein discriminates in favor of those who pay an equivalent annual premium over the whole period of the contract.

The argument has often been adduced that the surrender charge imposed should be sufficient to secure a substitute in place of the retiring member. The difficulty seems to have been to determine what that cost would be. Perhaps the principle upon which the anti-rebate law is based clears away the difficulty.

Why not consider the member, who permits his policy to lapse, his own substitute, so far as the circumstances will permit? This can be accomplished by giving him as much paid-up insurance for the reserve charged against his policy (and no more) as would be granted to a new insurant of equal age and expectation of life for the same single premium, according to the published rates of a company.

This would prevent all discrimination, and would be elastic enough to permit such variation in the published rates of different companies as competition or experience dictated.

Financial and Statistical.

FAMILIES OF TWELVE CHILDREN.

Some time ago the Quebec legislature passed a law, offering a free grant of one hundred acres of government land to all persons who could prove themselves to be the fathers of families of twelve living children. This is a mere revival in a modified shape of the mediæval statutes in force in Canada under the French régime, by means of which, re-inforced since by the continuous pressure from the clergy, the French Canadian race has become probably the most prolific on the face of the earth. Louis XIV., the "father of New France," passed a decree as long ago as 1667, "that in future all inhabitants of the said country of Canada who shall have living children to the number of ten, born in lawful wedlock, not being priests, monks, or nuns, shall each be paid out of the moneys sent by his Majesty to the said country a pension of three hundred livres a year, and those who shall have twelve children a pension of four hundred livres; and that to this effect they shall be required to declare the number of their children every year in the months of June or July to the Intendant of Justice, Police, and Finance, established in the said country, who, having verified the same, shall order the payment of said pensions, one-half in cash and the other half at the end of each year." The modern improvement on this plan, which Mr. Mercier's fertile brain has evolved, has some advantages over the old one. It is no longer a cash annuity which is to be given, but one hundred acres of rocky land in the backwoods of the province. Colonization will thus be encouraged, and tracts of comparatively worthless soil made tax-bearing. It is reported that, up to date, 1577 heads of families of twelve living children haved claimed the bounty. Where else in a population of but little over a million could this result be obtained? And it is expected that many more applications will yet be made. Verily, Mr. Mercier is a genius.

THE GOLD DRAIN AND THE MONEY MARKET.

(From *The Statist* of London.)

While gold was being shipped from New York in large amounts week after week during the first half of the current year, we predicted that the current would turn before many months were over, and that in the autumn very large sums indeed would have to be sent from Europe to the United States. At the time the general public took a different view, and some of our contemporaries undertook to prove that we were mistaken. But now everybody has come round to our view, and fears are beginning to spring up that before the year is out the European money markets may be disturbed by the drain. Are these fears well founded? We do not quite think that they are. In the first place the great European banks are exceedingly strong now. In round figures the Bank of England holds about 25½ millions sterling in gold, the Bank of France about 53½ millions, and the Imperial Bank of Germany about 37 millions sterling, or in round figures these great institutions hold between them 116 millions sterling; and the smaller European State banks are also fairly well supplied. It seems clear, therefore, that a very large sum could be spared without necessarily disturbing markets. For instance, even if the Bank of England were to lose three millions sterling between now and Christmas, it would be still stronger at the end of that time than for a considerable time past it has been at the same date. The Bank of France, it would seem, could spare 12 millions sterling, and the Imperial Bank of Germany might spare another 10 millions. At all events, the three institutions, one may safely say, could part with 10 millions sterling without serious danger to the European markets. As we have often reminded our readers, the Imperial Bank of Germany is allowed to issue notes in excess of its authorized circulation and of its coin and bullion, by paying a duty of 5 per cent. upon the excess. Therefore, even if the drain from the Imperial Bank of Germany were to become very large, there need not be any reduction in the reserve. Of course the Bank would have to charge rates sufficient to cover the duty and leave a profit, and therefore the Berlin market would be tight; but at the same time there need be no scarcity of money.

WHAT'S IN A NAME?

What's in a name? That Franciscan missionary, Father Hennepin, in his narrative of the earlier voyages to the country north of us, says:—

"The Spaniards were the first who discovered Canada; but at their first arrival, having found nothing considerable in it, they abandoned the country, and called it *Il Capo di Nada*, that is, the Cape of Nothing. Hence, by corruption, sprang the word Canada."

