ACTUARIAL SOCIETY OF AMERICA.

"The work of science is to substitute facts for appearances and demonstrations for impressions."—RUSKIN.

Papers and Transactions,

1891—1892,

With Index.

VOLUME II.

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CORRIGENDA.

Page	Line	For	Read
50,	23,	In Table D, last two columns, Percentage,	Ratio.
55,	16,	In Table H, last two columns, Percentage,	Ratio.
205,	30,	Connecticut Mutual,	United States.
209,	16,	will,	will not.
209,	19,	accept,	expect.
355,	5,	Wednesday and Thursday,	Thursday and Friday.
355,	7,	Wednesday,	Thursday.
358,	15,	360,	359.
358,	29,	Thursday,	Friday.
387,	2,	by,	Table based on.
420,	32,	by,	Table based on.

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ACTUARIAL SOCIETY OF AMERICA.

PAPERS AND TRANSACTIONS,

1891–1892.

VOLUME II.

CONTENTS.

NOTICE.

The Society is not responsible for statements made or opinions expressed in the articles, criticisms and discussions published in these "Papers and Transactions."

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Number 5.

W. Simonis

PAPERS AND TRANSACTIONS

— OF THE —

ACTUARIAL SOCIETY

— OF —

AMERICA

For the Years 1889 and 1890

IN FOUR PARTS

NOW BOUND TOGETHER, WITH INDEX

March, 1891

ERRATA.

PAGE 20. Thirteenth line from bottom, read "too old to learn and if that will give immortality I am sure of it, etc."

PAGE 55. Title of Mr. Fackler's paper should read "History of Dividend Systems in America."

PAGE 69. Insert "Second Dinner. After the regular meeting was over a majority of the members dined together in the 'Dining Hall' of the Union League Club by the courtesy of Mr. Homans. Many interesting anecdotes and narratives made the affair very enjoyable to all present."

PAGE 108. In proposed amendments in paragraph 3 add "change 'three' to 'two' in last line of Art. VII."

PAGE 109. In Art. VII., last line should read "same office for more than (three) *two* consecutive years."

PAGE 122. Fourth line from bottom, read "until within a very recent period prior to that compilation, English offices had accepted, etc."

PAGE 124. Fourth line from bottom, read "expenses" for "expense." Third line, read "premium income which showed, etc."

PAGE 125. Third line, read "can be saved on *the* new." Eighth line, read "per cent. is from the standpoint of expense alone on a, etc." Fifteenth line, read "divisible must not be entirely depleted in purchasing benefits which will not be felt fully for long years to come."

PAGE 136. Sixth line from bottom, read "Dr. G. Schartlin."

HISTORY

OF THE

FOUNDATION

OF THE

ACTUARIAL ❖ SOCIETY

OF

AMERICA.

NEW YORK:

MAY, 1889.

THE JAMES KEMPTSTER PRINT.
56 CEDAR STREET,
NEW YORK.

INTRODUCTION.

In February of 1889 it was found that five of the oldest actuaries in the United States were favorable to the formation of an Actuarial Society, and after some consultation it was determined to send the following circular letter to the Actuaries of companies in the United States and Canada :

CIRCULAR LETTER.

NEW YORK, MARCH 7TH, 1889.

.... ESQ., ACTUARY,

.... LIFE INSURANCE COMPANY.

Dear Sir : For some time past many American actuaries have desired opportunities to meet socially and discuss the various questions that present themselves from time to time, believing that such intercourse, while both pleasant and profitable to themselves would also advance the general interests of Life Insurance.

How to bring it about has been the only difficulty.

Five of the oldest members of the profession have lately concluded that it may now be practical to inaugurate an informal association, with meetings once or twice a year, and without attempting to say who should be eligible as members, it has been thought well to limit the preliminary call to those persons now actually serving as the Actuaries, or the Consulting Actuaries, of companies and making such life insurance work their primary business, as this gives a definite rule which can be followed without appearing to slight anyone, and it would otherwise be impossible to draw the line anywhere. When the gentlemen so invited meet, they can decide who shall be eligible to membership.

It has been thought well that a preliminary meeting should be held in New York city in April, in a building apart from any Life Insurance Company, and that this (to further avoid any appearance of being in the interest of any particular company) should be sent by the undersigned.

Please state at your earliest convenience whether this plan commends itself to you, and if it does, which days in April would suit your convenience. Thus far all favor the proposition.

Yours, very truly,
(Signed), D. P. FACKLER,
20 NASSAU STREET.

This circular received so many favorable responses that it was shortly followed by another, as below :

AMERICAN ACTUARIAL ASSOCIATION.

The following Actuaries have expressed themselves as in favor of the proposed Actuarial Association, with a preliminary meeting in April :

Barker, (Penn. Mutual).	McClintock, (Mutual).
Cillis, (Germania).	Marshall, W. A., (Home).
Clark, (National, Vermont).	Miller, (Mutual Benefit).
Ellis, (Travelers).	Pierson, (Washington).
Fackler, (several).	St. John, (Ætna).
Hall, (Maryland).	Sanders, (Michigan Mutual).
Hendry, (Ontario Mutual).	Standen, (United States).
Holcombe, (Phœnix).	Starr, (State Mutual).
Homans, (Provident Savings).	Stebbins, (Manhattan).
Ireland, (Massachusetts Mutual).	Weeks, (New York).
Lee, (Berkshire).	Wells, (Connecticut Mutual).
Loveland, (Northwestern).	Wing, (Provident Life).
Lunger, (Prudential).	Woodward, (John Hancock).
Macaulay, (Sun, Montreal).	Wright, (New England).
McCabe, (North American, Toronto).	(See Note.)

No one has disapproved of any part of the circular letter of March 7th, and the answers received, have, in nearly every case, been full, cordial and decidedly favorably to the Association.

Over one half said that any time in April would suit them, and the greater part of the others, particularly those whose distance demands special consideration, prefer a date after the 20th.

As the anniversary of Washington's inauguration is to be celebrated in New York on the 29th and 30th, and the hotels will be crowded for a few days prior, it has seemed better to call the meeting for the 25th, as the crowds will probably not arrive until the 27th, and those of us who wish can remain over for the anniversary. By writing the undersigned a few days beforehand, rooms will be secured as may be requested. The Astor House, now renovated, may be the most convenient hotel.

Many will come from considerable distances, at much cost and trouble, so should the 25th prove inconvenient to any, it is hoped they will consider the special importance of this meeting, which may be marred by their absence, and thus defer for many more years the formation of an Association which will serve the highest interests of Life Insurance and of the actuarial profession.

The following programme is proposed :

The members of the Association to meet on the 25th of April, at one o'clock, in the Astor House banquet hall, take lunch, and become personally acquainted.

After that, a private preliminary business meeting and appointment of committees to consider permanent organization, membership, etc.

After such business, there may be time for some scientific discussion, or the latter may be entirely postponed to the evening.

Recess.

At 6:30, dinner, followed by essays, discussions, etc., when other insurance men and reporters can be present.

By the next morning all will have had time for full reflection on the proposed basis of association, and a private business meeting of an hour or so, beginning at 10:30, will probably suffice for completing the organization.

Succeeding meetings may not need to last over a day, but it would seem wise to devote full time to the foundation of the Association.

Essays on any points of interest will be welcomed by the Association, and those who may be able to prepare such essays are requested to inform the secretary or the chairman of the meeting, so that proper opportunity may be provided for their presentation.

The New York city members of the Association tender the freedom of their offices to those from other cities, and will bear the expenses of the entertainments and meetings as above.

Please state whether you may be expected.

Very respectfully,
(Signed), D. P. FACKLER.
20 NASSAU STREET, NEW YORK, MARCH 22D, 1889.

NOTE.—Several responses came too late for inclusion above, viz, Messrs. Gould, Pacific Mutual ; Macdonald, Confederation Life, E. P. Marshall, Union Central ; Phillips, Equitable ; Smith, American.

In the following pages will be found the proceedings of the meetings held in accordance with the last circular.

MEETING

OF THE

ACTUARIAL SOCIETY OF AMERICA,

HELD AT THE

Astor House, New York City, April 25th, 1889.

After a luncheon at one o'clock, the meeting was called to order by Mr. Fackler, who moved that Mr. Homans be appointed Chairman. This was concurred with unanimously, and, on taking the chair, Mr. Homans requested that Mr. Pierson act as Secretary.

THE CHAIRMAN: We have not any printed order of business, and I presume it is now in order for any subject that may be thought of to be discussed or referred to. In the absence of any regular form, I request that Mr. Fackler make a suggestion.

MR. FACKLER: It would be interesting to read the letters of those who are absent and unable to attend for one reason or another; I suggest that it would be well to call the roll now, so as to have an official list of those who are present, and then I can account for those who are absent.

The Secretary then called the roll, to which the following named gentlemen responded: Messrs. Barker, Cillis, Ellis, Fackler, Hall, Hendry, Homans, Lee, Lunger, Macaulay, McCabe, McClintock, Macdonald, E. P. Marshall, W. A. Marshall, Miller, Pierson, Phillips, Sanders, Smith, Standen, Starr, Stebbins, Weeks, Wells, Woodward and Wright.

MR. FACKLER: In addition to the names called, I have a favorable reply to the circular from Mr. Loveland, of the Northwestern Life Insurance Company, and one from Mr. Gould, of the Pacific Mutual Life Insurance Company. The latter states that he is fully in accord with the objects of the Association, and wishes very much he could be present. He says if there is a meeting called six months hence he expects to be here. I have a letter from the Actuary of the National Life Insurance Company of Vermont saying it will be impossible for him to be present, etc. These three gentlemen were not put down as expected to be present. I have two other communications from absent gentlemen, one of whom, Mr. Wing, will be present later. Then I have this telegram from Mr. St. John, or rather from his physician, saying "Mr. St. John sends his sincere regrets," etc. That is all the correspondence I have to report.

THE CHAIRMAN: What is your pleasure in regard to these letters? Unless some expression is made they will remain on file with the Secretary. The meeting is still open for remarks.

MR. BARKER: I move they be placed on file.

Motion seconded and carried.

MR. FACKLER: Just at this time it may be proper for me to narrate how this meeting has come to be held. Within about six months previous to this time, it was ascertained that some five Actuaries were in favor of an organization or association. Two of them spoke together about it. Then one of those met another and found him in favor of it. Another from out of town called on the first of these and proposed that there should be such an association, and then the fifth, Mr. Hall, wrote to one of the latter and said: "Why can't we have an Actuarial Association." That made five persons all favorable to something of the kind. It was then concluded that it would be well to send out a circular notice, such as you all received, and, so far as I know now, not a single person was written to privately, or approached and requested to reply favorably. The answers all came substantially in from one to two weeks of the time the circulars were sent out. This certainly indicates a very general feeling that such an Association is desirable, and it is to be hoped that our proceedings here will tend to develop something that will be of advantage, and not vanish in the air like some previous insurance organizations we have heard of.

THE CHAIRMAN: Gentlemen, Mr. Fackler has stated the real objects of our meeting, which I assume to be the discnssion of the question as to whether or not we shall have an organization, or if not an organization, to what extent we shall have a unity among the members of the profession, and I suppose our time could not be better employed than for each one who may be pleased to do so, to express his opinion in regard to the proper course to be taken, and I, for one, hope that each gentleman will express his views freely, so that we may arrive at a clear judgment of what is best to be done.

MR. PIERSON: It will be well to call the roll, and let each one respond as his name is called.

THE CHAIRMAN: That is a very happy suggestion. We will call the roll, and ask each one in his turn to give his views.

MR. BARKER: Mr. Chairman and gentlemen: it is rather embarrassing to be called on first to express an opinion in regard to this Association. I am certainly in favor of something of the kind, and I think it will lead to good results. In my opinion, it would, perhaps, not be feasible to have it entirely professional. Let it take somewhat the nature of a social meeting, as we have to-day. I don't know that I can say anything that would throw any light on the subject before the meeting, except to say I think it is a desirable thing, and it will be of benefit to the insurance fraternity in general.

MR. CILLIS: Gentlemen, I have hardly had time to think of what we should do to-day. I was so much occupied within the last few weeks in regard to our centennial in this city, that my mind has hardly been in a condition to think of anything else, but, as I wrote to Mr. Fackler, I am heartily of the opinion that we ought to have such an Association; that we ought to have an opportunity to meet at certain times, at least twice a year, to make each others acquaintance and exchange our views.

