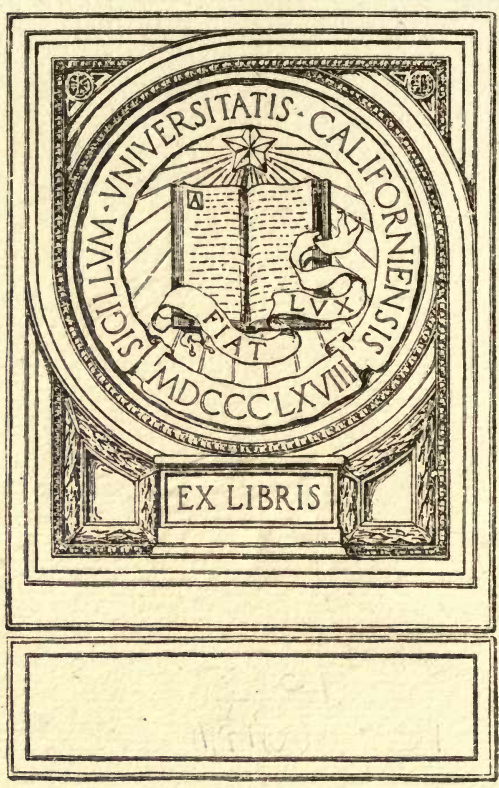


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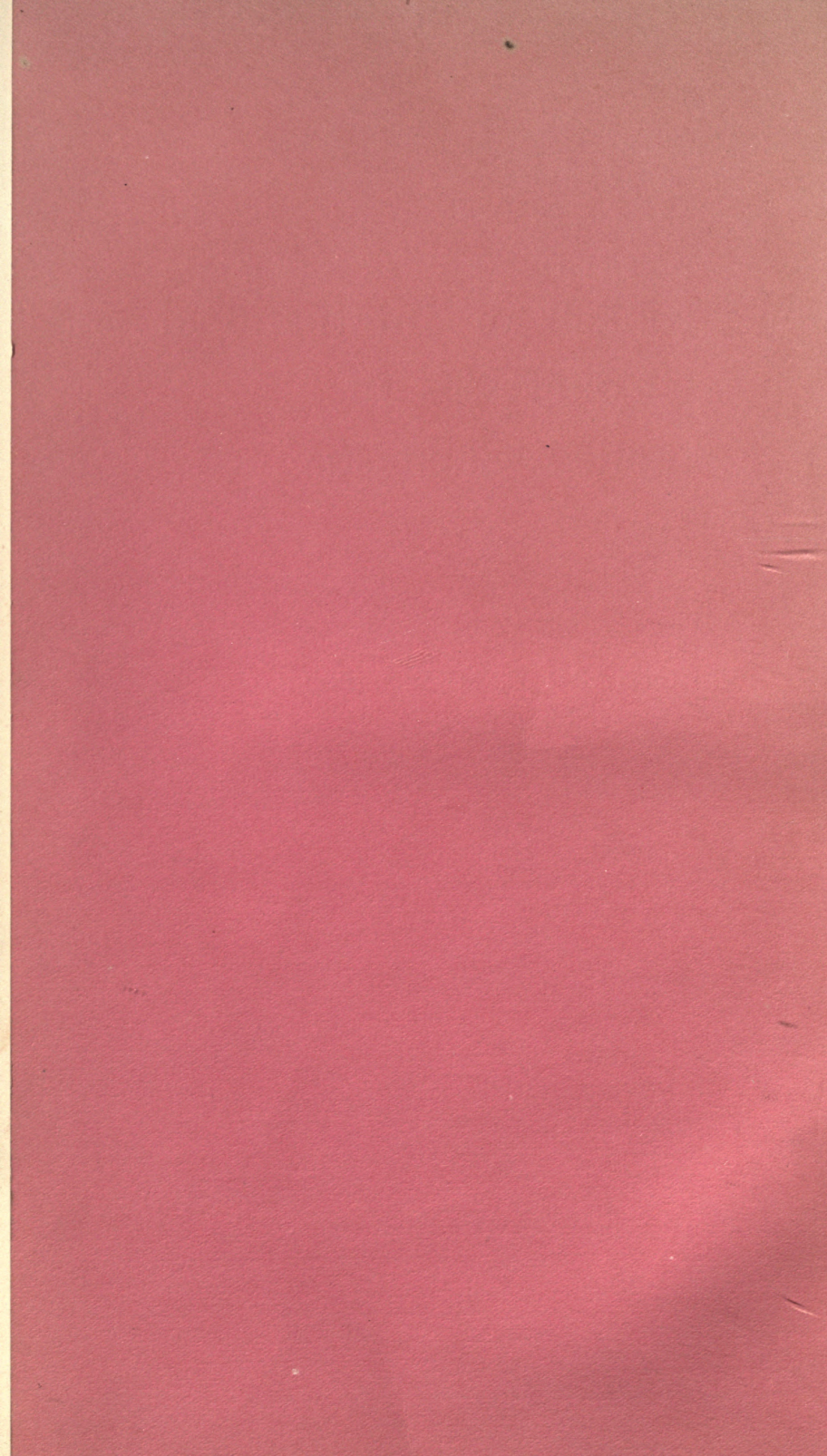
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TO THE
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THE PROBLEM OF INTERNATIONAL CONGRESSES OF APPLIED CHEMISTRY

BERNHARD C. HESSE, PH.D.

The object of the following is to present in concise and impersonal form some of the lessons that seem to me to be read out of the experience obtained in preparing for and in participating in the conduct of the Eighth International Congress of Applied Chemistry. I am persuaded to the belief that these notes may be useful, because of the opinions to that effect expressed by most of such of my friends with whom I have discussed the subject, and to whom I have presented my views.

In reading these pages the fact must not be lost sight of that they in no wise deal with the social side or the factory-inspection, or the private entertainment side of such a Congress, or with anything that in any way deals with any "host and guest" aspect of these Congresses, all of which I regard as with perfect propriety not a matter of any concern whatever to these Congresses as an institution, but they are the pleasure and the reward of the host country alone. This article is limited strictly to the outline of, preparation for and conduct of the scientific or technical side, that is, the side of the actual hard work of the Congress about which all other functions are supposed to cluster and which is itself held out as being the real justification for the existence of these Congresses, and their real merit in aiding the progress of mankind.