And Charlevoix, the historian, speaking of the route of Cartier in the Gulf of St. Lawrence, in 1634, says:—

"This bay (Chaleur) is the same that is laid down on some maps as Baye des Espagnols; and there is an old tradition that Spaniards entered it before Cartier, and that seeing no signs of any mines there, they had several times repeated the *Aca nada*—nothing there. This the Indians subsequently repeated to the French, inducing them to suppose Canada to be the name of the country."

Lying before us, with various Annual State Insurance Reports, is the Report of Superintendent Fitzgerald for the Dominion of Canada for 1890, a volume of 550 pages. It shows that nearly a hundred insurance companies,—Canadian, British, and American,—are doing business in the Dominion, and their premium receipts last year amounted to over $15,000,000. This is something, to say nothing of some other things. What's in a name?—*Baltimore Underwriter.*

The total wheat crop of the United States is estimated by the Department of Agriculture at about forty million acres and 563,000,000 bushels for 1891, as against 400,000,000 bushels for 1890. The wheat crop of Manitoba is estimated this year at 20,000,000 bushels, and of good quality. The crop of the United Kingdom is placed at about 70,000,000 bushels.

In a brief article in the *Monetary Times*, recently, we notice that the population of France is compared with that of England, in which the statement is made that the population of the latter is 37,700,000 and that of the former about 38,000,000. The figures credited to England are, approximately, those of the entire *United Kingdom*, according to the last census, the exact figures being 37,940,283. The population of England and Wales together is 29,001,018.

The surplus of money in the United States treasury on August 1st last amounted to $57,018,504. Customs receipts during July aggregated about $15,500,000; internal revenue receipts about $14,500,000; and miscellanous receipts about $4,000,000. Add to these amounts $5,500,000 for repayments and the total is $39,500,000. Against this are $35,500,000 of expenditure, including $14,000,000 for soldiers' pensions, indicating an increase in the treasury cash of $4,000,000.

Speaking of the healthy development of the farming interest in the Northwest, a correspondent of the Toronto *Globe*, writing from Brandon, says: "To obtain free homesteads in the present day, the emigrant must either go out West, where millions of acres are being opened to settlement by such railways as the Regina and Long Lake or the Calgary and Edmonton, or steer for some smaller place than Portage, Brandon, Virden, or the more important farming centers. Lands immediately around these points are held at from $20 to $30 per acre, and a figure as high as $50 has been paid this season for land on the Portage plains. These prices have been paid by hard-headed citizens from away back, and not obtained from 'young bloods,' which is the delectable appellation applied to that class of young Englishmen who, drawn from cities and reared to neither toil nor spin, and who (in the vernacular) have never had 'to do for themselves,' have come in hundreds to the Northwest, and engaged in that popular and amusing form of trading that consists of bartering money for experience."

It is of interest to note just at this time that the sugar supply is undergoing a considerable increase, not only in Cuba but in the Argentine Republic. The latter has cane plantations of 42,500 acres this year, as against 34,350 acres in 1889, the estimated value of the crop being about double that of 1889, or $12,750,000. The Cuba sugar crop will exceed that of last year by more than 100,000 tons, though the molasses supply will be much less. Following is the yield for ten years past:—

	Tons.	Sugar.	Molasses.
1891	"	750,959	64,247
1890	"	632,368	115,081
1889	"	560,333	107,857
1888	"	656,719	157,791
1887	"	646,578	153,015
1886	"	731,723	187,064
1885	"	631,967	146,984
1884	"	558,987	115,352
1883	"	460,397	100,292
1882	"	595,837	131,224

To June 30, the exports aggregated 493,967 tons, against 380,642 tons for the same period last year.

Correspondence.

We do not hold ourselves responsible for views expressed by Correspondents

LETTER FROM TORONTO.

Editor INSURANCE AND FINANCE CHRONICLE :—

I assume that it is part of the duty of State or Government Superintendents of Insurance to familiarize themselves with the charter of each company reporting to their departments. I am led to make this remark after reading that excellent article, "A Practice Which Needs Amendment," that appeared in your last issue. At least two of the leading American companies, with a view to attract business, are known to own or are erecting buildings in different cities of the world, and some well informed men question the legal right of these companies to invest enormous sums of money in such buildings, many of which are proving doubtful investments. This is said to be the case of the Berlin building of one of the companies.