MR. ELLIS: I am one of the junior members of the profession, and I should prefer to hear the views of some of the older members before expressing mine, but I think whatever opinions they might express, either Mr. Phillips or Mr. Homans, I would concur in them.

MR. HALL: Mr. Chairman, I think it is natural we should want an Association; exactly how definite or how complete a form our organization should be seems to be where the difficulty chiefly lies. After the gentlemen have got to the form of the organization, I think probably we will arrive better at a conclusion by fully discussing the different questions that are before us. Some of us, I suppose, are more in favor of having something definite, like an Institute of Actuaries, or a Society of Actuaries, similar to the association of different engineers' societies, the civil and mining engineers, and others may think that a merely social organization is the most desirable. For my own part, I should be in favor of having some definite organization, going as far as we can with our opportunities, and accomplishing anything in the way of conference that we can, and being as definitely organized as possible.

MR. HENDRY : Mr. Chairman and gentlemen, it seems to me that an organization of this kind is necessary. That is my opinion about it, and to myself and others, who have so many disadvantages in reference to the business being entirely away from from the centres of the work, and have to pick up such knowledge as we have to gain in part through our work and by reading, I think the opportunity of meeting each other this way occasionally, will be of incalculable benefit. I feel perfectly isolated, out away from the centres of our own country, and I felt very much like coming here, and I am satisfied that a very useful future is before this Association. I think we ought to get into some good form. I think an organization ought to be formed in some good shape, that in the future will bring out valuable service. So far as I am concerned myself, I would rather be a listener than a speaker, a follower instead of a leader, for the reason that I feel that that is my proper sphere. We can never be too old to learn. When a man gets too old to learn, it is time for him to die. [Laughter.]

MR. HOMANS : I think it would be more proper for me to wait until the others have expressed their opinion, but I think it must be characteristic of the letter "H" to be anxious to learn, and I hope we may never grow too old to learn. Therefore, if you will allow me, I will wait until the others have expressed their opinion.

MR. LEE : Mr. Chairman and gentlemen ; as you are all doubtless aware, in Massachusetts, within the last few years, organizations of Life Insurance Underwriters have been quite a success. Others, in other States have also been quite successful. I do not think that there ever existed quite the same feeling among the Actuaries of the country that there is among some of the Underwriters, and I don't know why an organization of Actuaries should not start off easier on that account. As for myself, as one of the younger members of the profession, I feel satisfied that it will be a good thing for me. I know I ought to come and sit still and listen, and I most certainly would derive some benefit.

MR. LUNGER : Mr. Chairman and gentlemen ; I think the fact that we are all here at this meeting is the best possible evidence that we are all heartily in favor of some organization of some kind. I think that all that now remains to be considered is the scope and intent of the Association. Personally, while I am perhaps the youngest man in the profession, I should like to see the Association thrown open to those that are interested in actuarial matters. We have a number of officers of companies that have either served as Actuaries or have acted or been interested in actuarial matters, and I, for one, should like to see them admitted to this Association, either as active or honorary members. We form a comparatively small organization. Mr. Lee has suggested a great deal of good that can come out of an organization. I know of one Life Insurance association here in this city, and I know that there is a great deal more harmonious feeling among the agents since that association was established than before. They call upon one another more frequently, and a good feeling of fellowship has been established in that association. I should like to see the same feeling obtain here, and as many brought in as we can interest and entertain.

MR. MACAULAY : Mr. Chairman and gentlemen ; like the others, I am heartily in favor of an organization of some kind. When we think of the size, of the magnitude of the Insurance business, of its importance, and of the number of interests that are interwoven about it, it is not only desirable but almost a necessity that we should have an association of this kind, and the only strange thing in connection with it is that such an organization has not been formed long ago. I think we should all put our shoulders to the wheel and make a success of it. It is desirable for two reasons : first, it enables us to meet and see each other and know each other, and this meeting to-day will do a great deal of good. It is a pleasure to think that, as Mr. Lunger has well said, it will do something to tone down the rivalry between the companies, and when the heads of companies are present there cannot in the nature of things, be such business competition as otherwise ; and besides, it is desirable to meet together and discuss affairs and matters of interest and we all can learn. None of us are to old to learn. We all can learn a great deal by an association of this kind.

MR. McCABE : Mr. Chairman and gentlemen ; I heartily concur in the views expressed by the gentlemen who have addressed the meeting on the importance of the formation of an organization of such a character as has been hinted at by some of the previous speakers. I was particularly pleased to receive from Mr. Fackler the preliminary announcement that it was on the tapis to form an organization of this description. So far as I have considered the subject, I would fall in with the views expressed by Mr. Hall, that the organization should be a professional one, and I think the more closely we follow the organization either of the Actuaries of Scotland or of the Actuaries of Great Britain, the more successful our organization is likely to be. In connection with such an organization my own opinion would be, that it would be well to have an official journal in which important papers which may be read, may appear, after being properly scrutinized by the editing committee of the Association. The best indication of the desirability of the establishment of such an organization is the unanimity with which the original announcement has been received. I think nearly every one who has been addressed on the subject has expressed himself in favor of the formation of such a body. After the gentlemen have finished speaking, as there seems to be such unanimity in favor of organizing, I would suggest that the simplest way of bringing the matter to a focus, would be to appoint a committee to formulate a constitution embodying the objects of the Association.

Mr. McClintock: Mr. Chairman, I of course agree with what everybody has said in regard to the formation of an organization. Yet it might be just as well, as Mr. McCabe has suggested, to go a little into particulars as to one's views and ideas, and, as I have thought a little on the subject since Mr. Fackler has spoken to me about it, I will say what I think as briefly as I can. In regard to a name, I didn't notice the suggestion of the name, "The American Actuarial Association" until I saw the printed bill of fare, but I must say I like it. The word "American" is necessary; the word "Actuarial" is necessary, and as to the other part of it, the word "Association" is better than any we could get. The initials come better than if we had the word "Society" instead of "Association." Inasmuch as the name has been suggested, we might just as well take it as it stands. As to the membership, we would all be connected with life insurance companies, but the membership ought not to be confined entirely to official actuaries of companies, I think. On the other hand, membership outside of the list of official actuaries should be a matter of scrutiny. There should be a committee appointed to examine any names which are proposed for membership, and to report on them, and after that report the name should be voted on by the Association, with whatever rules may be thought best in regard to the number of votes which should exclude. The classes of persons to be admitted ought to include others connected with insurance companies who have given some sign of devoting their lives to actuarial work. There are connected with

a number of companies, excellent, capable young men who have studied hard, who are really experienced and successful actuaries already. My own assistant was, until lately, the actuary of a company himself, and I think the actuaries of the companies should propose such gentlemen may be associated with them in their own companies as they would think to be desirable members, with the privilege of course, of having them passed upon by a committee and voted on by the Association the same as in other societies. Then, of course, there are gentlemen altogether outside of companies who might very properly be admitted into such a professional organization as this would be.

As to the constitution, it seems to me it would be well to begin in as simple and ordinary a way as possible. I think that while in the future we may look forward to having an institute, or something eqivalent to it, which should hold strict examinations, which should in some way afford actuarial education to young men, and which should therefore be modeled perhaps in the future somewhat on the line of the Institute of Actuaries. I think to start with, it would be better to have only one class of members, and to leave the idea of a second class of members for further development, as a matter of evolution. In the first place, let us see what we can do, those who are members. Let us see what we can develop in the way of interesting papers, and of interesting meetings, and we will no doubt make a success of it. When that success is established, I think it will be time to go into further extended development in the way of examinations, on the line of the Institute of Actuaries.

As for a journal, or, more properly speaking, an official publication of some sort, I won't undertake to say what the title ought to be. There is no question that we ought to have it. We cannot expect to do anything successfully without it. That is about the extent of my views at present.

Mr. Macdonald: My views on the subject of an association of the actuaries of this country have been fully expressed by the previous speakers. I think the large gathering which we have here to-day, and the friendly feeling which seems to prevail, indicates that the organization of such a society as proposed will be necessary, and will be productive of very great good. This is certainly an age of organization, and I do not think that there is, perhaps, any interest in the country which is as large, and which affects so many classes, and so large a portion of the community, as life insurance, and I hope some organization of the nature suggested, will be formed at this meeting to-day. I express myself as entirely in accord with the previous speakers. I was, also, very much pleased with the remarks of Mr. McClintock, and I express my entire concurrence in the views he has expressed as to the name of the Association, as to those who may be eligible for membership, and as to the manner in which the Association should vote on applications. I think we should commence simply, and in the future, when the Association has been well established, then probably we shall be able to be more strict, and probably the Association will be conducted somewhat on the line of the Institute of Actuaries of Great Britain, or of the Actuarial Association of Scotland.

Mr. Phillips: Mr. Chairman and gentlemen; I think it is very well that the members of a profession such as this should meet together and become acquainted with each other, and I have no doubt that the knowledge of each other will help them in the management of the business of the respective companies with which they are connected. There is a very strong competition between companies in which agents and other officers have become engaged, but I think actuaries should be above these little animosities, and swim on a higher level, as Mr. Macaulay, I think, said. But when it comes to run an Association, I feel that there must be somebody to do a good deal of work without much pay, and I have had so much to do myself with the management of our company, and the business of our company, that I felt I was not able to give much time to such work, but if there are persons who will start the organization I should be very glad to lend a helping hand in some way to help it along. With some self-sacrifice on the part of those who are not quite so busily occupied as some others, I think this Association may be made a success. I will try to do a little at least, and more if I can, to help.

Mr. E. P. Marshall: I received Mr. Fackler's letter, and thought it would be impossible for me to be present, and I believe so wrote him, but on considering the matter further I felt very much inclined indeed to attend this preliminary meeting, and I am very glad that I was able to arrange my affairs so that I am here to-day. I can only say that I am heartily in accord with all that has been said about the objects of this Association. Indeed, I think I have shown my interest in it by coming so far. I can see a great deal of benefit that can be derived by the different members of this profession by having an Association of this kind,

and I hope it will be carried out, and that we may have in time an Association which we will all be very proud of, and which will be of a very great benefit to us, and I am sure it will.

Mr. W. A. Marshall: Mr. Chairman, I don't know that I can say anything more than what Mr. McClintock has said. What I might say would be a repetition of his views. I would rather listen to some of the older members, and come in on the practical part.

Mr. Miller: I can only say that I am in entire accord with everyone at least, as to the name of the Association. The suggestions which Mr. McClintock has thrown out appear to my mind as exactly right, so far as they go. I don't see anything that could be suggested in the way of an alteration which could possibly improve upon them. I would suggest, merely for the purpose of forwarding the matter and forwarding discussion, that we first of all resolve ourselves, after the discussion is over, into the Actuarial Association of America; that we appoint as few officers as are necessary to conduct the meeting, etc. We will, of course, want a President, perhaps two or three Vice-Presidents, so as to be sure of presiding officers, a Recording Secretary, a Corresponding Secretary, a committee to manage details of meetings, a Council—or an Executive Committee, whatever it may be called—and it seems to me that when we get as far as that it would be well to stop and leave everything else open to future evolution. If we do any more than come together with such an organization once or twice a year, it having been arranged by the Corresponding Secretary and by the Committee that certain members of the Association shall read one, two, three or more papers upon interesting subjects, and then that everyone is to be called on in turn to express his views on such papers, and afterwards it could be arranged to put those papers and discussions into print for our use, and perhaps more general circulation, I think it would accomplish a great deal that would certainly be of great interest to us all and of great profit.

Mr. Sanders: Mr. Chairman, I want to say that I am entirely in accord with what has been said. It seems to me that we all want an organization of some kind. There will be a little difficulty in determining what kind of an organization we want. I think the best way to arrive at that would be to appoint a committee for the purpose of arranging a plan of organization. It could then be criticised and changed so as to harmonize with the views of all.