My own conclusions, based upon what is contained in the succeeding pages, may, in part, be summed up as follows:

I. The International Congresses of Applied Chemistry of the past have been loaded down with such an overwhelming proportion of extraneous matter that their true business has been entirely submerged therein and the only remedy lies in curtailment of such matter and limiting the activities of the meetings to matter of international and debatable character all pre-ar-

ranged, leading discussions in print and the whole matter prepared for *viva voce* discussion.

II. Sectional meetings to be on alternate days and the intervening days to be used by sectional secretaries and participants in discussion in definitely making up the record of the meetings of the preceding days; all matter not in the hands of the sectional secretaries within a reasonable time, say, three working days after the close of the Congress to be denied admission to the printed record.

III. All manuscript *must* be typewritten and all other requirements of the printer fulfilled by all authors otherwise the papers to be returned without exception by the Committee to their authors.

IV. The only way that the persistent and thoroughly correct demand of members for rapid delivery of the printed proceedings can be complied with is to require all participants to be prompt in supplying their manuscript; rapidity of execution requires efficiency in organization and contributing members are part of such an organization and they must all discharge their respective duties at the same efficiency rate that they expect the officers in charge to achieve; no committee can print from nothing, nor can it proceed any faster than the slowest contributor.

V. The demands made upon the Congress for the treatment of scientific matter have grown out of all proportion to the financial ability of the Congress itself to do so; prudence and caution as well as a decent regard for financial propriety all demand that that part of the undertaking of the Congress be cut down to a dimension commensurate with its income.

The reasons for these and other conclusions will be made clear as this article proceeds.

Inspection of the Reports of all preceding Congresses, inclusive of the Eighth, discloses an evergrowing tendency to increasing bulkiness and with little or no increase in the efficiency or ripeness of the actual, crystallized work of these Congresses, namely, the discussions and the resolutions offered to and considered by the Congress, meeting as a whole in its last session and the Reports of Commissions or Committees created at a preceding Congress and directed to report at a subsequent Congress.

Everyone must be struck by the enormous amount of material brought together at the Eighth Congress and on suitable examination all will, no doubt, agree that more than 90 per cent of all such material (however valuable *per se* it may be), is not fitted for nor adapted to discussion in a meeting where international interests are supposed to be primarily or almost solely involved, and that these 90 per cent would have been written and published even without the stimulus of such a Congress, in one or more of the many channels of publication now so plentifully provided all over the world and in every language. The final result is that, in an endeavor to do seeming justice to the great bulk of material offered, the real and important work of the Congress, namely, the formulation of an expression of opinion on the part of the Congress on certain topics which are of international import, scope and interest is simply drowned in that bulk and therefore necessarily slighted and resolutions and reports are put through hurriedly and without due consideration by the various sections, trusting to the International Commission or to the Congress itself to take care of any imperfect work that may have been so performed.

Clearly, it is not the object of these Congresses to provide merely another vehicle of publication for papers that would be written and therefore published without the stimulus of the Congress, nor do men go to the expenditure of time, money and effort to attend such gatherings merely to hear papers read that would reach their library desks in due course and automatically. The object of these Congresses must be to bring into being a class of communications, and a class of results which cannot be created nor accomplished by the societies, associations and publications, now so plentifully at hand. The results that these Congresses must be intended for, are such results for whose accomplishment the direct personal contact and the direct attrition of minds of men of different and differing opinion on debatable and therefore discussible questions, is a prime requisite and essential so that out of these various opinions some order, some system, some agreement, some progress may arise. There is very little to be gained by discussing a paper which merely tells you the physical or chemical constants of a limited number of substances, certainly not enough to make it worth the while of any considerable

body of men to travel across oceans and continents to attend the reading of such papers. There exists a plenty of publications ready and eager to take matter of that kind and which can be read with equal benefit in the quiet of one's own study.

In addition to these discussions of debatable questions there is the co-operative work needed for the solution of problems of international importance and the receipt and discussion of reports thereon by the Commissions appointed by preceding Congresses; like the resolutions above referred to these too are caught in the maelstrom of papers and suffer from want of discussion and do not receive that attention which they require and merit, yet these resolutions and these reports are the *only* work that depends upon and requires such gatherings for which the world does not now have ample volunteer and non-governmental machinery, and they have not held that prominence and that importance in past Congresses which their potential value justifies and demands.

It is easily manifest that past Congresses have not provided for the Commissions who are to report to them that machinery which is best adapted to the attainment of worth-while results, nor have they given to the results reported that attention and publicity to which their history and origin entitles them. To serve on such a Commission or Committee is wholly a labor of love on the part of those doing that work; the money grants made by the Congress appointing such Commission are wholly insufficient to give proper publicity even to the results, not to speak of the expenses due to organization and the actual performance of the needed clerical work if the work as a whole is to be well done. When such a Committee does report, its reports are not accessible to nor known to the members at large of the Congress while the paper of another who has not committed himself in advance to devote his time to the accomplishment of an allotted task in a given time has his paper prominently before the attending members and receives more than his proportionate share of attention, all to the detriment and the disadvantage of those who three years before bound themselves out, as it were, to perform work which from its own nature is largely a Cinderella-like piece of work. It is very easy for a Congress to say to a certain Committee that such and such work shall be done by the

time the next Congress meets, but it is anything but easy to accomplish anything in the allotted time and present it in a form accessible for discussion and when it is presented for discussion those receiving the report should be acquainted with its nature sufficiently in advance to enable them to prepare a useful, helpful and creditable discussion and criticism, both destructive and constructive, of the report on which so much time, labor and thought have been spent. Perfunctory acceptance or perfunctory discussion or perfunctory discontinuance of labor voluntarily assumed in the belief that it is of wide and general importance and thereupon conscientiously performed with considerable sacrifice of time, effort and labor is not conducive to causing busy men, and they are generally the best men, to expose themselves to such sacrifice for so unsatisfying if not distinctly discouraging reward or treatment. If that kind of treatment of reports and of those who laboriously prepare them continues there can be but one result—men less qualified for the work will undertake it and reports of lesser and lessening value will be produced. If the value of such reports is to increase and these Congresses are more closely to approach the *only* field of real international usefulness open to them then more thought and more reflection must be given to the outline of the work to be performed when a Commission or Committee is created by those creating it or advocating its creation, more consideration and discussion must be given to the report when ready and the report itself must be more widely distributed and much more in advance of the meeting and finally more financial assistance must be given for the needful detail and clerical work; the same is true of resolutions expressing the conclusion or consensus of opinion of the Congress or any debatable subject or topic.