An American writer might truly inquire :—"But what about the Canadian companies, are they not erecting palatial buildings and are they all acting strictly within the meaning of their charters?" So far as the buildings are concerned, I believe they are a necessity, as those companies that have built and are building were unable to obtain the necessary accommodation without building for themselves. Whether some of the buildings are unnecessarily large is another matter, and future experience must decide that.

The majority of the Canadian companies have probably not violated their charters in making investments, although in the last Insurance Report one company is stated to own, among bank and other stocks, some of its own stock as a life company. I have heard doubts expressed as to whether the company in question has the power to own these stocks, and especially the company's own stock.

The investment of a life company's funds, although a most important matter, is one that the press, even the insurance press, do not appear to analyze. I consider your recent article above referred to a most valuable and timely contribution in view of the enormous amount invested in real estate by some of the companies.

Socially, the meeting of the Actuarial Society of America, held here two weeks since, was a pronounced success. The dinner was held at the Queen's Hotel, and was said to be quite equal to those given at New York and Hartford, where the former meetings were held. A pleasant introduction was that of a string band which furnished fine music during the dinner, after which two of Toronto's best singers delighted the visitors with some songs. Mr. Wm. McCabe was chairman, and his remarks on that occasion appear to have been appreciated by the actuaries from the other side. Those who remained over to the last afternoon together with their ladies were taken for a drive through the city and thence to the palatial residence (Glenedyth) of Mr. Samuel Nordheimer, who together with his charming wife entertained their guests at a five o'clock tea. On behalf of those present, Mr. St. John of the Ætna Life thanked Mr. and Mrs. Nordheimer for the splendid reception that had been accorded them, and took the opportunity to say, that they were all delighted with Toronto, and that many of those who had never visited Canada before were pleasantly surprised to find it was a large and progressive city.

The Mutual Reserve Fund Life of New York are likely to have another law-suit on their hands. It appears that the late J. H. McLean, city editor of the *World* here, held a certificate in that association for $5,000, and his widow has entered suit for that amount. The association claims that the assessment due on May 1st, 1890, was unpaid, and therefore the contract ceased to exist. The plaintiff contends that it was understood that the advertising account in the *World* was to run as a contra account to the assessments. This the association denies, claiming that the certificate was written off their records, and that they did not issue to the deceased any renewal receipts.

What was expected to be an interesting case, that of Owens *vs.* New York Life, came to a sudden termination at London, Ont., last week, by the plaintiff being non-suited. It appears Owens was in the employ of the company for between one and two years, at a large salary, but proving unsuccessful, the company terminated his contract. He thereupon sued the company for $5,000, and upon coming to trial, much to the surprise of every one, the company claimed he had no contract, not having furnished a bond. The presiding judge thereupon decided this was fatal to the plaintiff, and decided the case as I have stated. I understand that the plaintiff intends to appeal the case, on the ground that the New York Life had waived the right to such defence, having kept the agent in their employ for over one year without a bond, and by the payment of the salary had regularly recognized the contract.

We had almost forgotten Mr. A. H. Gilbert, formerly agent of the Sun here, when his name appeared in connection with a mortgage suit, in which he is said to have been pretty well cleaned out before departing for New York. It was stated that he was a defaulter to the "Alliance Bond and Investment Co.," the unfortunate concern he was last connected with here. The statement is untrue, and was evidently published by some enemy when the poor fellow is not here to defend himself. The truth is that if the Alliance paid 100 cents on the dollar, Gilbert would have to draw about $50 from them instead of being indebted a single cent. This, I believe, is the correct state of affairs, which should be made known in justice to the absent man.

Mr. Cohen, president of the Life Underwriters' Association here, was in town last week, and is hustling around to obtain the different managers' signatures in support of an anti-rebate bill. I believe they have nearly all signed, and those that have not done so are requested to write Mr. Cohen, care of the Sun Life, Toronto or Montreal, requesting him to send the form for signature.

Mr. Ellis, of the Federal Life, returned from the Northwest two weeks ago, and was so charmed with the country and business, that he left last week for a six months' trip up there in the interests of his company.

Mr. T. C. Livingstone, manager of the Mutual Life at Winnipeg, was in town on his way to visit his family in Hamilton. He reports business in Manitoba as fair, with encouraging prospects, although he expresses a doubt as to there being a noticeable improvement much before spring.