Mr. Smith: Mr. Chairman, I think there should be an organization of the Actuaries of America. I remember a former movement of this kind, and ever since that I have been in favor of it. I think it is a wise thing to do, and a matter which is to the best interest of us all. We can learn from one another. We should not move too fast. Evolution, if I can use the term, will bring about the results which seem to be the most desirable in time. While we must not proceed too rapidly, neither should we proceed too slowly, and I am consequently in favor of organizing, appointing officers and committees, to see about the establishment of a journal, etc. I am very certain that the gentlemen present will do much to forward this movement. I believe there is no man in this room but what is in hearty sympathy with it, and will do all he can to aid in its advancement. As I said before, I am in hearty sympathy with the views which have already been expressed, and particularly interested in what Mr. McClintock has said, that each of us can contribute a little. There is another thing. We come together and we meet each other, we exchange our views. Every man has his own peculiar notions, his own peculiar views, and the suggestions from one to another must be of benefit and will be very valuable.

Mr. Standen: Mr. Chairman and gentlemen; Mr. Smith has just remarked, better than I can, the very pleasant prospects we have in view, and I think one of the greatest benefits and greatest pleasures that can result from an organization such as we propose, is that we who have known each other by name and reputation will come into intimate association. We will get each other's ideas. We will communicate ideas to each other. and we will all be improved by contact with each other. It has seemed strange to me, for a long time past, that the actuaries of this country have let the agents get ahead of them. I think we have more use for an organization than the agents have, and it is still more strange when I remember that it is many years ago that Mr. Fackler spoke to me about an organization of precisely the character we propose to have now, and of course I am very glad that there seems to be some prospect now of going ahead and putting it in a shape in which it can be handled. It will be a little difficult, of course, at first to form such an organization, and I think there may be danger of making it too restricted. I have in mind the Actuaries of the Insurance Departments, and I know of some of those who will be able to give us some valuable ideas, and it has occurred to me in thinking of that, that as

there has always been more or less friction between the Actuaries of the Companies and the Actuaries who have most to do with Insurance Departments, and the making up of their rules and regulations, that this Association will make intercourse in the future simple and more easy for all of us, and therefore, in anything looking to the restriction of membership, I hope we will keep this point in view.

Mr. Starr: Mr. Chairman and gentlemen; I shall not offer any extended argument, but simply say that I am pleased to be here, and that I am in hearty sympathy with the object of this gathering. I think it is desirable that such an Association as is contemplated, should be formed. I think it should be professional. I think the name which has seemed to grow up naturally is good enough, and is as good as we can get.

Mr. Stebbins: Mr. Chairman, I don't know that I have anything to add to what has already been said. I have only this to say, that while I am in accord with everything that has been said, I do not think any of us have the slightest conception of what can be accomplished by this Association in the future. We can begin, and the door will be opened in every way in which we can make progress in the profession. I am very glad that the preliminaries for an association have been started. I think that some fifteen years ago something of the sort was commenced. I think our respected Chairman had something to do with it at that time, but nothing came of it. Now, I hope we shall form an Association that will be of benefit to ourselves and to the profession.

Mr. Weeks: Mr. Chairman, I have felt for some years, and I suppose every actuary has, that the time would come in the business of this country when a professional and scientific association of actuaries would be formed. I am heartily in accord with everything that has been said on the subject of forming an Association, and I think it will be of great benefit to us all.

Mr. Wells: Mr. Chairman, you can scarcely expect me to say anything new. I anticipate a great deal of pleasure in the acquaintance of the actuaries of this country, and those engaged in like work, and a great deal of benefit from the suggestions that will emanate from each other. What I know about the business, I have learned since I have been connected with my Company, and from reading, but there is nothing like contact with living men to teach a man some things. As regards the form of the organization, I am in favor of some such form as

Mr. McClintock has suggested. As regards the name, if I should make any suggestion, I should have changed the words a little and make it "The Association of American Actuaries." We should have, I suppose, in addition to officers, a simple set of rules of some kind in the form of a Constitution, defining the membership, the duties of officers, times of meetings, etc. As regards membership, I suppose we shall all agree that it should be personal rather than official. That is to say, we are not here as representing the companies in which we are employed, but as men engaged in like occupation and having common interests, and the membership should not be limited to actuaries of the companies, but should be limited to those who are engaged in some sort of actuarial work, and applications for membership should be scanned with some care. There are men whom we do not want. There are a great many men whom we do want. We do not want any knaves or fools, and there are plenty of both in the world. I do not want to be misunderstood. You know what I mean. At the same time I would make the membership somewhat broad, including any man of good common-sense and fair education, any honest man who is engaged in actuarial work, or interested in such work. I should hardly have dared to suggest a journal to begin with. I should rather have been inclined to leave that to be one of the things to be evolved later in the natural course of things.

Mr. Woodward: Mr. Chairman, I am very much in favor of an organization, but now that we have gone from A to W, I don't think I can add anything to what the gentlemen have said.

Mr. Wright; Mr. Chairman, while I am, professionally, one of the oldest among you, I feel very young. I shall never become too old to learn and if ~~you~~ give immortality I am sure that will and I have come to the meeting on that account. I presume the object of this association is to bring us in contact with each other, to see each other face to face and learn from each other. I can only, like many of the others, express these words of sympathy with the proposed Association, because, like those who have spoken on the form of organization, I agree with them that it should be entirely personal and not official. It should include in its membership those who are professionally engaged, and who are interested in that department of thought.

Mr. Fackler: I suggest that the Secretary express his views.

Mr. Pierson: Mr. Chairman and gentlemen; you probably have seen articles on composite photography, notably one

article I think in Scribner's, perhaps a year ago. There was an illustration of a young ladies' college class of forty or fifty taken together, giving the typical representation of their faces, and so with a class of Amherst students. I don't know what sort of a photograph this Actuarial Association would make composite, but if we could have a composite photograph of the views which have been expressed this afternoon, it seems to me we would have just the plan we need for organization, and just the objects of the Association clearly expressed. I am in hearty sympathy with all that has been said, and believe that a great deal can be accomplished by this Association for ourselves, and for the science of life insurance.

The Chairman: Gentlemen, we have a valuable concensus of opinion, and we seem to be quite unanimous that some sort of an organization is desirable. In my judgment we must be very careful as to the nature and scope of that organization. The success of the Institute of Actuaries of London is largely owing to the fact that they have left out what may be called politics. Any reader of the Journal of the Institute must be struck with the absence of any criticism of individual companies or individual plans of business, and I think therein lies the secret of their success and of their usefulness. But England is somewhat different from this country. The English actuaries, as a general rule, are rather more executive than professional. In this country it is different. There are very few actuaries who are at the same time executive officers of companies, and there is a feeling more or less well founded on the part of leading officers, and leading companies, that there is danger of what may be called politics, in the organization of an Institute of Actuaries in this country. Therefore, while I heartily agree with the sentiment which seems to be unanimous, that some sort of an organization is necessary and desirable, yet I want to emphasize the fact, which has been stated by more than one of the preceding speakers, that the greater the simplicity the better. We want to draw the line sharply between ourselves as business men and ourselves as individual members of a profession where there is much to learn, for we are on the threshold, as it were, of the science of life insurance, and our object should be the general good, and the avoidance of anything that looks like a criticism of individual companies or individual plans. I think a large measure of good could be accomplished in an association. We have never met as a body before. There have been attempts before this to organize an Institute of Actuaries, but they have always amounted to nothing. There was the Chamber of Life Insurance that was something of the kind, which fell through because "politics" were introduced.

Now, I believe that if we could have an association where we could meet socially once a month or bi-monthly, and talk over informally matters of scientific interest and of general interest, that we could not only improve our own knowledge and raise the standard of the profession, but be of great benefit to life insurance generally. There is no profession in this country where a room like this could hold all its members, and yet it is well recognized as a profession, and in England they have gone so far as to organize under an Act of Parliament, by which no one can enter that profession unless he has passed an examination precisely in that respect like the medical or legal profession. We can hardly hope to go that far. But we have here to-day a meeting of by far a large majority of gentlemen who call themselves actuaries. Those who are not here could be numbered on the fingers of one hand, and we have expressed ourselves with unanimity that an organization of some kind is desirable. That is the first point that it is important to have established. The next step is to exercise good judgment to get such an organization as will promote fellow feeling, improve the system of life insurance, and yet avoid anything which would even have the appearance of evil in the way of "politics," for you may rest assured that if anything emanates from a body of this kind which looks like criticizing individual companies we will have hostility. Now, there is no occasion to incur that hostility. Let us see if we can organize an Institute which will be free from those objections, which will have the advantages that have been pointed out. I suggest the next business in order would be the appointment of a Committee, which has already been suggested, who should report perhaps at a meeting later in the day, the plan and scope of the organization.

Mr. Smith: I move that a Committee of Five be appointed by the Chair to consider the plan and scope of an Institute of Actuaries, and report at the meeting this evening or to-morrow morning, as may be most convenient to them, and of which five the Chair shall be one.

Motion seconded.

Mr. Fackler: I think some such motion as that should be put certainly in a very short time, if not just at this moment.

I am inclined to think, however, that possibly something else had better precede it. I have been listening most attentively to the remarks that have been made by the gentlemen present, and I am glad to see there is so much harmony among them, and particularly I would endorse the remarks made by the Chair. I most heartily second his remark with regard to the necessity of avoiding questions that might cause division of feeling, because that might make this Association seem to be a body that was going to try to regulate the general business of life insurance. As the Chair remarked, the actuarial profession of Great Britain is composed most largely of men who are connected with active business, and if they have been able to associate together for thirty or forty years without breaking up through factious discussions, it seems very clear that we who have in general so little to do with the active competition of business will be able to coalesce much more readily even if they had any difficulty. I never heard that they had any difficulty.

It would seem as though we might expect to find in other organizations the general lines on which we could crystalize, so to speak; not that we can exactly follow their constitution, for many reasons; but one of the most important points of any organization is its official constitution, that is, the making up of the officers. The election of certain men to positions of office carries with it certain duties, as is understood. When we have once elected officers, we have practically formed the Association, and then the making of rules becomes a matter that would be settled in a comparatively short time. It has occurred to me that possibly it might be best for us to decide first what the official constitution of the body shall be, and then refer to such a committee, as Mr. Smith has suggested, such questions as membership, and a general Constitution and By-Laws.

The English Institute of Actuaries, as you know, has a president, several vice-presidents, and a council, answering to what we would call an executive committee, and the gentleman before me, Mr. Miller, has suggested that we might do well to follow on those lines. We also need a Secretary. Mr. Miller, I believe, spoke of two. I don't know that we have work enough for two. I hope we shall have a Treasurer, because very few organizations will hold together without a Treasury, and I should think there was not work enough for a separate official Treasurer. We might combine the office of Secretary and Treasurer together. We should have a President, two Vice-Presidents, one of them to hold for two years, and the other for one, and then have one elected each year, and then we would be sure of always having some presiding officers. I mention the President, two Vice-Presidents, Secretary-Treasurer — that makes four, and then four more members of a Council or Executive Committee, would constitute, altogether, with the officers, eight, a sufficiently large proportion of the present organization to make its action on any subject quite acceptable to the entire body, and would probably express the voice of the majority of the members. As it might be difficult for us to arrive at any satisfactory conclusion on the motion as it is in Mr. Smith's resolution, I have thought it would be better to proceed first to the election of officers, letting it be understood that these officers shall have the ordinary duties pertaining to such offices, except as they may be afterward defined or limited by the Constitution and By-Laws that may be hereafter adopted.

THE CHAIRMAN: While this question is under discussion, I would like to request Mr. Smith, the mover, to omit the name of the Chairman from that Committee, for the reason that if I name the Committee it will be with some regard to geographical locality, and I think Mr. Fackler, who has done so much towards bringing this assemblage together, should be a member of that Committee, and if the Chairman be on it, the Committee would contain two members from one city.

MR. SMITH: Let me suggest, as the Chairman is one of the oldest members of the profession in this country, it would be exceedingly desirable for him to be on that Committee as ex-officio in addition to the five. I am sure that I voice the sentiments of the gentlemen present when I make that suggestion. [Applause.]

THE CHAIRMAN: I have to confess to the soft impeachment as to age. [Laughter.]

MR. WRIGHT: It strikes me that the difficulty you spoke of yourself, would be best remedied, and it would not make the Committee too large, for the Executive Committee to consist of seven, if Mr. Smith will accept that amendment.

MR. SMITH: I accept the amendment.

MR. MCCABE: Perhaps as one from Canada, I should suggest that the idea of geographical distribution should be dropped altogether. I think what we want in this Committee is ability and experience to draw a proper Constitution. It should be made up of the best men.

THE CHAIRMAN: Am I to understand the amendment is accepted?

MR. SMITH: Yes, sir.