At this point it may be well to call to mind that of eighteen reports by Committees or Commissions that should have been made to the Eighth Congress only two were so made; further, that of twenty-five resolutions adopted by Sections only nine were placed before the Congress because of failure of the sponsors of the remaining sixteen to perform their respective duties.

Now, how can this be done? Merely to point out a fault without suggesting a remedy is an easy thing to do. I fully realize how difficult it is and perhaps how egotistical it may seem to

propose such a remedy; nevertheless I will run the risk of error and misunderstanding and propose what seems to me to be one feasible plan at any rate, but I must not be understood to mean that I regard this as an *only* or a *complete* solution. It is brought up for the purpose of discussion in the hope that something will result from it which may in the future prevent these Congresses from falling within themselves due to their unwieldiness, bulkiness and poverty in results actually accomplished.

The plan is as follows:

- I. Abolish all papers on promiscuous subjects.
- II. Reduce the number of sections to four, say
 1. Inorganic.
 2. Organic.
 3. Analytical.
 4. Administrative.
- III. Confine the work of each section to a stated program mapped out in ample time in advance of the meeting and limit their work to deliberation on reports submitted and resolutions to be proposed to the Congress as a whole.
- IV. Have sectional meetings on alternate days only, *e. g.*, Monday, Wednesday and Friday with the Final General Meeting of the Congress on Saturday afternoon; Tuesday, Thursday and Saturday morning to be given up to sightseeing, works inspection and social and other matters generally and this time must be used by the sectional secretaries and participants in discussion in properly assembling and writing the minutes of each meeting and in preparing the proper matter for the daily paper of the Congress giving the text of the resolutions finally adopted by each section.
- V. Monday, Wednesday and Friday afternoons to be given over, if desirable, to general lectures of the type heretofore held; these would provide ample opportunity for the broad presentation of chemical topics to the Congress and to the public in general.
- VI. Sectional meetings from 10 to 12 and from 1 to 3; general lectures at 4.

The topics on which resolutions are to be proposed to the Congress are to be determined by the Committee in charge of the Congress in any way that may seem suitable to it; one way might be to present the Committee's views to each of the societies, institutions and associations represented by delegates at the last preceding Congress and to ask for criticisms of, subtractions from or additions to the list of topics so submitted and for suggestions of those who might be fitted to take part in the leading discussions; the suggestions of the Committee together with those received from these above defined organizations with respect to topics to be sent to the technical press on a stated day and left open for further criticism by the general chemical public until a certain other stated day; thereupon the Committee in charge of the Congress to select from all these topics those that it deems suitable for consideration and to announce the definite selection together with their numerical designation, their assignment to sections and their places upon the program not less than eighteen months in advance of the meeting and to send such statement to the various organizations and to the technical press. Further, this Committee should select for each debatable topic definitely put upon the program one individual to discuss the topic broadly but concisely in ten or fewer printed pages, say, not to exceed, 4,000 words; also to assign to each of two different view points of the subject one man who shall be limited to five pages or say not to exceed 2,000 words; (all those suggesting topics should also suggest the names of those who might be in position to discuss them to advantage, but these names should not be made public); the leader's article to be ready 120 days before the Congress meets and to be sent to the other two writers, and the other two articles to be with the Committee ninety days before the Congress meets. These individuals to be selected and announced one year before the Congress meets. These three contributions are each to carry with them a proposed resolution or proposed resolutions for submission to the relevant section and are to be based upon the matter submitted. Ninety days before the Congress meets no further suggestions of topics for resolution or report are to be received and no further memberships or delegateships accepted. This period of ninety days will all be needed to enable the Committees of the

Congress to make proper preparation for the prompt despatch of business and the proper social and other diversions; ninety days before the Congress meets each foreign central committee and organization should telegraph the Congress Committee the number of members it has obtained in its jurisdiction and how many of them will probably attend the meeting together with the probable number of accompanying ladies and should follow this telegram up with a typewritten list, in duplicate, of all members in its respective jurisdiction together with the post office address of each such member; the same should be done with respect to those members who have declared their intention of attending and so far as possible with their addresses while attending the Congress.

In selecting these topics and those who are to discuss them due regard must also be had to the reports to be received and acted upon and their respective places on the program.

Ninety days before the Congress meets all reports to be presented should be in the hands of the Committee; these reports together with all the discussion papers, are then to be printed and put in the mail for distribution to members of the Congress sixty days before the Congress meets together with a copy of the program in full, giving the date and time of day when each topic or report is to come up for action. In this way every member will have foreknowledge of all the principal points at his home not less than thirty days before the Congress meets and all who are interested will have ample time to prepare creditable and really valuable criticisms and discussions of definite subjects and topics; it might also be feasible to permit absent members to send in their criticisms in writing for presentation to the section in charge, but this seems to me to be of doubtful value.

The Committee in charge of the Congress will, of course, add to this printed volume a list of all the topics presented to it as subjects for discussion and which it did not accept so that the various sections can consider them also in laying plans for the succeeding Congress and after they have placed their recommendations with the Congress the latter, at the meeting of Saturday afternoon, can have the benefit of all these suggestions and of the various valuations placed upon them in deciding what shall be, in part, the leading topics for the next Congress.

At the sectional meetings themselves where the resolutions and reports are discussed suitable stenographic or reportographic minutes could be taken and after proper editing printed in a supplemental volume together with the final action on each topic, resolution or report.

This would result in a compact, concise and clear exposition of the real work of the Congress and free from all the distraction of extraneous and promiscuous papers; of smaller dimensions than its predecessors, doubtless and necessarily, but therefore all the more valuable and meritorious.