Mr. R. H. Matson has returned from the Northwest, where he has been on an organizing tour. He reports the business of the Provident Savings in Canada as showing a great increase over last year.

Professor Stewart, the traveling actuary of the Mutual Life, was in town last week, when he met the agents of the Mutual Life in convention. After business, Mr. Stewart was entertained at dinner at the National Club, when the representatives presented him with a handsome gold mounted cane. I see that it is claimed for the Professor that he was the originator of the tontine plan of insurance. Both the Equitable and New York Life claim to have originated that plan; so to settle the matter now, perhaps some of your readers can either confirm Mr. Stewart's claim or enlighten insurance men as to the name of the originator. I have also heard the names of Messrs. Homans, Van Cise and Guiteau mentioned as originating the tontine plan, but not that of Mr. Stewart's until it appeared in print a week or two ago.

Business is reported, as heretofore, quiet, and as to real estate it remains "firm" with holders, the reason being that there are no purchasers to be found just at present.

P. B. P.

TORONTO, Oct. 12th, 1891.

Notes and Items.

The Province of British Columbia has been added to the territory of the Lancashire insurance company's general agency under the management of Mr. S. C. Duncan-Clark of Toronto, and is consequently in good hands.

The Pittsburg Insurance World says, that "the difference between the old-line and assessment companies is that the former brushes aside all technicalities in the settlement of claims, while the latter brushes aside the claimant."

The list of mutual fire insurance companies which have failed or retired in the United States since January last numbers, according to the *Spectator*, 24, only 6 of which re-insured, 3 retired, and the remaining 15 were flat failures.

The attempt of certain retiring assessment life associations in New York to transfer the membership to other concerns, without requiring them to assume existing liabilities, has been frustrated by the insurance department of the State.

The stock fire insurance companies have captured the risk on the plant of the American Rubber Company at Cambridgeport, Mass., which has heretofore been carried by the mutuals. The line amounts to $1,200,000 at a rate of about 60 cents.

The Sun Fire Office, of London, it is stated on the authority of the Boston *Standard*, has arranged to establish a separate department office at Chicago, embracing several Western States, with Mr. Edmund Gardner, for some time the State agent for Ohio, as manager.

The position of cashier for the New York Life, from which Mr. Banta was removed, has been filled by the appointment of Mr. Edmund O. Stanton who is to be known as secretary. Mr. Stanton was formerly manager of the Metropolitan Opera House of New York.

It is stated from New York that the Western department of the Caledonian, with headquarters at Chicago, is to be discontinued, and that Mr. S. T. Collins, the Chicago manager, goes to Philadelphia as assistant to the company's United States manager, Mr. H. W. Brown.

Another Pacific Coast company the California insurance company of San Francisco—abandons the Eastern field, having re-insured the business of its Eastern department in the People's Fire of Manchester, N.H. Western business seems to be greatly preferred now-a-days by a good many companies.

Justice has overtaken one Edward A. Cantley at Marion, Ind., in the form of a three-years sentence to the penitentiary for systematically defrauding accident insurance companies for forging claims for disability He held policies in eight companies for $34 000, and was drawing about $300 a week for alleged injuries.

A Russian Jew in Boston, named Joseph Schnitzer, has been arrested by Fire Marshall Whitcomb, caught in the act of setting fire to a tailor shop owned by Jacob Levine, over insured. Collusion between these men is charged. Schnitzer is believed to have set a number of fires, and had been watched, with the above result.

The fire loss for September in the United States and Canada was $10,658,200, according to the New York *Commercial Bulletin*. In September, 1890, it was $6,043,700, and in 1889 $9,735,900. The total loss for the nine months of this year foots up $98,960,670, against $78,487 545 in 1890 and $96,196,250 in 1889 for the corresponding period.

The desired Act of Parliament has been passed, asked for by the Sun Fire Office, allowing a subscribed capital of $12,000,000 and extending the powers of the company to transact any and all kinds of insurance, the name hereafter to be the "Sun Insurance Office." The liability of the shareholders is to remain, as heretofore, unlimited.

As was generally expected, the vacancy in the presidency of the Metropolitan Life of New York, occasioned by the death of President Knapp, has been filled by the election to that position of Mr. John R. Hegeman, for twenty-one years vice-president, and to whose management the success of the company is mainly due. Mr. Haley Fiske, for many years counsel for the company, was elected vice-president.