THE CHAIRMAN: Remarks are still in order.

MR. STANDEN: I think Mr. Fackler's remarks and suggestions as to what should precede the work of such a Committee are excellent, and I think if we adopt them they will greatly facilitate the work that is before us.

THE CHAIRMAN: The duty of appointing such a Committee is both easy and difficult. It is easy, because almost every one of us has had sufficient experience in the business to make him a competent adviser on this question, and yet it is difficult to make the selection. I should be guided somewhat by the geographical locality, for I think all sections ought to be represented. If you are ready for the question I will put it. The resolution is to appoint a Committee of Seven to report at an adjournment of this meeting, either this evening or to-morrow morning, upon the questions of the proper scope and organization of this body.

MR. FACKLER: I desire to withdraw any implied opposition to the motion on my part.

THE CHAIRMAN: There was no opposition understood at all.

Question was then put and carried.

The Chairman then announced the Committee as follows: Messrs. Fackler, McCabe, McClintock, Miller, Wright, Wells, and the Chairman, Homans.

THE CHAIRMAN: What is your further pleasure?

MR. WELLS: If there is no matter before the meeting, I move that a Committee of six be appointed to nominate officers. It may not be possible for them to nominate in advance of instructions as to what officers they shall nominate. If it be thought best, it might be a saving of time to appoint a Committee to consider nominations. It would be a question of what offices you have to fill, I suppose.

Motion seconded by Mr. Miller.

MR. WELLS: I will modify my motion and make it that the Committee be appointed by the Chair.

Motion seconded and carried.

The Chairman then named the following gentlemen as that Committee: Messrs. Barker, Hall, Weeks, Woodward, Ireland, and Smith.

MR. HALL: I heard the Committee announced with my name upon it, and I rise to ask for instructions whether this

Committee just appointed can act before the organization of the Association, because we have not yet heard how many offices should be provided for. Unless a general resolution is adopted, providing for officers and for members of Council or Executive Committee, the question is: have the Committe any right to act?

THE CHAIRMAN: Perhaps the mover of the resolution will define his intention which, as I understood, was to be left to the Committee, as to how many and what officers should be suggested. I put my inquiry in the form of a motion for the purpose of bringing it before the Committee, and to get the sense of the meeting, that the officers of the Association consist of President, two Vice-Presidents, and Secretary-Treasurer, and four members of Council.

Motion seconded.

A MEMBER: I would ask the mover of that resolution if he will accept an amendment to have five members, so as to have nine in the Council?

THE CHAIRMAN: The resolution before us is that the Committee whose duty it is to nominate officers, should consider nominations for President, two Vice-Presidents, Secretary and Treasurer, and five members of Council.

MR. HALL: Secretary-Treasurer?

THE CHAIRMAN: One person should hold the office of Secretary and Treasurer. The motion is duly seconded. Are you ready for the question?

MR. MILLER: I was only going to suggest that it seems to me, in order to distribute the labors of the Secretary, it would be well to divide those duties. It will be no light task to keep proper notes of the meetings, and also to attend to his duties as Treasurer, and I think it would help things very much to have, as I suggested some time ago, a Corresponding Secretary, who should take charge of the intermediate work. I don't think it is fair to call the Secretary up before every meeting and make him do all the work in the interim besides.

THE CHAIRMAN: Do you accept that amendment?

MR. HALL: It seems to me like an undue multiplication of officers. It seems to me we should hardly have use for two Secretaries.

THE CHAIRMAN: The amendment is not accepted. Is the motion that Mr. Miller made, seconded?

A MEMBER: I second it. I think we are asking too much of

one Secretary to take care of the minutes of meetings and do all the correspondence. For that reason I think Mr. Miller's motion should prevail.

THE CHAIRMAN: I will put the question on the amendment which is, that among the officers shall be a Secretary-Treasurer and a Corresponding Secretary also.

The motion as amended was carried.

THE CHAIRMAN: Are you ready for the original question, that the officers of this Association shall be a President, two Vice-Presidents, a Secretary-Treasurer, a Corresponding Secretary and five members of Council.

MR. MCCLINTOCK: Suppose we separate the Secretary and Treasurer, that would make eleven, and if Mr. Hall accepts that amendment, we will have an odd number again.

MR. HALL: There are twenty-nine gentlemen I believe, in this room, and there is hardly room for us all to be officers.

MR. MCCLINTOCK: Or else reduce the number of the Council.

MR. LUNGER: I suggest that we consider very carefully the position of Secretary. I think we ought to have a Corresponding and Recording Secretary, because I think the Association will grow, and I think the office of Corresponding Secretary will be an important one. Another thought, and that is, while we are very few in number, still it looks well when the papers come out the next day to have a good list of officers, and I urge that we ought to have a Corresponding and Recording Secretary and a Treasurer.

THE CHAIRMAN: The question is on the amendment. It is that the position of Secretary-Treasurer shall be divided, and among the officers elected shall be a Recording Secretary and a Treasurer. That motion having been duly seconded, unless there are further remarks, I will put the question.

About the same number of ayes and nays responding, the Chairman called for a rising vote, and the amendment was carried.

THE CHAIRMAN: The next question is in regard to the original motion, as amended.

A MEMBER: I move the original number of the Council be three instead of five.

Motion seconded.

MR. MCCLINTOCK: There is just one objection occurs to me. A large portion of the officers of this Association may reside outside of the city of New York, and there should be enough members of the Council to form a quorum who could meet here, and for that reason it seems to me it would not be desirable to limit the number of the Council to too small a number. I think eleven is better than nine.

THE CHAIRMAN: It is very easily disposed of by a vote, and I think, on the whole, it would be better to put the question, and the motion is to reduce the number of the Council to three instead of five.

The question was then put and the amendment lost.

THE CHAIRMAN: The original motion, with whatever amendments have been agreed upon, is before you. All in favor of the officers being as designated, will say aye.

Unanimously carried.

A MEMBER: I move that we adjourn until later in the afternoon to give the Committees appointed time to discuss the matters that are before them.

MR. BARKER: Before this motion is put, I would like to express my gratitude and thanks to our Organizing Secretary, Mr. Fackler, for the trouble and care which he has taken in bringing us together. I think a vote of thanks would not be out of place, and I think the thanks of the Association are due, not only to Mr. Fackler, but to the Chairman and Secretary of this meeting, for their kindness and courtesy to the members. I make a motion that the Association present a vote of thanks to them.

Motion seconded and carried.

THE CHAIRMAN: I convey to Mr. Fackler and to the Secretary the effect of the motion, and I hope you will imagine it is done with all fullness.

A MEMBER: I move that the Secretary convey to the Chairman the vote of thanks.

Motion seconded and carried.

MR. MCCLINTOCK: It seems to me we ought to have a good rousing speech from Mr. Fackler. He has done this thing himself, every particle of it. It is his own devising, and we owe him the vote of thanks we have given, and we ought to have a good speech from him. [Applause.]

MR. FACKLER: Some of you know that I have not the divine gift of oratory. I feel most thoroughly compensated for any trouble I may have had, in the sight which is before me, and I accept, with hearty appreciation, your expression of commendation for what I have done. [Applause.]

MR. PIERSON: Is there any probability that the Special Committee on Organization will be ready to report before six or half-past six o'clock? If not, I move that when we do adjourn we adjourn until half-past six at this place.

THE CHAIRMAN: Before putting that motion I would suggest that the two Committees hold a meeting immediately after the adjournment of this meeting.

Motion seconded and carried.

The meeting then adjourned until 6.30 P. M.

A dinner session was held at seven P. M., during which several responses to toasts and impromtu addresses were delivered,—a fuller account of which is given further on—and the company then adjourned to meet next morning, April 26th at 10.30.

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FRIDAY MORNING, APRIL 26th, 1889.

The members of the Association met at 10.30, pursuant to adjournment.

On motion, the reading of the minutes of the previous meeting was dispensed with.

THE CHAIRMAN: The first business in order will be the report of Committees. The Committee on Organization will please report.

MR. FACKLER, as Chairman of the Committee, then read a draft of the Constitution, as prepared by the Committee, which after being amended, was adopted, by sections, as follows:

ACTUARIAL SOCIETY OF AMERICA.

CONSTITUTION.

ARTICLE I. This organization shall be called The Actuarial Society of America.

ART. II. Object. The Actuarial Society of America has for its object the promotion of actuarial science by personal intercourse, presentation of appropriate papers, discussion, and such other methods as may be found desirable.

ART. III. Membership. The membership of the society shall consist of the subscribers and of such other persons, connected with actuarial pursuits, as shall be duly elected.

ART. IV. Officers. The officers shall consist of a president, a first and a second vice-president, a recording secretary, a corresponding secretary and a treasurer.

ART. V. Council. The officers and five other members shall constitute the council.

ART. VI. Duties of officers and council. The duties of the officers shall be such as usually appertain to their respective offices. The duties of the council shall be in general to manage the affairs of the society in the intervals between its meetings, to call meetings and to make arrangements for the same, to decide upon papers offered for reading and discussion, and to pass upon candidates to be presented to the society for election.

ART. VII. Election of officers and council. The officers and members of the council shall be elected by ballot at the annual meeting for the term of one year. The president and vice-presidents shall not be eligible for the same office for more than three consecutive years.

ART. VIII. Meetings. The annual meetings of the society shall be held on the last Thursday of April in each successive year. Other meetings may be called by the council from time to time, and shall be called by the president at any time upon the written request of ten members, twenty days notice of such meetings shall be given by the corresponding secretary.

ART. IX. Election of members. All candidates for membership shall be nominated to the council by at least two members. The name of any candidate whieh shall be voted against by two members of the council shall be considered as withdrawn. Each member of the council shall be informed by the secretary of the names of candidates at least ten days before action. Candidates recommended by the council shall be ballotted for by the members at the next meeting. Any candidate receiving three-fourths of the votes cast shall be declared elected.

ART. X. Quorum. Four members of the council shall constitute a quorum. Ten members of the society at any duly called meeting shall constitute a quorum.

ART. XI. Dues. Each member shall pay ten dollars upon entrance, and a like amount at each annual meeting thereafter.

ART. XII. No resolution expressive of opinion shall be entertained at any meeting.

ART. XIII. Amendments. This constitution may be amended by an affirmative vote of two-thirds of the members present at any meeting held at least three months after notice of such proposed amendment shall have been sent to each member by the corresponding secretary.

The Committee on Nominations then reported, and the following ticket was unanimously elected:

President: - - - SHEPPARD HOMANS.
1st Vice-President: - - DAVID PARKS FACKLER.
2d Vice-President: - - HOWELL W. ST. JOHN.
Recording Secretary: - ISRAEL C. PIERSON.
Corresponding Secretary: - WM. T. STANDEN.
Treasurer: - - - BLOOMFIELD J. MILLER.

Other Members of the Council:

OSCAR B. IRELAND, GEORGE W. PHILLIPS,
WILLIAM MCCABE, HENRY W. SMITH,
EMORY MCCLINTOCK.

The members then signed the Constitution.

Mr. Hendry, seconded by Mr. Smith and Mr. Hall moved a vote of thanks to the New York City members for the hospitality which they had so generously manifested.

The motion being adopted, Mr. Fackler and Mr. Homans made responses on behalf of the New York members.

The meeting then adjourned *sine die* at one P. M.

ACCOUNT OF THE DINNER

OF THE

ACTUARIAL SOCIETY OF AMERICA,

AT THE

Astor House, April 25th, at 7 P.M.

The *Menu* was varied and served in the style for which the Astor House is reputed. Some of the dishes were specially named for the occasion, for example, "*Filet de Bœuf a l'Actuaire*," "*Ice Cream a la Tontine*," "*Premium Cakes*," "*Fruit Reserves*," and "*Coffee not on the Contribution Plan.*"

The company was arranged in such a manner as to place the New York City actuaries—the hosts of the evening—at every every third chair.

The duties of toast-master were assigned to Mr. Fackler, and as soon as the solid parts of the entertainment were disposed of he announced the *first toast:*

"THE TIME-TRIED SYSTEM OF LIFE INSURANCE, sound in principle and correct in practice; may it last until Death is no more," and called on Mr. Homans and Mr. Wright to respond in turn.

RESPONSE OF SHEPPARD HOMANS.

Gentlemen: You have given me rather a difficult toast to respond to, "The time-tried system of life insurance; sound in principle and correct in practice." I suppose the first thing to do is to define what is sound in principle and correct in practice.