In the program proposed there are provided six meeting periods for each section or a total of twenty-four meetings of two hours each or a total of forty-eight meeting hours. If, in each two meeting hours one good resolution or expression of concensus of opinion can be adopted or one good report received, thoroughly discussed and further feasible work mapped out or a new commission established with ample and explicit working directions, the real and only field of international congressional work will have been covered in a fairly efficient manner and progress towards complete accomplishment and achievement of that real work, in the future will have been made. In this manner the attention of those in attendance at sectional meetings will be riveted on one, and only one, topic at a time and having two hours to make something out of the subject-matter, pre-digested as it were, and so placed before them and no further chance to consider the matter being offered, the probabilities are that proper consideration will be bestowed upon these subjects and the results are bound to be more nearly worth while than at any time in the past; at any rate, if under those conditions worth-while results be not accomplished the responsibility for such non-accomplishment cannot be shifted to the presence of distracting papers and the like. Each section would have before it just one piece of business to dispose of, two hours in which to do it and it would be known as being solely and alone responsible for the good or bad quality of the work turned out.

The responsibility of selecting worth-while topics and properly assigning them to the sections and disposing of them in the program would be wholly upon the Committee in charge of the

Congress and with only twenty-four items of business to arrange and provide for, it is clear that the chances of selecting good and worth-while topics and so disposing them in the program as not to clash or conflict with others the task is not so difficult as it might, at first glance, appear to be, certainly, not so difficult and unsatisfactory as trying to arrange 789 papers to suit as many authors and several times that number of auditors.

It may be objected that this would greatly reduce the attendance at the sectional meetings; if it reduces that attendance to all those actually interested and prepared to take part in the work no possible harm can come to the Congress and its work.

From the report of the Secretary of the Eighth Congress (Vol. 28, p. 471) the following table, which is self-explanatory, is deduced:

	Papers presented†	Papers read by authors	Per cent of papers not read by authors	Attendance	Participants in discussion	Per cent of attendance represented by participants in discussion
Sectional meetings, Joint Sessions*	546	286	47.6	3,956	610	15.42
	157	96	37.2	2,650	250	9.4
Grand total	703	382	45.6	6,606	860	12.9

* Not including three joint sessions at which discussion was not invited.

† A total of 789 papers was presented to the Eighth Congress; of these 703 were presented to the meetings by the authors, the authors' representative or by title, and 86 were not presented to the meetings in any form whatever, although printed in the Report.

Therefore almost half the authors did not appear to defend or sustain their papers, 11 per cent did not even offer their papers to the meetings and only about one eighth of all persons in attendance made any remarks on the papers presented; surely those remaining seven eighths might just as well have been elsewhere so far as the real work of the Congress is concerned.

At the closing general meeting of that Congress fewer than 400 were in attendance and of these only 15 or 3.75 per cent took part in the discussions, *i. e.*, less than one per cent of all who had registered took part in the final deliberations of that Congress.

It further appears from the same report that eighty of the offered opportunities for meeting were not used and that not to exceed 217 of the 530 sectional meeting hours placed at disposal were utilized.

Further, that out of 217 actual meeting hours only 169 were used for reading and discussing papers, leaving 48 hours, at most, for the consideration of the total of twenty-five resolutions introduced and for the transaction of such other business as may have engaged the attention of the respective sections. It is perfectly safe to say, however, that these forty-eight hours were not nearly all used for discussion of resolutions.

It therefore seems not unreasonable to expect that a grand total of forty-eight hours of work devoted to a grand total of twenty-four different topics by four different sections, each working in meetings of two hours each on six topics and only one topic at a time for which it is wholly responsible will produce a concentrated and compendious and very much worthwhile piece of work and one in which the real matter is not buried under or drowned in a mass of irrelevant matter, however interesting and otherwise valuable that matter may be.

This concentrated and classified program of the scientific work need in no way whatever interfere with any other of the functions incidental to such Congresses; quite the contrary, men who have undergone such concentrated and responsible work are all the more entitled to relaxation and enjoyment, and are all the more entitled to the privileges of factory and works inspection; they will have earned them many times over.

This plan of procedure would not only produce a final report of greater value, accessibility and utility than any of its predecessors, but would materially lessen the labors of the Committee in charge of the Congress and would permit it to concentrate more thoroughly on the actual and vital things needful for the accomplishment of the proper work of the Congress because these would thereby be greatly lessened in numbers and scope; necessarily with that it would prevent what cannot be, in the light of the preceding, anything but a waste of money and substance. The printing of 90 per cent of needless matter of the Eighth Congress called for the use of upwards of fifty-four tons of perfectly good white paper (representing in value 1,080

membership fees) and this, to all practical intents and purposes, is a waste of just so much good material and membership fees, a thing which chemists, above all other professionals, should not tolerate nor encourage. I am in a position to know that this unnecessary printing and the labor connected with the collection and handling of these papers, cost the Eighth Congress substantially 6,600 membership fees, whereas the paid-up membership was only 4,163 or roughly 63 per cent of these needless expenditures. If the policy that seems heretofore to have governed these Congresses continues these expenditures of time, labor, money and effort, above designated as needless will increase and sooner or later will assume far greater relative proportions with respect to income from memberships and therefore must inevitably destroy the support given these Congresses by chemists at large and finally these Congresses must of necessity; disappear, such disappearance could be regarded as nothing less than a calamity since the field for these Congresses does exist and there is need of the work they can perform.

Needless to say, no business enterprise could survive such disproportion between income and outgo and no institution, scientific or otherwise, that is operated on such inefficient lines has any real claim to support, encouragement or consideration from any source whatever. These Congresses have now passed through eight meetings and the institution as a whole is nineteen years or more old; it is not unreasonable to expect that a definite proper policy as to scope, commensurate with the income of and the actual interest in the institution, should be adopted. In this connection it may be useful to refer to a paper by Walter F. Reid (*Journal of the Society of Chemical Industry*, 1907, p. 75) in which he gives the total cost of some of these Congresses and their memberships.

	Total outgo, expressed in membership fees	Income, expressed in membership fees	Deficit, expressed in membership fees
1897 Vienna.....	782
1900 Paris.....	1,200	1,751	551*
1903 Berlin.....	15,000	2,533	12,467
1906 Rome.....	8,160	2,375	5,785

* Surplus.