Penal servitude for five years is the reward of merit accorded Michael O'Mara, a slick swindler, who proposed to an agent of the Prudential of England to obtain lapsed policies, have them revived, submit false evidence of the deaths of the assured, and share the proceeds between the two. The agent feigned complicity, notified the company, and O'Mara got more than he bargained for.

Our statement in the last issue of the CHRONICLE, that no appointment had been made of a manager for the Caledonian in place of Messrs. Taylor Bros., still remains true as we go to press. Evidently the very unusual selection of a practically inexperienced junior for agency manager from the ranks of insurance brokers, if such selection has been proposed as alleged, causes the directors of the company, as well it may, to hesitate as to their course

The American ship "Fanny Tucker" was burned a few weeks since on the coast of Brazil, en route from St. John, N.B., to Seattle, Washington. On arriving in New York, Thomas Suttre, one of the crew, was arrested at the instance of the chief inspector of the National Board of Marine Underwriters, charged with conspiring with Captain Frost to burn the vessel. The ship was valued at $30,000 and the cargo at $120,000, and was well insured.

The Alliance of London has secured the business and bought the stock of the Union insurance company of San Francisco, and will continue the company for the present, Mr. James remaining president. It will be remembered that in May last the Commercial Union reinsured all the Union's business east of the Rocky Mountains. The capital of $750,000 is to remain intact, and the net surplus increased to $1,000,000. The Alliance is to guarantee all its policies.

A bill was recently filed in the Chicago courts by the Home Life insurance company of New York, against Mr. Edgar H. Kellogg, for several years the company's superintendent in Chicago, for the foreclosure of sundry mortgages, alleging that Kellogg, when he retired from the company's service last spring, was an embezzler to the extent of $30,000, to secure which he gave mortgages and notes now due and unpaid. Mr. Kellogg now sues the president and vice-president of the company for $50,000 damages for making the charge of embezzlement, which he denies.

We had occasion not long since to take an esteemed contemporary to task for printing entire, without credit, one of our editorials entitled, "What Life Assurance can do." The proper credit was doubtless omitted unintentionally. Now, however, we notice that the *United States Review* prints the same article, and credits it to the *Insurance World* of London, although that journal, which copied our article, gave credit in the plainest manner possible. Help yourselves freely, brethren, to anything we have, only don't forget to tell people where you got it.

Swindlers are also liars.—The vice-president of a "bond investment" concern in Kansas having represented that the State insurance superintendent, Mr. McBride, had investigated his scheme and endorsed it, as had also the governor, Superintendent McBride promptly wrote the Leavenworth *Times*, stating that he *had* investigated the bond concerns and had denounced them as "palpable frauds without one redeeming feature," adding that he had forwarded several of their circulars to the post-office department at Washington, and that both the governor and attorney general were anxious "that these swindles should be suppressed."

The United States Life now issues a policy which seems to us to embody very desirable features, on what is called the Guaranteed Income Plan. An insurant at age 35, twenty payment life plan, for $10,000, is guaranteed either $5,393 in cash at the end of the twenty years, a paid up policy for the $10,000, or an annuity of $470. In addition to these options the policy contract stipulates that at the end of the fifth or any subsequent year the holder may obtain from the company a loan for an amount equal to the entire reserve, actuaries' 4 per cent., less the premium for the next ensuing year. We are not surprised to learn that this policy is becoming popular.

As heretofore stated in these columns, the proprietor of the INSURANCE AND FINANCE CHRONICLE recently purchased, at considerable expense, the entire interest in Canada, under the copyright and otherwise, of the "Merchants' and Manufacturers' Fire Insurance Expiration Book." Soon thereafter, learning that parties in Toronto had issued the same book in a cheap form and disposed of considerable numbers to the companies, the present proprietor took prompt measures to protect his rights, with the result that an amicable adjustment has been substantially made, and all copies in the hands of companies thus purchased are to be made subject to his disposal, with regard to which no doubt satisfactory arrangements can be made.

We are indebted to Insurance, our New York contemporary, for a liberal extract from a circular issued recently by the "Supreme Dictator" of the assessment life order, known as the Knights of Honor, from which we learn that triple assessments were made in June, July and August, and would also be required for September and October. After the latter date the prediction is made that "not more than twenty-six assessments per annum will be needed to keep us in splendid condition." The Knights of Honor commenced business about seventeen years ago, and notwithstanding large accessions annually has had an increasing death rate, that of 1890 calling for $13 per $1,000 insured. This year will show a big jump upward.