All sound systems of Life Insurance depend upon the mortality table, and, therefore, we may define a system as being sound in principle which accords fully with its teachings, and, I would say on general principles, that that system is sound in principle in which provision is made to cover the cost of insurance based upon the actual present age of the individual and the net amount at risk, regardless of the age at issue or form of policy contract.

As to being correct in practice, that would involve, of course, the collection of a premium margin sufficient to guard against adverse contingencies, and to provide for the expenses of conducting the business; therefore, the system which is sound in principle and correct in practice is the one whereby the mortality charge is made according to the actual age and net amount at risk, no matter what may be the form of policy or term of insurance, and which has a margin sufficient to provide for the contingencies natural to the business, and for legitimate expenses. In other words, no system can be sound in principle and correct in practice which does not conform to those cardinal rules; hence I say, although in that respect I may be trenching on "politics," that no assessment system can ever be sound or permanent in which the assessments do not increase with the age of the individual whose life is insured, and that we all know is the exception rather than the rule.

But it would ill become me to talk of sound principles and correct practice to gentlemen who have had the experience that you have all had, and I think I may speak more profitably, perhaps, of the basis of life insurance—the mortality table.

When I first entered life insurance, American companies were dependent on foreign tables entirely. We had no statistics of American mortality, and one of the first duties with which I charged myself was to collect the data in the Mutual Life, and see how the results accorded with the tables upon which our business was based. The table used by the Mutual Life was not exactly a foreign table, but was constructed by Professor Gill, and based on the Carlisle and Actuaries' Tables. He drew with a free pencil a curve showing for each age the number out of which one person would die, and on that hypothetical basis constructed certain rates of premiums, and those rates were adopted by the Mutual Life. He commenced the collation of statistics of mortality, and made two reports before he died, in the year 1855, and when I became connected with that company I had nothing to do but to follow the ine which he had so well defined.

I not only took the numbers exposed at each age and compared them with the deaths, but I divided these data according to geographical districts and also according to kinds of policies. At that time, when we were in the infancy of the business, it was the practice of the Mutual Life, when a man was not quite up to the standard as regards family history or personal health, to refuse a whole life policy, but to offer, on the recommendation of the medical examiner, a short term policy, on the theory that he would be good for a few years but not for the average of life. I soon found that the mortality on short term policies was in excess of the average, being in round numbers double the rates on whole life policies.

In 1855, endowment insurance had just been introduced. In separating the experience of endowment policies from those for whole life or short term plans, I found the mortality on the endowments was one-half what it was on the whole life, and on the latter it was again only one half the rate on the short terms. That might have been an accident, or at any rate might be peculiar to the Mutual Life; but when my friend Mr. Miller got out his experience, and others got out the experience of their companies, I found that peculiarity was maintained and that there was a manifest and marked difference in the rates of mortality among the holders of different kinds of policies.

I reasoned with myself as to the causes, and I came to the conclusion

that if men were left to their own judgment and inclinations they would by instinct, not necessarily by any process of reasoning, select that form of policy which which was best suited to their own individual interests: that those who had some reason to believe that they would die sooner than the law of nature would indicate would naturally select the short term policy; that those who had no reason to believe they would die sooner or later than nature allowed, would naturally select a whole life; while those who had reason to believe they would live to enjoy the benefit, selected the endowment.

I also found, very much to my gratification, in comparing the rates of mortality in this country with the rates of mortality in Great Britain, as shown by the Actuaries' Table, and still more by the Carlisle Table, that the rates at the middle ages, were far less in America than in Great Britain; although the rates at younger ages and older ages were greater; I accounted for those peculiarities on these grounds: we live faster; we burn the candle at both ends: young people are apt to die more rapidly here than in a more settled and conservative community, and the same would hold good with men in advanced years. Our energetic way of living would carry men in the middle period of life over periods when, in a more staid community, they would succumb to influences prejudicial to health. I believe these peculiarities have been found to exist in all later experiences.

I also collated the experience with regard to geographical districts. I followed the plan laid down by Mr. Gill, of dividing the United States into six territorial districts. The first was the New England and Middle States; the second, the Western States; the third, the Southern States on the Atlantic seaboard; the fourth, the Southern States on the Gulf; the fifth was California; and the sixth were those which could not properly be included in either one of the other divisions. I found a marked difference in respect to mortality in different localities; but I find from later experiences that those differences are fading away. In the West, in early days, through the want of proper sewerage, and want of water supply, the rate of mortality was greater. In the South, I think, there is a marked improvement. In California, of course, the differences are very marked.

The result was that after I had collated the experience of the Mutual Life, I drew a curve representing the approximate rates of mortality at different ages; and then found, by a simple method of adjustment, the rates of mortality now called "The American Experience Table"—a name, however, that was not given by me. The table has for its basis the experience of the Mutual Life; but it is not an accurate representation of the experience of that individual company. In other words, it is not intended to be, and never was claimed to be an accurate interpretation of the experience of the Mutual Life. I take it that no mortality table, however correct it may be as an exponent of the mortality of the past, will necessarily be a correct exponent of the mortality in the future; it may be a close approximation, and that is all we want. We want, in the first place, a table which will be safe. The American table is safe, because it is based on the mortality of lives where the experience in the first five years is eliminated; that is, the effect of recent medical selection is eliminated. It was more of a happy accident, or a happy thought, than anything else, that I made the termination of that table the age of ninety-six. In all the records of experience in different countries—Great Britain, France, Germany and this country—there is no record of any individual attaining the age of one hundred years being insured. There are instances of annuitants attaining the age of one hundred, but they are very rare. The American table was gotten out simply as a study. It was not claimed to have the authority or claim to the confidence that would justly obtain in an experience like that of "Actuaries," or better, the "H. M." table; and it was never intended by me to be offered as a standard of valuation, or as a basis for the transactions of a company; that was first suggested by some one else. The idea originated, I think, through Mr. Barnes. At that time, about 1859 or 1860, there was a desire to harmonize the laws of Massachusetts and New York with respect to the basis of valuation. New York had adopted the English Life Table, No. 3, by Dr. Farr, with five per cent. interest, as a basis of valuations; while Massachusetts had then, as uow, the old "Actuaries" table and four per cent. There was a desire manifested to have the same tables adopted as the standard of value in both the States, and Mr. Barnes, then Superintendent, went to see Mr. Wright, who was the then Insurance Commissioner of Massachusetts, with the view of seeing whether they could harmonize on some one table; and Mr. Barnes invited me to go with him, which I did. The Commissioner of Massachusetts thought, and perhaps justly, that the "Actuaries" four per cent. was a satisfactory basis, and declined to alter his standard. Mr. Barnes, for some reason adopted the American Table and four and a half per cent., finding that he could not induce the Massachusetts Commissioner to unite on any one table, excepting the one which he had adopted; that was the origin of its adoption by the New York department.

I think that it is a mistake to continue the "Actuaries" table, for that is discarded in England. The "H. M." table is a far better basis. The differences, however, in the three tables are very insignificant. It is astonishing to find, at any particular age, how nearly the rates of mortality coincide. Either table is not only a safe guide as a basis of valuation, but either, I think, would be satisfactory. As I said before, the American table not having been urged, or even suggested by myself, I had nothing to do with its adoption; but I must say that, perhaps through a happy accident, it certainly does represent the laws governing the mortality among American insured lives better than the Actuaries' Table.

I think we have given too much importance to the methods of net valuation. It is not a test of solvency. We have come to the idea generally that the net system of valuation is a final test of solvency. It is not so. A company may be deficient in the net legal reserve, and yet be on the sure road to prosperity. On the other hand, a company may show a full net reserve and yet have the unmistakable signs and evidences of decay. It is in no sense of the word a final test of solvency. Its value, in my judgment, lies in the fact that it shows how the component parts of a premium should be distinguished and treated. By it alone can we prove that the fundamental conditions of the contract have been carried out. It shows that the reserve or deposit element should be laid aside to meet the investment contract. It shows the proper distinction between the mortality element and the expense element in the premium. But, I think, the time is coming when something more than a net valuation should be resorted to as a measure of last resort before condemning a company that may be deficient in a net reserve and ordering it to be wound up.

Mr. H. W. Smith: What method would you suggest in such a contingency?

Mr. Homans: The method of gross valuation, undoubtedly. The danger is in not laying aside sufficient for expenses and contingencies; but in England, I think—I may be mistaken there—a net valuation was never resorted to as a test of solvency.

However, I am taking up more time than I intended; and I want to express the pleasure I have in meeting my confreres in the profession. This has been an agreeable surprise, for I had no idea the efforts of Mr. Fackler, and it is to him, gentlemen, that this meeting is due—I had no idea that they would result in bringing together so many of the profession; and I look upon it as a happy augury of the future benefit to be derived from personal intercourse and from the exchange of views in regard to the science of the profession which we represent.

Response of Walter C. Wright.

My friends, I cast about, in my mind, a trifle to find out why I was selected as co-respondent to this toast, and considering that this is a gathering both for business and for pleasure, looking at it from a humorous point of view, it may possibly be that you desired to follow the other courses with a little "quail on toast," knowing my infirmity as a speaker.

But, possibly, I think, our New York hosts, feeling rich in the multiplicity of their sky-reaching roofs, and counting their figures in so much larger millions than we in Massachusetts, gave this response to a Massachusetts man, remembering one feather which at least the Massachusetts companies can claim, that, excepting some experiments in the assessment line, no Massachusetts company has ever failed, so, perhaps, a Massachusetts man can say a word about "the time-tried system of life insurance." [Applause.] But, of course, he must only say a few words, as you have selected one of your best men to work off the meat and leave me the bones. [Laughter and Applause.]

There is, perhaps, an aspect of the case that may be put a little differently from what he put it. The time-tried system of life insurance, I might suggest, is the system of life insurance conducted by the golden rule, or mathematically expressed, the rule of three, as applied to the specific conditions of the business.

Mr. Homans told you that the law of mortality must be respected, and in all transactions the proper proportion between cost and provision for cost must be prudently carried out. The "time-tried system," as he also remarked plainly, is not the assessment system, nor is it the misnomer, the level premium system, of which, perhaps, our friend, Mr. Ellis, of the Travellers, is the only Simon-pure representative. [Laughter.] Neither is it even the investment life insurance system. It is, as I suggested, the system of faithfully adhering to the fundamental conditions of the problem; and such is my faith in its necessity and success, that no matter what forms and fashions of the garment are brought out from time to time, it must succeed, and there will ever be a return to its simplest and truest conditions, and therefore, I fail to be able to fulfill my response to the close of the toast, which I must leave to those who have less faith than I in its permanence, for one with my faith, cannot even utter a prayer for that end.

MR. FACKLER: Gentlemen, the next toast of the evening is:

"THE ENGLISH INSTITUTE OF ACTUARIES: Well have its members paid the debt which, according to its Baconian motto, every man owes to his profession."

I will call upon Mr. Emory McClintock and Mr. T. B. Macaulay to respond to it:

RESPONSE OF EMORY MCCLINTOCK.

Gentlemen, I suppose I am called upon to respond to this toast, because, some fifteen years ago, the Institute of Actuaries elected me as one of their Fellows. I have never seen the Institute of Actuaries. I hope to do so before I die. I have never been in England since that time but once, and that was in the summer, for a few weeks, at a time when the Institute was not in session; but at the same time, I have been, ever since I have known anything about life insurance, a faithful student of the proceedings of the Institute, and, of course, a very great admirer of its methods and its successful work.

It was started forty years ago this year. It has had forty years of uninterrupted and increasing success. It was started on a broad basis—a broader basis, perhaps, than we can undertake at present. We have not here anything like the interest in matters outside of life insurance and life contingencies apart from life insurance, that there is in England. We have not here the system of marriage settlements, with entails, a system of successive life interests, passing from one person to another. Those things are comparatively unknown here, while in England they are the rule and not the exception. In this country marriage settlements are uncommon, but in England they are almost universal, and the result is that in England an educated actuary is called upon to attend to a great many problems outside of life insurance.