(It might be helpful in framing a definite policy to ascertain just what things caused the surplus of 1900 to be thereafter turned into a deficit in each case greater than the total outgo of all preceding Congresses.)

Corresponding figures for the Seventh or London Congress of 1909 are not available. In the Eighth Congress the expenses for printing the proceedings were 7,000 membership fees, for propaganda 2,000, for stenographic and recording service 500, for registration, daily journals and delivery of original communications 300 or a total of 9,800 membership fees thus leaving for these items which are really legitimate strict Congress-business expenses a deficit of 5,628 membership fees. It is this sort of a deficit that calls for immediate, serious scrutiny and attention; unfortunately the Berlin and Rome figures are not capable of being distributed over strict Congress-business expenses on the one hand and expenses which are chargeable to hospitality, entertainment and the like, on the other; these latter are certainly not matters of concern to the Congress but the former most certainly are and they are the only ones here considered or in any way referred to.

The only remedy seems to lie in following the old adage: "Cut your coat according to your cloth" and that is precisely what the above proposed plan is peculiarly adapted for; the amount of preparatory work would be greatly diminished and also that of the preliminary printing; the amount of printing needed throughout would be greatly reduced and based upon the experience of the Eighth Congress it is safe to say that all the needful preliminary work could be done for 600 membership fees and all the printing necessary and all expense of reprints and placing of the volumes with the transportation lines and all strictly Congress work during the meeting could be done for 2,500 additional membership fees *i. e.* the entire expense of the Congress would be covered by 3,100 membership fees. Had the American Committee been at liberty to adopt some such plan as that proposed it is safe to say that there would have been a fund left of substantially 1,000 membership fees. What effective and useful work that sum of money would have enabled the Eighth Congress to initiate for the Ninth! What an entirely different economic position these Congresses would then occupy!

Instead of being dependent they would be independent; instead of justifying their existence by glittering generalities and of obtaining support and financial aid for them by appeals to national or civic pride they would be their own justification; the honor of being hosts to them would be spiritedly sought after; places on the Committees or Commissions to report to subsequent Congresses would be regarded as prizes to be struggled for and coveted and not, as now, accepted in a spirit of sacrifice for the good of the cause! The fact that all the organizations in the different countries would have an opportunity of shaping and directing or of helping in shaping and directing the program and of the work to be accomplished would greatly stimulate the interest in the work of the Congress and would make each one of them feel that it has a direct individual interest in the Congress; this would be equally true of individual chemists the world over. No doubt the Committee in charge would not be put in the embarrassing position of having 70 per cent. of its invitations to such organizations ignored and only 25 per cent. accepted; it would be spared the immense labor of sending out over 17,000 letters soliciting contributions of papers to the Congress and would be relieved of the work of writing up its aims and hopes from over 40 view-points and sending them out to the extent of over 300,000 pieces and of sending out over 120,000 application blanks for membership and to receive only 1-30 of them back as effective applications.

It is difficult to conceive that among the thousands upon thousands of chemists the world over that 4,000 of them would not discern it to be to their advantage to subscribe the same membership fee, as heretofore, to support an enterprise of the kind outlined; the volume or volumes containing the work of the Congress would be absolutely unique in chemical literature and would perform a function not now performed and which cannot be otherwise than of use to chemists wherever located and in whatever branch engaged and in so subscribing they would make it self-supporting and therefore self-perpetuating; it would be capable of continuous and powerful exercise of its influence and could be made to develop continuously and steadily along preconceived and clearly marked lines and be controlled by a continuous and continuing policy, itself capable of adaptation

to changing conditions, none of which properties are possessed by the Congresses of the past.

In view of the fact that 11% of all the papers printed were not read at the Eighth Congress even by title and that on the average only 44.5% of those in attendance at the Congress were present at the reading of those papers, that the discussion of only 22% of all the papers presented was finally accepted for printing, it must be apparent that the reading and discussing of papers forms a very small part of the justification of those Congresses, nor can any great proportion of this justification be credited to reports and resolutions, for less than 22% of the time actually spent in meetings could have been used at the Eighth Congress for the discussion of such resolutions and reports and only 36% of all resolutions discussed in sections ever reached the Congress itself; nor can the meetings be credited with much attractive weight, for at the Eighth Congress the members utilized only 41% of the time made available for meeting in sections; finally, only 13.1% of those in attendance at the Congress had their remarks in discussions reported in the printed report, so this can not be credited with any very great attractive power.

At the Seventh Congress only 11% of all papers read were discussed and only 30% of the members in attendance at the Congress were present at the reading of papers.

Clearly, there must be some other justification in the minds of those attending these Congresses than the reading and discussing of papers and the discussing of reports. What can it be? The Eighth Congress planned to have a "Special Interests Registration Bureau" where attending members who desired to exchange information on special subjects could register and be immediately placed in communication with others interested in the same specialties and who had registered. Before carrying out this plan the prospective members were asked their opinion on this point at p. 12 of the Preliminary Announcement of March 6, 1911, of which 65,000 copies in five different languages were distributed throughout the world. They were asked to say if they cared for that kind of a bureau and if so what divisions and subdivisions they desired. The result was exactly three responses; one was indifferent and the other two thought it might be a good thing. It would seem, therefore, that personal inter-

change of opinion and information arranged and provided for in orderly, thorough and systematic fashion is likewise no justification for these Congresses in the minds of those attending.

Again less than 10% of the attendance participated in the excursions and factory visits, so these cannot form any great part of the attraction of these Congresses.

The Eighth Congress has therefore definitely determined that papers, reports, personal interchange of information, excursions and factory inspection are not singly nor collectively any very great determining factors in inducing attendance upon these Congresses and the puzzle of just what does constitute this real attraction and justification to those in attendance is passed on to the Ninth Congress in the hope that a correct and positive answer to it will then be obtained.

In the event that it should be considered unwise or not feasible to alter the policy governing the Congresses, experience with the Eighth Congress has shown that certain requirements and obligations, compliance with which has heretofore been left optional with members, should be made obligatory and mandatory.