We have heretofore called special attention to the great national work called "Lovell's Gazetteer and History of Canada," some time since projected, to be embraced in eleven large volumes. It is now proposed to organize a joint-stock company, with a capital of $200,000 in shares of $100 each to push forward the work, which as projected will be of national importance and of untold value. It is to be a complete history of every province in detail, including illustrated descriptions of cities, towns and villages, counties, districts, and parishes, with portraits of leading men, pictures of institutions and separate maps of the Dominion and the provinces. The veteran publisher, Mr. John Lovell, of this city, is the projector and to be the publisher. We heartily commend the work.

PERSONAL MENTION

MESSRS. J. J. AUSTIN and H. N. YATES have been appointed general agents of the Phœnix Fire of Hartford for the city of Victoria, B.C.

MR. J. E. CRANE, of Victoria, manager of the Sun Life of this city for British Columbia has been spending a few days in Montreal very pleasantly.

MR. W. RICHARDSON, long connected with the company, has been appointed branch manager at Liverpool of the North British and Mercantile.

MR. J. B. MOFFAT, of Manchester, Eng., general manager of the old Manchester Fire office, accompanied by Canadian Manager Boomer, spent some days in Montreal last week. Mr. Moffatt also visited Toronto, and has gone to Winnipeg, Chicago and San Francisco, as well as other centres.

MESSRS. MAJOR AND PEARSON have been appointed general agents at New Westminster, Vancouver and B. C. Mainland for the Phœnix Fire of Hartford. General Manager Hart is to be congratulated on securing such well-known and in every sense first class men as representatives for his company.

PROFESSOR WM. P. STEWART, the well-known instructor of agents, of the Mutual Life, has been in Montreal this week, holding an interesting school of instruction, well attended. Manager Brown and his agents are much pleased with the exercises, closing on Thursday evening with a banquet at the Windsor, given by Manager Brown, who, as usual, did the honors of the occasion most handsomely.

AMONG THE NOTED VISITORS to this city during the last fortnight were.—Messrs. G. W. Phillips, actuary of the Equitable Life, N. Y.; Oscar B. Ireland, actuary of the Massachusetts Mutual Life of Springfield; Geo. B. Woodward, secretary and actuary of the John Hancock Life; J. N. Lane, general manager of the United Fire, Manchester, Eng, accompanied by United States Manager Wm. Wood; Professor W. P. Stewart of the Mutual Life, N. Y.; Alfred Shortt, Halifax; W. H. Harper, Chatham; A. Dean, Toronto; W. Rowland, Toronto, Geo. F. Hanson, Toronto; A. Duncan Reid, Kingston.

THE INSTITUTE of ACTUARIES.

NOTICE IS HEREBY GIVEN:

1. That the Annual Examinations of the INSTITUTE OF ACTUARIES will be held in the Colonial Centres on *Friday, 29th April*, 1892, and *Saturday, 30th April*, 1892.
2. That the respective Local Examiners will fix the places and hours of the Examinations, and inform the Candidates thereof.
3. That Candidates must give notice in writing to the Honorary Secretaries in London, and pay the prescribed fee of One Guinea, not later than 31st December, 1891.
4. That Candidates must pay their current Annual Subscriptions prior to 31st December, 1891.

By Order,

THOS. H. COOKE, } *Hon. Secs.*
GEORGE KING, }

R. W. TYRE, *Local Examiner at Montreal.*

TOWN OF PORT ARTHUR.

$75,000.00 DEBENTURES FOR ELECTRIC STREET RAILWAY PURPOSES.

SEALED TENDERS will be received by the undersigned up to Monday the 16th day of November, 1891, for the purchase of the whole or any part of the above issue of Debentures by the Town of Port Arthur. The By-law under which these Debentures are issued has been ratified and confirmed by the Legislature of the Province of Ontario, and the route of the railway has received the assent of the Lieut.-Governor in Council. The Debentures are issued in amounts of $1,000 each for a period of 30 years, bearing interest at the rate of 4 per cent. per annum, payable half-yearly.

Further particulars may be had on application to

W. H. LANGWORTHY,
TOWN CLERK.

CORPORATION OFFICES,
Port Arthur, September 15th, 1891.

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