There is one point of broadness or of liberality in which we can emulate the Institute of Actuaries with great propriety. The first President of the Institute of Actuaries, John Finlaison, was not connected with any life insurance company. He was, to be sure, the Actuary of the Government of Great Britain. The present president is in the same situation. He is not now connected with any life insurance company. Other presidents of that body have been in similar positions, for example, Professor De Morgan, who was a professor in the University of London. The names of a good many distinguished men, who are not at all, or very slightly connected with life insurance, are to be found on the rolls of this Institute. Professor Sylvester, whom we all know about, his name is to be found among the founders of the Institute.

We can make our Association broad enough to include everybody interested in life contingencies, whether they are connected with life insurance companies or not. The work of the Institute has been of a sort, perhaps, in one respect, that we cannot emulate at present. Its educational work has been enormous. I think, bye and bye, we may show something like it; I hope so. We can certainly imitate its work in the matter of preparing papers. These papers ought to be published, and I trust the council of this Association will see its way clear to establishing some sort of a journal or periodical, with a responsible editor, to see that the right things go in it, and that they are put in in the right shape.

There is one subject, however, that is referred to on the programme, that I think of more importance than anything else in the Institute of Actuaries, and which we can bear in mind. It is the motto which appears on the outside of every number of the Journal, in which—not Shakespeare—but Bacon, says: "I hold every man a debtor to his profession," etc. I think that the motto on the outside of that journal has been a stimulus to every actuary in Great Britain. I think it is responsible for a full third of the work done, and I think, gentlemen, we ought to heed that motto and have it constantly before us. [Applause.]

RESPONSE OF T. B. MACAULAY.

Mr. Chairman, I am highly sensible of the honor done me in associating me with Mr. McClintock, and I think it has been done owing to a slight oversight. Probably the President, who placed me to respond to this toast, was not aware that there was present another F. I. A. Mr. McCabe is an F. I. A., and I am only an associate, but as my name has been mentioned, I would like to express, in a representative capacity as a member of the Institute of Actuaries, what every member will feel.

I think I can take it on my hands to say, that, no matter in what part of the world, Great Britain or any part of the Colonies those members may be, that there is a sufficient feeling of sympathy with us in America that they will, one and all, feel a sense of personal pleasure on the formation of this society. And when I look at the work that the Institute of Actuaries has done, I do not think there is any denying the fact that it has been certainly one of the most powerful factors in England in raising the profession to the position it now occupies. Indeed, it is unquestionable that no other factor has done so much in Great Britain to raise the profession of actuaries, both actually and in the public estimate, as the Institute of Actuaries.

I do not know whether any of you have had the same experience as I frequently had, of going for instance, into a court of law and acting as a witness, and the lawyer would ask your name and your occupation, and you would say, "I am an actuary." "An actuary—what is that—how do you spell it?" [Laughter.] They know nothing about it, but in England, on the contrary, instead of having as here, an almost unknown standing, the profession is recognized by law. The Institute of Actuaries is now incorporated like any other profession. It has a legal status, and that is owing solely to the Institute of Actuaries.

And as I say, I see no reason why we cannot do at least as good work here as is done in England. Americans and Canadians are in no way inferior to Englishmen. [Laughter and applause.] I think we have as much knowledge among us—and, perhaps, more. [Laughter.] At any rate, I think it is a duty which we owe to ourselves to form an Association like this, to give us an opportunity to show what is in ourselves, and to give us an opportunity to bring forward the experience which each one shall have had, to be put into practical shape and get the benefit of it, and instead of going along groping singly, each one working as best he could upon the problems that come to him, and having but little assistance, such as he could get from reading—and that reading very largely being the Journal of the Institute of Actuaries. I say, instead of each one having to go on his own account, I think it is time that we should get the benefit of united knowledge and the united experience which we have. And I have no fear, that by the help we can give each other, we are to-day laying the foundations of a society which will, in a few years, rival the old Institute of Actuaries in its usefulness to the members who compose it. And I will close by saying that this gathering shows that England is not alone in appreciating the motto of Bacon, and as every man derives profit from the profession in which he is engaged, so he is bound to add dignity to it and, in every way, to assist in building it up. [Applause.]

Mr. Fackler: Gentlemen, I think I only voice the sentiment of those present, when I call upon Mr. McCabe to continue the response. We were not acquainted with him, otherwise we might have given him longer notice in advance. He has probably seen something of the Institute of Actuaries since he became a Fellow, and will be able to tell us something more than the first Fellow who spoke to us. [Applause.]

Response of William McCabe.

Mr. Chairman, I think it is hardly fair, especially after the able manner in which the sentiment has been responded to by the gentleman who has preceded me, to call upon me to say anything in regard to the subject. No more competent gentlemen could have been selected to respond to the toast than the two we have just heard. Mr McClintock is well-known both in Great Britain and especially in America, as being one of the men standing in the foremost rank of the profession. It is quite in order that one of the younger members should follow him, and that the member should be an associate, as Mr. Macaulay. It used to be the practice, I believe, among some of the older nations, to place the younger group in the front of the battle. Mr. Macaulay has ably discharged the duties devolving upon him in that connection, even if he is only an associate. As some years ago, I had the pleasure of appending my name to his nomination as an associate, so only a few days ago, I had the additional pleasure of appending my name to his nomination as a Fellow. [Applause.] And I am quite confident that at our next meeting he will be elected a Fellow of the Institute.

The work done by the Institute is well known to all of you present. It is especially marked by the compilation of the tables to which the president alluded, known as the H. M. Tables, and I hope, in the course of time, that this body will take part in producing a table which will represent more accurately the present condition of insured lives on this continent, and if we do no other work than that, we would have fully discharged the debt which every man owes to his profession—the sentiment to which Mr. McClintock so ably responded.

I have experienced great pleasure from this gathering, and it was especially gratifying to receive the first intimation of it from Mr. Fackler, whom I

had not the pleasure of meeting until to-day, although his book was one of the first books I took up as a student, many years ago, and from which I derived a great deal of valuable information. His name is well known in Canada, and, of course, is thoroughly well known in every part of America as well as across the water.

I am glad to observe that in the formation of this body no geographical lines have been recognized. It embraces, I believe, all the continent, and, I belive, all who have received an invitation have responded. It was intimated to-day, that a very large majority had done so—that is, all excepting a few that might be counted on the fingers of one hand, had responded favorably to the formation of a body of this kind. And, notwithstanding the differences that people have sometimes endeavored to make between the Anglo-Saxon race, I believe the same sentiment runs through both the American and British people that was so beautifully illustrated the other day at Samoa by the brave sailors on board the "Trenton," when, in the fearful storm which they were then facing, they recognized the bravery of the sailors on board of the British ship, which was just passing safely through the crisis. [Applause.]

I trust we may have many meetings similar to the present, and that the Association, which no doubt will be formed to-morrow morning, will be a permanent one. [Applause.]

Mr. Fackler: The third toast is: "The Actuarial Profession in America: May association aid and stimulate its members to earnest, individual effort in the interest of life insurance, and may all both deserve and maintain a high professional standing."

Mr. St. John, whom we all know and love, was put down as first to respond to this toast, but sickness, as certified to by his physician, has kept him from us. In his place Mr. Miller has kindly consented to speak, and will be followed by Mr. Clayton C. Hall:

Response of B. J. Miller.

Gentlemen, I think that our honored organizer has rather misrepresented my position. He says that Mr. Miller has kindly consented to try and fill Mr. St. John's place. He has not done anything of the kind. He had no option left him. He had to do it, and I feel great diffidence in trying to take the place of our distinguished friend, and I am very sorry he is not here to fulfil his own duties, but still I cannot help myself.

I believe the sentiment of this toast is a very admirable one. "In union there is strength." It is very hard work in this world to get along all by our selves; It is a very difficult thing for one person to study up and learn all that ought to be learned in regard to a profession like this. I think each one of us has taken the first step in carrying out this toast to its full extent and spirit. We have all come together here to help each other, and I do not see anything that we can do that will more fully comply with the spirit of the toast than what we have done. We can simply let the good work proceed. Now, it seems to me, that among all the professions and the businesses of the day, that the actuarial profession stands foremost in one very important respect. It almost undertakes to usurp the place of the prophets of old. Our function is not to say what shall be done in order to keep things right to-day. "Sufficient unto the day" is not a good motto for us. We must build for the future. It is a comparatively simple thing to say that the affairs of to-day run smoothly. But when we come to cast an eye into the far distant future, and build our plans with respect to the state of business and to the state of society forty or fifty years hence, it is the duty of each man to exercise his highest conscientiousness and to be faithful to his trust.

We are all exposed to a great many temptations; I think the man who guides his company in such a way as, in the long run, to give the best results to the policy-holders as a whole, is the one who renders the most faithful duty to the company and to his profession.

There are several practical points that occur to me, wherein we can, each of us, render very valuable service. I know of nothing of such vital interest to the profession as ascertaining the true laws of mortality. We not only want to know what are the laws of mortality for a great number of persons, but we ought to be able to analyze them. We want to increase our knowledge as to the mortality to be expected in certain classes of a company's membership.

The first classification that occurs to me as being of great value, is carrying out, what has already been carried out to a considerable extent, the ascering of the different laws of mortality that prevail in different sections of the country. If we have not the knowledge we cannot act intelligently. The experience of any one company when worked up, is good, but no man can afford to build his views on the experience of one company. It may be exposed to peculiar influences. We can do what the English companies have done. If we can all contribute our statistics into one general fund, I think we could get a table of mortality that would be of greater value to us in this country and in Canada than any English table which exists. In support of that view, let me make one suggestion. The English experience, which covers the greatest number of observations, which is the most approved English table to-day, is the H. M. Table. It comprises the observations of only about one million, two hundred thousand years of life. Some years ago, the Mutual Life published the first valuable contribution to American statistics, and it is as valuable to-day, almost, as it was then. That comprised observations upon only five hundred and seventy-eight thousand years of life, but that experience itself was of almost one-half as valuable as the H. M. experience.

The Connecticut Mutual recently published an experience containing very valuable analyses, and covering in its male lives seven hundred and eighty thousand years of life, which approximates very closely to the H. M. Table in numbers.

The Mutual Benefit has worked up its experience only through 1887, and it covers eight hundred and ninety-seven thousand years of life.

I have not had time to familiarize myself with the figures of the other companies. Suppose only the three companies named were to combine their experience to-day, the result would be an experience covering three times as many years of life as the whole H. M. Table covers. When we add the experience of all the other companies in the country—and they are all working on comparatively even lines—we would have a fund of experience which would be almost an infallible guide for the future. I think we can all see, just in this point, apart from any other that might be named, a means by which we can all contribute in the most valuable manner to the spirit of this toast, and I hope that before long, as one of the most valuable outcomes of this association, we will have just such an elaborate collation of statistics as will give us the best mortality tables in the world, so far as American lives are concerned. I may add, although our honored Chairman has already mentioned the point, that the experience of every company so far as I know—every American company which has been so far published—proves conclusively that the American Experience Table, if a guess, was a most happy one. It was not a guess; it was an inspiration. [Laughter and Applause.]

Response of Clayton C. Hall.

Mr. Chairman, in responding to the toast to the Actuarial Profession in America, I know I am but echoing the common sentiment when I speak of the sincere gratification which we all share in this first assemblage of American Actuaries. Few in numbers, and scattered widely apart in this broad land, the opportunities for personal conference and interchange of views upon questions of common interest are, except among those who dwell in a great center like this city—extremely rare; so rare, that many who have for years been known to each other by name and reputation, and perchance through correspondence, have to-day, for the first time met one another face to face. But this meeting is not only an occasion for gratification; it is also one of mutual benefit. We are told that a man's countenance sharpeneth the face of his friend; and certainly the value of association and conference in stimulating interest and quickening zeal is strongly felt by all who are engaged in similar pursuits. Especially is this the case if the work be one which calls for special preparation or training; under the influence of friendly discussion among men who have independently studied the the same subjects, the faculties become aroused to fresh activity, new views are suggested and developed, and a genuine progress is secured in both thought and action. These benefits, and the pleasure that accompanies them we look for, and confidently anticipate from the opportunities for association and conference which, it is to be hoped, will be afforded by the organization which we are now engaged in founding.