1. Members should be *obliged* to have their names and complete post office addresses typewritten out or legibly printed by hand in their applications so that there will be no need of spending time deciphering them; writing should be absolutely barred for this purpose; to decipher the slovenly and indistinctly written applications for the Eighth Congress took four peoples' time for six weeks and cost 1.5 per cent. of the total income of the Congress from membership fees. It is simply ridiculous and absurd to place such a burden so willfully and recklessly upon a working staff and a Congress Committee both of which have other and more important things to occupy their attention. All applications not so made out should be rejected until so simple a requirement is complied with. Each member's own application should be so clear that it should be used for printer's copy direct.

2. Author's manuscript *must* be typewritten and in duplicate, both as to full paper and abstract, and all figures, drawings or illustrations must also be in duplicate. Handwritten manuscript is not only archaic but most difficult for the printer to follow.

All manuscripts should be provided with a protective front and a back cover and firmly fastened together, and each page numbered; the places that separate drawings are to occupy should be clearly indicated and all drawings should be clearly numbered and the number should appear at the space in the manuscript where the drawing belongs. Original and duplicate should not be sent in the same, but in separate packages; they should not be rolled or folded but should be sent flat; the printer will set from the original and proof-read against the duplicate; in this way danger of delay owing to loss or defacement of copy is avoided. Each document should bear in typewriting on the outside the author's name, the full address to which reprints are to be sent, the number of reprints wanted, the number of the author's or authors' Treasurer's receipt for membership in the Congress, the number of pages in the document, the number of separate drawings, if any; all drawings should be in india ink on white paper or may be tracings on tracing cloth; blue prints should not be sent for there is no generally adaptable method for reproducing them: the redrawing of blue-prints and slovenly or improperly-made drawings cost the Eighth Congress 1.5 per cent. of its income from membership fees. Further, all the different ways the title of the paper is to be indexed and cross-indexed in the final index to the Report, and if the author needs facilities for an exhibition lantern and if so what size slides he proposes to use; if he wants experimental facilities and if so what he needs, or if he needs space for the showing of exhibits and how much space is needed.

It is discreditable that so many authors, as actually did in the Eighth Congress, should send manuscript which was slovenly written, not paged nor fastened together and omit the author's post office address, the number of reprints wanted, the numbers of their figures and fail to show where the figures belong in the text or sent blue prints or slovenly made drawings; that there were no more mix-ups with the manuscript is certainly no fault of such authors; this indifference of authors to their own papers caused an immense amount of extra work for the working staff and for the Committee on Papers and Publications, both of whose time was pressingly wanted for something else than doing the work the authors themselves should have done and gave rise to a very large correspondence which was not only unpleasant

but wholly avoidable in the first place by just a little forethought on the part of the authors, the necessity for which had repeatedly been brought to their attention. The Congress should have power, and it should be thoroughly understood that the power would be rigorously exercised, to return and reject any such manuscript peremptorily. That seems to be the only way to make such useless work impossible.

3. No paper should be considered unless its author or authors be members of the Congress at the time the paper is received; all papers should be short and concise otherwise the abstract only should be printed. It is doubtful if papers can be properly handled and printed, reprints provided and the volumes packed and addressed ready for forwarding for less than one membership fee for each printed page of text or illustration; if the expenses incident to propaganda and solicitation of papers are added the cost per printed page of text or illustration will be very close to 1.5 membership fees or 0.67 page per member. At the Eighth Congress there were 4,163 members whose fees would have provided for the printing of a total of 2,776 pages whereas the first twenty-four volumes alone, which were ready when the Congress opened, contained 5,143 pages of printed matter that had to be paid for; this amounts to 1.3 pages per member or twice each member's allotment; the total publication dealing with papers contains 6,500 pages or 1.5 pages per member or $2\frac{1}{4}$ times each member's allotment. There were 789 papers or an average of 8.2 pages per paper *i.e.* each paper used up 12.3 membership fees or 11.3 in addition to its own; the number of papers was 18.8 per cent of the membership. It is clear that if the individual papers of the future are to be of the same average length, that for each paper submitted there will have to be not less than thirteen members of the Congress if these Congresses are to pay their own legitimate expenses and not be dependent upon the bounty of their hosts to provide them with the naked necessities for transacting their business. Maintaining the present membership fee, there are only two ways of avoiding this situation: increase the membership or cut down the number and length of papers. Judging from the experience of the Eighth Congress the latter is the only way feasible; 4,000 or thereabouts seems to be the limit of membership.

4. If the papers are to be printed in advance, then ninety days before the Congress meets, no further papers should be received and no further memberships nor delegateships accepted. At the Eighth Congress 560 papers were received in time so they could be printed before the Congress met; 229 papers were received too late for such publication; there is no reason at all why all but a very, very few of these papers could not have been presented at the time the other 560 were; this procrastination of authors has caused a delay and an injustice to members and authors who have complied with the reasonable requirements entirely out of all proportion to any gain therefrom; memberships and delegateships can be determined upon and concluded ninety days before the meeting as well as at any other later time; last-minute members are rarely desirable or welcome.

With this thoroughly understood by all, the Committee in charge could have all the papers printed in advance and ready for distribution to those members in attendance and directly after the close of the Congress the volumes then ready could be forwarded to those members not in attendance; the membership list and organization list would be complete and printed and made a part of those volumes; the program could be made up and printed and mailed to every member sixty days before the Congress meets and every author would know that much in advance just when and where his paper would be up for discussion. The indexing work could be brought up to date and would merely need to have added to it the matter contained in the supplemental volumes which would contain the discussions, the general lectures, the joint-sessional addresses, the minutes of the last General Meeting, the errata sheet and the index.

Without some such definite agreement and understanding the Committee in charge will have its time and energies absorbed in attending to the late-comers and be practically forced to neglect or slight the work necessary properly to prepare for those who have been prompt and who attend, manifestly, an improper and wholly unjustifiable state of affairs and which most properly will cause dissatisfaction among those who have been prompt; but that dissatisfaction ought not be levelled at the Committee; the procrastinating and late-coming authors and members are the ones open to censure. The only means of avoiding such

dissatisfaction is to have such an understanding and to stick to it. A gathering of this kind cannot be successful through the work of the Committee in charge alone; members *must* co-operate in the manner laid down by that Committee and not try to run the meeting each in his own way as so many evidently attempt to do. Members owe a duty to the Committee quite as much as the Committee owes a duty to the members and unless members will co-operate with the Committee in the way the Committee suggests, confusion and dissatisfaction must surely result and the cause thereof will most likely lie with the members themselves. It is, of course, unpleasant to write this paragraph but events at the Eighth Congress fully warrant and justify these remarks and they are here made in the hope that the unnecessary labors which the Committee in charge of the Ninth Congress may have to perform will thereby be much less than they otherwise would be.

5. The work performed by the Committee on Papers and Publications fully justifies the introduction of this check into the organization of these Congresses and should be retained. While it is true that the final selections of that Committee are not satisfactory to all nor thoroughly consistent, yet it is equally true that this Committee prevented much discreditable matter from being printed and given the prestige of the Congress. Papers of the rankest kind of advertising nature, of the most sophomoric and puerile character, of the most verbose quality and without point or conclusion were offered to and rejected by this Committee; elaborate papers on topics of the most limited or of no interest to chemists, papers made up largely of matters as old as chemistry itself, without any modern application were among those rejected; direct fraud, evasion and deception were practised by a number of would-be contributors from whom such acts would not and could not be expected or believed, but were detected and frustrated; papers published early in 1912 but which were offered in June 1912 in the hopes that the Committee would not know of such publication, were kept out; one author had persuaded a Sectional Committee to pass a ninety-three page printed book for publication, and this author had taken extreme care to obliterate from his submitted copies every trace that would throw any light on its origin or date of publication; he

overlooked, on one copy, to erase or deface the imprint of the printing house and through this the Committee located that publication and found it had been on the book-markets since 1909 and its preface written in October 1908! These are merely a few of the discreditable acts on the part of would-be authors that this Committee blocked and frustrated. There were many other cases where misrepresentation, falsehood, subterfuge and equivocation were resorted to in an attempt to have papers accepted, but which did not pass this Committee. The conclusion seems irresistible that most of these would-be authors regarded the publication of this Congress as a convenient dumping-ground for papers not elsewhere desired—a thing which the Eighth Congress in no uncertain terms had declared that it was not. Of course, this Committee was powerless to prevent certain instances of bad faith on the part of authors of accepted manuscripts who published such accepted matter in journals in other countries between the date of acceptance and the meeting date of the Congress; there is probably no way of adequately reaching such persons. These are harsh statements, but they are true and no doubt will cause as much astonishment to others as their actual existence did to the Committee.

The constructive work of this Committee has not been as uniform nor as satisfactory as that Committee itself wished, but this is due to the fact that no precedent was at hand except the vague one deducible from the nature of the papers printed by preceding Congresses and because wherever there was a doubt that doubt was resolved in favor of the author simply because of this vagueness; of course, the few guide posts to be found in the rules on papers and publications adopted by the Executive Committee of the Eighth Congress were followed but they did not cover very many cases. The problem of determining what papers should be received and what papers should not be received is a difficult one and a solution for it will probably not be readily found. Personally, I incline to the belief that no paper which does not show within itself and expressly stated, an application of the subject-matter communicated therein to a going industrial operation should be accepted and then only if the subject-matter be new since the last Congress and has not been else-

where read or published; this is offered as a first approximation toward a solution and not for any other purpose.

It must be clear, however, that a Committee which, like this one, has to determine the nature of the material for which so heavy an expenditure as 1 1-2 membership fee per printed page is to be made, performs a necessary and useful function and is a Committee which should have for its guidance as distinct and definite a ruling as possible and power to follow that ruling regardless of any but itself.

6. The difficulty with discussions is to get a printable record of those discussions; many participants get up on their feet without knowing just what they want to say and make remarks which are too ephemeral for publication; others have something of more or less importance to say which may or may not be worth while perpetuating; to sift out the permanent from the ephemeral is the task of the Sectional Secretaries and this cannot be done in the meeting itself; the safest way is to obtain from each participant a statement of his remarks and then the participant must be asked for help in editing or cutting down those reports. Now the hard, cold fact is that the average participant does not like to be called upon in that way; he is at the Congress for, frankly, a holiday with labor, always irksome, as a distinct side-issue; he wants to meet his old friends, to make new ones and to see the sights and he is altogether too busy that way to bother with writing out or checking up the transcript of his remarks. The Secretary may enclose the most pleading note with that transcript or may make the most dire and awful threats, but your average participant serenely pursues his way and leaves the Secretary to his troubles and gladly makes him a present of his own into the bargain and all the Secretary can do is to grin and bear it and be blamed and criticised afterwards because such participant's remarks did not appear.

The only remedy seems to be to give the average participant a little breathing time and to have sectional meetings on alternate days, say Monday, Wednesday and Friday from 10 to 12 and 1 to 3; this would give each section six meeting periods of two hours each or a total of twelve hours. With the papers printed in advance and the program made up and circulated sixty days in advance of the Congress the reading of papers is reduced to a mere

formality; the discussion thereof is the only real business left for a sectional meeting. Aside from a few comprehensive but concise introductory remarks in which the debatable points or some of them are brought prominently forward, the author, if present, should not say anything before the discussion opens; at the close of the discussion the author should be given opportunity to answer criticisms or supply such additional information as may have been asked for. At the Eighth Congress about one half of the papers presented were discussed; the average time used in reading a paper was eight and one half minutes, in discussion the average time was twelve minutes per paper discussed. With the above mode of reading the papers the average time for reading need not exceed two, say, three minutes; in eighteen minutes two papers could on the average be presented and discussed, that is, on the average one paper every nine, say, ten minutes or six to the hour and twelve to the session or twenty-four to the day or seventy-two, in all, to the section. Tuesday, Thursday and Saturday morning could be available to the "average participant" in editing the transcript of his remarks or in writing them out; he would be deprived of his stock excuse that he has to rush off to another sectional meeting and must not neglect his other duties to the Congress for such clerical work which he can do later on just as well. At the Eighth Congress the participants did not get their edited remarks to the Sectional Secretaries until weeks and weeks after the Congress adjourned and it was almost six months before the last Sectional Secretary's report came into the Secretary's hands and all because of the shilly-shallying of the participants in discussion. Perhaps, with some such arrangement of the meeting time the average participant could be pinned down to his work, so that the Sectional Secretaries could all have their work cleaned up within a week after the close of the Congress for it must not be forgotten that each Sectional Secretary like Mr. Average Participant wants to meet his old friends and to make new ones and to see the sights and that the former is quite as much entitled to that relaxation as is the latter.