But in considering the future of the profession of Actuary in America, it seems to me proper to take a wider view of its scope than that which is connected with the interests of life insurance alone. The management of life insurance, it is true, has given rise to that profession, and has afforded its chief employment, for the reason that in it are involved problems more complex than are to be encountered in any other branch of business enterprise. The need for men specially trained to deal with those problems has been, and is universally recognized. But the qualifications required of a thoroughly trained and equipped Actuary are sufficiently varied to include a fitness for other, though allied, fields of labor. The Actuary should have some knowledge of general economics. He must, of necessity, be a competent mathematician, and especially familiar with the theory of probabilities, and its proper and legitimate application. He is called upon to observe the rate of mortality and to watch its drift and tendency. He is called upon to ascertain the causes, sometimes of particular results, and also to predict the result of new influences that may be set, or are to be found, in operation. He should, therefore, understand the true methods of scientific investigation and analysis. He must know how to observe and how to determine the value and significance of his observations. He must, withal, be a man of affairs, and qualified to deal with practical matters in a practical way. He should have some legal knowledge, especially as to the law of contracts; and, since the obligations of life insurance companies extend into the far distant future, and the value of interest accumulations forms a most important element in dealing with them, he must be thoroughly familiar with the theory and principles of finance. For knowledge upon all these subjects, the Actuary has to use in his ordinary relations with the business of life insurance, and the encouragement of these studies will, I am sure, be one of the results of our Association. But in connection with the subject last mentioned, the theory of finance, and the economic questions related to it, will, I believe, be found in the future a great expansion of the actuarial profession.

Fifty years ago there were comparatively few forms of investment to be had. Land, ships, bank shares, the shares of other joint stock companies, such as marine insurance companies, and, in Great Britain, the consols were the most usual forms, and they very nearly exhausted the list. To-day, the financial market is filled with the bonded debts of railroad and other corporations, and those of States and municipal bodies, classes or securities which have been partly created, and almost wholly developed during the last half century. According to the census of 1880, the municipal debts in the United States had increased in the space of ten years from $515,000,000 to $821,000,000, the rate of increase being about sixty per cent. During the present decade, we know the increase has been enormous. Now, what will be the result of this increase? These bodies cannot increase their indebtedness indefinitely. In many, probably most of the States, they would be checked by constitutional limitations. Then, as the limit is approached, unless the increase in wealth and in the basis of taxation has more than kept pace with the increase of indebtedness, if the ability to borrow is to be preserved, the means of extinguishing the old debts must be found; and this can only be done by systematic provision made for the purpose. The necessity for such a systematic provision is too often overlooked, or, if recognized, is deliberately disregarded. The possession of practical experience in finance, as ordinarily understood, is not a sufficient preparation for dealing successfully with questions of this sort, for their solution must often lie outside of personal experience. In order to deal with questions arising under conditions themselves comparatively new and still developing, there is required a special training in the study of the underlying principles, financial and economic, by which they are necessarily governed.

It is here that the advice of the Actuary is needed, and I believe the time is not far distant when such advice will be generally sought. The constitutional and other legal questions relating to municipal debts, it is for lawyers to pass upon; but for dealing with them apart from these questions, so as to provide most effectually for their ultimate extinction as the several

loans fall due, and at the same time in a manner least onerous to the tax-payers, there is required precisely the kind of knowledge and training which belongs to the Actuary. It is with just such questions that he is specially qualified to deal; for what is the reserve of a life insurance company, which he habitually determines in accordance with the particular circumstances of the particular company, but its sinking fund, gradually accumulated to meet maturing obligations, a fund accumulated upon principles the correctness of which is proved in theory and confirmed by experience? The sound administration of municipal and other public debts is of the utmost importance to the welfare of the country; and notwithstanding some apparent difficulties actual as well as theoretical, it is a subject which the Actuary should approach with ideas both definite and mature.

I believe that our interest in these and kindred questions will be greatly stimulated by our association together; I believe that the fact of our association will lead to a clearer knowledge in the community at large, as to the nature of the subjects with which Actuaries are by special training qualified to deal; and, alluding to the closing words of the sentiment to which I have attempted to respond, I feel confident, that such a professional standard will be maintained throughout this organization, that whenever the advice of any of its members is sought upon these or similar questions, it will command and receive the respect and attention which are due to sound and deliberate judgment. [Applause.]

Mr. Fackler: Gentlemen, I am requested to continue to call for addresses—Probably you all remember that you were asked to prepare papers, or remarks of some kind upon matters of interest to the profession, and I hope that some of you have been able to do so. One gentleman wrote me that he was very much interested in the mortality in the tropics, and he hoped that I would suggest to some member to prepare a paper on that subject. I told him he was connected with a company that had had a considerable amount of experience in that regard, and I accordingly requested *him* to prepare a paper upon that subject: that was Mr. Macaulay, and I hope he has done so.

Mr. Macaulay: Mr. Chairman, I wanted information. I did not feel competent to give information, as our field is small—taking in the West India Islands only—and my object was to get information, and even if I were in a position to give it, I would not have been able to prepare a paper on such short notice. I do not propose to shirk the work. I think we should all do something, and while I may not take up that subject now, I may do so at some future time.

Mr. Homans: Gentlemen, there is one member here who I think has given considerable attention to the subject of mortality. He is a stranger to most of us, I think. I have had the pleasure of knowing him for some time. He, I am sure, would give us something of interest. I would like to call on my friend, Mr. Hendry. [Applause].

Mr. Hendry: Mr. Chairman and friends, I feel a good deal of difficulty in my present position. I have been very unwell for a number of weeks back, and it is a great difficulty for me even to express what I would like to express, and more especially at this time, and as I am troubled to some extent with sleeplessness, and at the present time I think it would be unwise, considering my present condition, to monopolize your time. I could not do justice to what I would like to say on the matter, and I am quite sure you would not enjoy it any more than I would. At some future time if I should be able to do anything for you I shall take great pleasure in doing so. I do not know whether my friend has hit my peculiar line of life or not. I am not quite sure that I have studied the subject of mortality quite as much as might be supposed in the matter: but I have to some extent plodded along through some nineteen years of service almost, I may say, alone. Living alone, as I mentioned to-day, in a small country town, running a small company—a company that was once designated by some great American company's agent as a "wheelbarrow company," and at other times was called "A little Dutch company" because we happened to live in a German community, and all that kind of little talk; but we plodded along and did the best we could. At that time I was the general chief cook and bottle washer of the whole arrangement, inside and outside. [Laughter]. But I "tuggled" along through the subject, some times until one, two and three o'clock in the morning, to get my mind pretty well filled with the work that I had to do until I got turned over on my back, and since that time, which is now about twelve years ago, I have not been what I ought to be at my time of life. I look probably a dozen years older than I am.

But I may say here that I do enjoy the pleasant meeting that we have had. I enjoyed the letter which I received from our friend here, Mr. Fackler, and thought it was just right. It seemed to me that it came in at a very opportune time. I thought it came in just about right, and the responses have borne out the idea that struck me when I read it; for some reason or other it seemed that it was a necessity. I don't know why it was, but I said to my people at home that I believed it was going to be a reality and a useful reality at that. [Applause.]

Our Board passed a resolution that I should come here under the circumstances, and I came here under a sort of double circumstance. That circumstance was that I had to have a consultation regarding my own health, and I should have come under these circumstances anyhow. But coming as I did at this particular time, I certainly have enjoyed the companionship which I am satisfied we have all enjoyed here. I like the business mode of carrying out the work on this side of the line.

Our commencement has been very propitious. We have done a good thing to-day. We have had an excellent lunch and we have had a splendid dinner this evening, [Laughter and Applause]. And I am satisfied that it has contributed no little to the good feeling that has been present amongst us all. We all look as if we were pretty well kept—probably myself excluded for the reason that I am run down to a considerable extent—but after all is said and done, if I do look a little thin to-night, I am generally in pretty good spirits wherever you find me. I do not let my troubles bother me, and I feel to-night as young as I did twenty years ago when I took charge of my company at that time.

I plodded along through it, and I am sure that there is nothing in my life that has given me so much real and thorough satisfaction as studying the principles of life insurance, and to some members who are here to-night—Mr. Homans is one, Mr. Fackler is another, and Mr. Wright's father is another—Mr. Wright's father was the first gentleman that I consulted in regard to that matter, and I spent I think about a fortnight in Boston when I was there the first time, and I went back again and I had some very valuable talks with Mr. Wright, and from those beginnings I have been enabled by a great deal of hard study and labor to accomplish all that I have done.

In conclusion allow me to say that I trust that our association which has been so prosperously begun will be a permanent one, and in the future, if I should be spared with you, I hope you will permit me to be a humble listener and a faithful follower of all that I think is good and true, and permit me at the same time to differ from you where I think a difference might properly arise. [Applause.]

Mr. Homans: Gentlemen, the hour is still early and it is hardly worth while to adjourn so soon. I would suggest one matter that occurs to me, and it may possibly be of some interest to you.

Mr. McClintock referred, very justly, to the difference between England where the law of entails and of primogeniture prevails, and this country where it does not, but I had a peculiar instance of such calculations in my younger days when once I had as a client no less a man than Charles O'Conor.

The case was this: A gentleman had left to the Oxford Theological Seminary a large estate on the condition that his children and their children should have life interests in that estate before the Seminary should come into the enjoyment of it. Time rolled by, and both the children and the Seminary were anxious to have a settlement, and the matter was placed in the hands of Mr. O'Conor. He consulted me in regard to a basis of settlement, and I was fortunate in finding the statistics that had been prepared with so much care by the Institute of Actuaries, not only regarding the rates of mortality, but also the probabilities of marriage and the probabilities of issue. By a study of those statistics I found what was the value of that contingent estate. I think there were five children, three of whom were grown and two were minors. Two of the grown children were married and had families. The third grown child was single. The two children, of course, were not married, and the problem was to find the probabilities of issue, not only of the children who were married, but the possibility of marriage and issue of the grown child not yet married, and the probabilities of marrying and of leaving issue in the case of the children who were still minors. [Laughter.] I fortunately was able to get at an arithmetical result founded upon something better than guesswork. I gave the result to Mr. O'Conor, who gave it to his client, and I had the satisfaction of learning that the settlement was made in accordance with that "guess." [Laughter.]

The point of special interest to me was that my feelings were so much affected, partly by the novelty of the problem and partly the awe with which I was filled at having a client of such eminence as Mr. O'Conor, that I, in a moment of self-abnegation, offered to give my fee to the Seminary, and it was accepted with such alacrity that there was danger of my hair turning gray on the spot. [Laughter and Applause.] I mention that as an instance to show that we may have some problems of that nature brought before us in this country.

Gentlemen, we have with us some members of our profession who have contributed in a good measure to our knowledge of the laws of mortality by publishing the results of their experience. I was in hopes of asking Mr. Wells to give us some information as to his experience in that matter, but I believe he has silently taken his departure. [Laughter.] But we have Mr. Woodward, who has published the experience of his company, and I think it will give us all pleasure to hear what he has to say in regard to the experience of his company. I would ask Mr. Woodward to say something.

Mr. WOODWARD: Mr. Chairman, the size of the John Hancock is such that I feel a little embarrassed at speaking among the actuaries of companies which count their assets at so many times what our company does.

The only interesting point connected with our mortality experience was that no company in the United States that I know of ever went through such trying times as the John Hancock did in 1874 and 1875, when it was only the turning of your hand, so to speak, whether the company would go into a receiver's hands or not, and, in consequence of the troubles we went through, we lost within two years, I think, between thirty and forty per cent. of our premium-paying policies. Now the old bugbear of "selection," if it amounted to anything, would certainly have shown in the experience of the company, the good lives would have taken their surrender values either in cash or paid up insurance, and left the poor lives to pay their premiums and continue with the company. And when I looked into the mortality of the company it was principally to determine whether such had been the result or not; a book was published and most of you gentlemen had a copy, and the result showed that the experience under the policies which remained, being only about one-half of the company's previous business, was practically the same as it had been before the trying times that the company went through, and while the number of policies was not large, it certainly showed to me that it would be almost an impossibility for any company to incur a very heavy mortality through selection in the lapses. As I said before, the company was so small and the number of lives so limited that it might not be safe to rely on its experience, but that was the only thing of interest that was discovered in our mortality record. It is under the table rate altogether, except so far as female lives went; and, strange to say, while the loss under policies on male lives during the twenty years was but eighty-four per cent. of the table rate, the loss under policies on female lives was 110 per cent. I cannot offer any reason for that except it may be that there is an objection on the part of women to tell the truth [laughter]—in business matters I should have said. [Laughter.]

A VOICE: Isn't it in regard to their ages?