There should be a distinct and separate authoritative provision and widely published that all participants in discussion who do not have the corrected report of their statements in the hands of

the Sectional Secretaries within three working days after the close of the Congress shall forfeit all right to have their remarks printed and that this provision is to be rigorously enforced. In the last analysis, this is the only way in which such procrastinators can be reached. As things are now the Secretary is criticised because he goes to press too soon by those lazy and indifferent persons and criticised for going to press too slowly by those who are not in attendance, an intolerable and wholly unnecessary condition.

7. Registration by sections should be abolished. At the Eighth Congress only 228 out of 1,883 or only 12 per cent registered by sections, and at no sectional meeting was a list of registrants for that section called for, nor was there any occasion for its use.

8. At the Eighth Congress a suggestion, made to it in the very best of good faith and which on its face gave every promise of the very best results, was followed, namely, of having existing foreign societies attend to all matters of the Congress within their own territory. This has not worked out as satisfactorily as the previous method of appointing one man or one society in each country as the organizer. "What is everybody's business is nobody's business" applies to this mode of procedure quite as well as to activities in other walks of life. Concentrate the responsibility upon one man, or one organization in each country and the results will be far more satisfactory. In order to prove this for the Eighth Congress it is only necessary to compare the elaborate organizations in some countries and the results of their work in membership, papers or attendance with the less elaborate organizations and their results in other countries and to see that, in efficiency, the latter far outstripped the former; in promptness and despatch the latter also were far superior to the former.

9. Chemists should appreciate, no matter on what plan or lines future Congresses may be conducted, that attendance upon these meetings is not necessary in order that they themselves may get the worth of the membership fee. The Proceedings of these Congresses go forward automatically, when ready, to each subscribing member and these are worth to each member at least as much as, if not many times more than, his fee. Chemists at large should appreciate that they are each contrib-

uting to these gatherings by subscribing even if they do not attend and that memberships beyond those in attendance are needed and *absolutely necessary* to make these Congresses a success and independent of bounty or charity; in fact, such subscriptions are just as essential to the success of these meetings as is attendance or contribution to the papers or the discussions. But, in order that these non-attending members be not unjustly treated it is necessary that *all* members and *each* member *without exception* do his share promptly, expeditiously and in conformity with the suggestions of those in charge; otherwise, as in the Eighth Congress the forwarding of the Proceedings to such non-attending members will be delayed to such an extent as to be virtually, though not intentionally but nevertheless, under all the circumstances unavoidably, a matter of injustice to and discrimination against such non-attending members who are each entitled to just as much consideration and courtesy as is any attending member and, as in the Eighth Congress, the Committee in charge will be utterly powerless to prevent such a condition, no matter how much it may have done in providing organization and working staff to carry out its work; if the work is withheld from it, no Committee can proceed. It should be remembered that such Committee is practically delivered into the hands of its lazy membership and such Committee can move no faster, as a whole, than the slowest moving member of the Congress; each member must do the whole of his share and do it promptly. Had this been done by all members of the Eighth Congress there would have been literally hundreds of membership fees of expenditures otherwise disbursed, now made available for constructive work for the Ninth Congress and the publications of the Congress would have been completed four months sooner than they actually were; the number of such lax members reaches an astounding and almost unbelievable total.

This brings me now to my final observation which is valid, no matter in which way future Congresses may be operated and that is that a very large proportion of the attending members fail to realize that all the officers and committee members of a Congress are also members of such Congress; that the services of these officers and committee members are given gratuitously to the cause and that the relationship is not that of master and

servant or of employer and employee nor of guest and host, but of colleague and colleague earnestly striving, each in his own field of responsibility, to make the undertaking which is largely altruistic, a success; that the very least the member can do is to ascertain the plan laid out and follow and live up to that with as little interference with the working of the organization provided as is possible. Further, the organization of such Congresses thrown upon it is temporary, its work is over in a few days, the greatest load is at the very outset; the staff is temporary, is not and cannot be familiar with all the routine (for the simple fact that no man can guess or state what that routine is surely to be), or be familiar with all the members and all the minute details of the business as is the organization of a bank, a railroad or similar large institution dealing year in and year out with a large number of the same details at once, and if only a little forethought and the spirit of co-operation be exercised matters must and will straighten themselves out along the lines mapped out by those in charge. It is very easy to find fault and to criticise, but it is impossible to operate 2,000 or more different plans for accomplishing substantially the same thing at one and the same time, even though all these 2,000 or more plans singly, be equally good and as good as the plan decided upon.

All of the foregoing has been written in the hope and expectation that it will be of service and therefore no personal matters and no personal feeling, of both of which there is fortunately none on my part, appear therein. Some parts may be, and no doubt are, self-evident and obvious but it is the overlooking of the self-evident and the obvious that is the most common trait of men, inclusive of course, of chemists, and it is the self-evident and the obvious that so many fail to realize and consider and it is that overlooking which causes more delay and more disappointment than any other one thing and that is the justification for here bringing up those self-evident and obvious, that is, axiomatic things.

The Ninth Congress received but little discretionary power at the last General Meeting of the Eighth Congress; all it has power to do is to determine the number and scope of sections and to alter their identification-numbers. In all other respects precedent would require it to proceed along lines similar to those followed

by the preceding Congresses. Any change in policy must first be sanctioned by the International Commission of Congresses of Applied Chemistry whose President is Professor Paul I. Walden, President of the Ninth Congress. This Commission is not expected to take the initiative in any change of policy; the desire, if any, for such a change must come from the members of these Congresses themselves. The members of the Eighth Congress owe it to the members of the Ninth Congress to acquaint the International Commission of Congresses of Applied Chemistry of any desires they may have in respect of such changes.

90 William Street,
New York, March 31, 1913.



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