MR. WOODWARD: It was not so much their ages, though our excessive mortality was among those who stated their ages to be between twenty-five and thirty-five. Gentlemen, I do not think that I can say anything else that would be of interest to you. [Applause.]

MR. HOMANS: Gentlemen, I will now call on Mr. Sanders, of the Michigan Mutual, to give us some information.

MR. SANDERS: I do not think that I can present anything that will be of interest in regard to experience of the Michigan Mutual. What observations have been made, were taken many years ago when the company was very much smaller than it is now, and nothing of interest, I think, was brought

out of it, and even then the observations were very incomplete. We did not go far enough to produce anything of any interest. The experience, I believe, generally agreed with that of the other companies, so far as it went, and especially in that one point which Mr. Homans spoke of in his observations that the lives of Americans during the earlier period seemed to be much more hazardous than those of Englishmen; showing that we live faster, that we reach the climacteric period in this country quicker than they do over there. The age in England is forty-five, and in this country it is between thirty and thirty-five, and that difference appears in the table that was gotten up at that time by Professor Harrington, my predecessor in office.

MR. HOMANS: We have also with us a gentleman who I have not had the pleasure of meeting until this morning and whose company is managed with signal ability, and whose report on its experience is familiar to us all, and who, I am sure, can give us some information of value. I refer to Mr. Wing, the Actuary of the Provident Life and Trust of Philadelphia.

MR. WING: Mr. Chairman and Gentlemen, it is a pleasure to me to be with you and to count myself one of such a company as this. I am not at all prepared to say anything about the figures of the Provident Life. They stand for what they are worth. I do not feel that I have analyzed them sufficiently to speak before such a company as this. I was interested in the remarks of the Chairman about the mortality of the endowment policies, and it seems to have been verified in the experience of our company. Whether the reason you have assigned for it is the right one or not I am not sure. Possibly it is. It probably has something to do with it. [Applause].

MR. HOMANS: We have with us two actuaries of companies which have not yet published their experience, though they have collated the mortality statistics, and they can give us some data, which will be all the more interesting from the fact that they have not yet been published. I refer to Mr. Weeks of the N. Y. Life and Mr. Pierson of the Washington, and I am sure we will all be glad to hear from Mr. Weeks.

MR. WEEKS: The mortality experience of the New York Life has not been thoroughly tabulated down to any recent date. We confined ourselves mostly to an investigation as to particular localities or classes for insurance, where some special question in regard to business was to be answered. I can tell what our experience has been in regard to two points that have been spoken of this evening. In regard to the effect of selection upon mortality, we tested our experience in fractional paid-ups compared with policies continued. The mortality on fractional paid-ups is higher than on policies continued to maturity, that is, testing it by corresponding years of duration. But the mortality on fractional paid-ups is only about two per cent. higher than on policies continued in force; that is, supposing the mortality on policies continued in force to be ninety per cent., that on fractional paid-ups is ninety-two per cent. This is so slight that there is clearly very little effect of selection against the company in policy-holders going out. On the point of experience in female lives, we have not yet had a great deal of it, but enough to show the existence of a law. Up to the age of forty-eight the mortality on female lives is higher than on male lives, but after forty-eight the mortality is a great deal lower; this is a pretty constant thing in our experience.

MR. HOMANS: I now call on Mr. Pierson.

Mr. Pierson: Mr. President, I wish that Mr. Weeks had spoken of the principles which his company have adopted in making up their experience, because we have followed, in a great measure, the plan which they have pursued. I was with the New York Life for eight years, and had a little to do with the early part of their experience work. For the experience of the Washington Life, we adopted the amounts of Insurance for the basis of the investigation, for the reason that the average amount of policies terminated by death is larger than the average amount of policies in force, as shown by the Insurance Department reports for all companies; taking the amounts, you can disregard the numbers of policies; and, inasmuch as when a second or third policy is issued on the same life there is a fresh examination, each policy is practically a new risk; therefore, we used amounts as the basis, and disregarded the number of policies on the same life. Our experience is the same as that observed by the Connecticut Mutual and by other companies, viz, the mortality is a good deal heavier on life policies than on endowment policies. I have made a little investigation on reversionary additions. Many companies do not have reversionary dividends, but by the courtesy of three of the companies that do, I was enabled to compare their experience with ours. It runs pretty nearly in the same line, viz, the mortality is a good deal heavier on the reversionary additions than on the policies; almost double; and I notice that the reversions on each policy, the average amount per thousand, increases very rapidly from the younger ages up, not because the amount of the dividend is larger, but because, it seems to me, that the younger members more generally use their cash dividends. They are perhaps not so able to pay the full premium. But as the members grow in age, their financial condition improves, and they pay the full premium. Moreover, as a man increases in age, his life becomes somewhat impaired, and wanting more insurance, conscious that he cannot pass an examination, he increases his insurance by using the reversionary additions. The cost of mortality has been spoken of, and the cost of business has been spoken of. It sometimes appears that the mortality and the cost of business would use up the premium. A gentleman who is conversant with the expense of getting business said to me the other day: "Why, the percentage of commission and expense on the first year's premium runs up," as he stated it, "to seventy-five or eighty per cent, and they say that you need fifty per cent. on the average at the end of the year for a reserve? What is the reserve to come from if you pay seventy-five per cent. of the premium for expenses? Where are you going to get a dividend from?" That is like the poor fellow who had lost his leg on the battle-field, and, while bleeding to death, accosted a cavalryman who was riding by, and begged him to take him on his horse to the surgeon's headquarters; the cavalryman consented to do it, put him on his horse, and said: "Grip me tight around the waist, and I will take you as fast as I can to the surgeon's headquarters; and he went as fast as he could, but on the way a cannon ball came along and took the poor fellow's head off. When he got to headquarters he said to the surgeon, "here is a poor fellow I picked up on the battle-field; he has lost his leg and is bleeding to death." The surgeon looked at him and said, "Why, he hasn't any head." The cavalryman turned his head to look and said, "Why, the infernal liar, he said he had only lost his leg." Moral: The expenses take the leg and blood of the premium, then the mortality decapitates what remains. [Applause.]

Mr. Homans: Gentlemen, we have nearly exhausted the subject of mortality, and I think we can hear with profit, some of the remarks from a gentleman whose writings are familiar to us all, especially on the subject of rates of interest, and I now call on Mr. Smith, of the American.

Mr. Smith: In the early days of my professional life I was requested by the *Spectator* people to prepare a review of the Massachusetts report, which was, I think, issued twenty years ago. In that review I ventured a suggestion that within the period of a generation the rate of interest would be less than that estimated by the State of Massachusetts for a computation of reserves, and I need not tell you that I found myself, after making that prediction, attacked by financiers and business men for making what they called a very absurd statement. My only reply was: "Wait and see what the logical outcome of this business is. Wait twenty or twenty-five years and see whether I am right or not; the interest in Germany, the interest in London, the hard pan rate is not above three per cent.; the rest is all insurance for the safe return of your principal." You know what the sequel has been, that a government bond bearing six per cent., and possibly bought for ninety, has been replaced by a four per cent. bond selling at a premium of nearly thirty per cent., which would indicate possibly an interest of two and three-quarters per cent. or only two and one-half per cent. In the computation of life insurance premiums, as everybody knows, the table of mortality and the rate of interest has to be assumed; and to carry out, logically, the deductions from such an assumption, the interest received on the reserve must equal that of the assumption, or while the premium is computed at four per cent. it must be four per cent, or, if not, the company will be unable to fulfil its engagements, or logically so. We now come to face a grave question—perhaps the gravest question in the whole business—that is, how are we going to make up this loss in the case of a larger default in the interest factor? How are we going to make up this loss? Even now there are grumblings, followed by suggestions that three per cent interest must be taken in the future as a basis, and they talk of extending it back on the old business. Now, gentlemen, do you know what that means? It means an increase of seventeen or eighteen per cent. on your reserve. How many American companies can stand this? Supposing it remains at four per cent., how are you to get that four per cent. when your funds are only earning three per cent.? For my part I can only see two ways that it can be gathered, one is from a more favorable mortality and the other is by increasing the surplus. I believe to-day that it is the duty of every company from one end of the country to the other to increase this surplus margin, and for the reason you must have some fund from which you can draw to make up the deficit, and I can discover no other remedy than by increasing the surplus in the days of prosperity to fill the gap in more adverse times. I have written on this question, and I have suggested this question over and over again, and I believe, gentlemen, as I said before, it is one of the gravest issues that we will have to face by and by. The probability is that it will be a very strong one. Now that presents some other questions of importance; the accumulation of the surplus means a reduction of the dividend and an increase in the premium of the insurer. It seems to me that that insurer should be, in some way, compensated for such loss, and the only way that I can see is by giving him a *post mortem* dividend constructed on some equitable principles. The accumulation of a surplus is a need to-day. If a man dies he receives a less dividend than he otherwise would have received, and consequently at his death a pretty good portion of the surplus can be estimated and returned to him or to his heirs with the amount of his policy. I wish very earnestly that some gentleman would take up this matter and discuss in an insurance journal, or in the public journals, the best methods of procedure under these circumstances. The question seems to me of such vital importance that none of us can afford to disregard it in any way or in any manner, and it should be taken up and thoroughly investigated, and should be made, as I said, to cover any possible deficiency. We cannot afford to hazard the solvency of our companies by any miscalculation in this matter. I speak of this matter because it has seemed to me, after considerable thought and after considerable investigation, that it is one that is *germane* to this Association—one that we should take up and consider and report upon here at some future meetings. The mortality, of course, may make up something, but that is never a certainty. There are companies in which there has been an excess. The company with which I am connected for years had an excessive mortality. The Knickerbocker Life had an excessive mortality. The Life Association had a mortality of about 700,000 in eight years in excess of the scale. These questions are worth considering, but, gentlemen, I will call your attention to the particular subject about which I wished to speak, and that is the interest question. I wish some other gentleman would say something about that, because I think it is a matter of very great importance. Before I sit down, I would like to suggest that a few remarks be made by my excellent friend on the other side of the table on the mortality of his company, that is, Mr. Barker, of the Penn Mutual Life, of Philadelphia. [Applause.]

Mr. Homans then introduced Mr. Barker, who spoke as follows:

Mr. Barker: Mr. Chairman and fellow-members; I do not know that I can throw a great deal of light upon the questions of mortality of insurance companies in general, but, perhaps, there may be some few points in connection with the mortality of the Penn Mutual, which may interest you. I may say that for fifteen years the mortality of the Penn Mutual has but in two years out of fifteen equaled the table rates; that the average for ten years has been about seventy-six per cent. of the tabular rate, and in comparing the actual deaths with the percentages of the policies in force on ages above sixty, the mortality has in many cases exceeded the table rate, while the general mortality has been below the table rate, and another peculiarity has been that for several years the younger ages showed no mortality. I may say, that in one year under the age of twenty-eight, not a single person died, and there was not a dollar of loss, although we might have expected some forty or fifty thousand. There is a point that, I think, no member of this Association has touched upon here to-night, and that is, magnitude of business and the future growth of the same. The population of this country is to-day in excess of sixty millions. Allowing five persons to a family, which, I believe is pretty nearly the average, it gives about twelve million, five hundred thousand families. Out of each family there certainly ought to be two members who are insurable; that would give twenty-five million of insurable people in the United States to-day. Let us examine the statistics and find out how many we have insured. There are less than two million five hundred thousand, I think, out of that possible twenty-five million who are insured to-day in the United States. I think, gentlemen, it is well to look forward to the possibilities of increase in the business. [Applause.]

Mr. Homans: Gentlemen, the remarks that have been made show conclusively and demonstrate the necessity for an association such as we propose. The collation of the mortality statistics contributed by the companies which are willing or may be willing to do so, arranged perhaps in different states, would be of great value. It has been suggested that perhaps it would not be necessary to make the division so minute, but in one point it would not be without value: for it would show the value of what we may call the "personal equation" of the agents and medical examiners; it would be valuable to make such a minute division.

The hour is somewhat advanced, and perhaps it would be well to adjourn soon. At the meeting this afternoon you appointed two committees, who I think will be ready to report at the meeting which has been called for to-morrow morning at 10.30 o'clock in this room. We will then have more serious business before us, namely, the question of the form of organization, and how to carry those recommendations practically into effect. I suggest when we adjourn this evening it should be to adjourn until to-morrow morning at 10.30 in this room.

On motion meeting adjourned.