

# RHEOLOGY BULLETIN

Publication of The Society of Rheology, Inc.

Vol. 56, No. 1



January, 1987

## VOTE OF THANKS

The 58th Annual Meeting in Tulsa, Oklahoma was supported by direct financial contributions from the following corporations:

Allied Signal  
Amoco  
Eastman Kodak  
General Electric  
Rheometrics  
Union Carbide

Additionally, exhibitors of instrumentation contributed to the resolution of meeting expenses as well as enriching the technical program:

Brookfield Engineering Laboratories  
Chandler Engineering  
Haake Buchler  
J and L Instruments  
MITECH, Inc.  
Pen Kem Inc.  
Rheometrics Inc.

All members of the Society, and its officers, are grateful for this support.

## SOCIETY OF RHEOLOGY OFFICERS AND BOARD - 1986

President	R. F. Landel
Vice President	J. M. Dealy
Secretary	D. G. Baird
Treasurer	E. A. Collins
Editor	A. B. Metzner
Past President	W. R. Schowalter
Members-at-large	R. C. Armstrong W. B. Russell

## COMMITTEES (As of Dec. 9, 1986)

### Membership:

S. J. Armour, chairman  
R. H. Colby  
H. L. Davis  
Hamed Faridi  
A. M. Kraynik  
C. L. Sieglaff

### Education:

E. A. Collins, chairman  
M. M. Denn  
D. Hunston  
G. B. McKenna  
J. L. Throne

### Site Selection:

E. A. Collins, chairman  
D. Hunston  
M. E. Ryan

### Nominating:

L. J. Zapas, chairman

### Bingham Award:

L. L. Blyler, chairman

## DISTINGUISHED SERVICE AWARD

At the Tulsa meeting the Distinguished Service Award of the Society of Rheology was awarded to Dr. Edward A. Collins, our current Treasurer, for his many and varied contributions to the Society. This is only the second time this award has been granted; the first recipient was Dr. R. R. Myers, in 1985. It is intended that this award be offered only occasionally and for especially meritorious service.

Dr. Collins has been the Treasurer of the Society for the past 14 years, the second longest term of office of any officer the Society has ever had. Before this, he was twice elected as a member of the Executive Committee.

In addition to his more obvious service as Treasurer, he is currently Chairman of the Education Committee, which arranges

our short courses and of the Site Selection Committee, and has served on both Committees since 1977.

As Treasurer of the Society he has not only kept the Society solvent through prudent management of our annual finances, but has increased our reserve steadily through wise investment of our accounts-an admirable role. During all this time he has served as a de facto Executive Secretary or Executive Vice President, for he carries a "corporate memory" of decisions, actions and desires of long past Officers and Executive Committees. He has, therefore, been the proverbial tower of strength both to the Officers and the Executive Committee, not only in his sound and well-thought-out advice but also in his ability to provide ready answers to the minutiae of our various offices.

Formally, the past four presidents of the Society, W. R. Schowalter, A. N. Gent, E. B. Bagley and I. M. Krieger gave instant warm approval for his nomination for the award.

His citation reads "for services as the Treasurer of the Society and as a behind-the-scenes mainstay of Society activities".

## 1987 WINTER MEETING

Santa Monica, CA  
January 18-21, 1987

All members should have received a program of this meeting last month. Last-minute requests for information may be directed to either The Local Arrangements Chairman, Yoram Cohen, Chemical Engineering Department, University of California, Los Angeles, CA 90024, Phone: 213-825-8766, or The Technical Program Chairman, John J. Aklonis, Loker Hydrocarbon Research Institute, University of Southern California, Los Angeles, CA 90089, Phone 213-743-2793.

## 59th ANNUAL MEETING (1987 ANNUAL MEETING)

Atlanta, Georgia

October 17 and 18: Short Course  
Oct. 18-22: Technical Meeting

## PROGRAM COMMITTEE

### Program Chairman:

Gregory B. McKenna  
Polymers Division  
National Bureau of Standards  
Gaithersburg, MD 20899  
301-975-6752

### Co-Chairman:

James M. O'Reilly  
Chemistry Division  
Research Laboratories  
Eastman Kodak Company  
Rochester, NY 14650  
716-477-4334

## SESSIONS AND CHAIRMEN

### Special Symposium:

1987 marks the 25th Anniversary of the first presentation of the BKZ theory before the Society of Rheology. A special symposium celebrating "25 Years of BKZ" will be held in Atlanta with Alan S. Wineman as the chairman.

Inquiries should be addressed to:

Alan S. Wineman  
Department of Mechanical Engineering  
and Applied Mechanics  
University of Michigan  
Ann Arbor, MI 48109  
313-936-0411



**RHEOLOGY BULLETIN**  
Arthur B. Metzner, *Editor*  
Center for Composite Materials  
University of Delaware  
Newark, DE 19716  
302-451-2328

1. *Polymer Solutions and Melts*  
Gregory B. McKenna  
Polymers Division  
National Bureau of Standards  
Gaithersburg, MD 20899  
301-975-6752
2. *Rubber Elasticity*  
Dale S. Pearson  
Exxon Research and Engineering Company  
Route 22E  
Annandale, NJ 08801  
201-730-2262
3. *Liquid Crystal Rheology*  
Donald G. Baird  
Department of Chemical Engineering  
Virginia Polytechnic Institute and State University  
Blacksburg, VA 24061-6496  
703-961-5998
4. *Composites, Adhesives and Fracture*  
Donald L. Hunston  
Polymers Division  
National Bureau of Standards  
Gaithersburg, MD 20899  
301-975-6838
5. *Constitutive Laws and Numerical Methods*  
Ronald G. Larson  
AT&T Bell Labs  
Rm GE-320  
600 Mountain Avenue  
Murray Hill, NJ 07974  
201-582-6158
6. *Large Deformations and Plasticity in Metals*  
Peter A. Dashner  
Mechanical Engineering Department  
3801 W. Temple Avenue  
California State Polytechnic University, Pomona  
Pomona, CA 91768  
714-869-2583
7. *Flow Visualization and Birefringence*  
Eric F. Matthys  
Department of Mechanical Engineering  
University of California  
Santa Barbara, CA 93106  
805-961-2919
8. *Viscoelasticity and Kinetics in Glasses*  
Alan Letton  
Polymer Materials Science Group  
Analytical and Engineering Sciences  
B-1218 Building  
Dow Chemical USA  
Freeport, TX 77541  
409-238-1667
9. *General*  
William E. VanArsdale  
Department of Mechanical Engineering  
University of Houston  
Central Campus  
Houston, TX 77004  
713-749-2460

## CALL FOR PAPERS FOR THIS MEETING

An abstract form is enclosed which should be used when submitting abstracts. These are to be sent to the session chairman with a copy to the program chairman by May 1, 1987. In order to facilitate organizing the meeting, please send the intended title of your paper to the session chairman by March 1, 1987.

No paper to be presented should have been presented elsewhere, nor should it be in press or published. Authors are encouraged, but not required, to submit their manuscripts to **Journal of Rheology** for publication.

## SHORT COURSE PRECEEDING THE MEETING

A two-day short course will be held on Oct. 17 and 18 on the subject "**Introduction To Rheology: Mechanics and Application to Filled Systems**". The instructors are Richard J. Farris, Luigi Nicolais and S. S. Sternstein. Further details will be made available in our July bulletin.

## 1986 BINGHAM MEDAL NOMINATIONS

Nominations for this year's medalist should be in the hands of the committee chairman before February 15, 1987. He is: L. L. Blyler.

## GUIDELINES FOR THE BINGHAM AWARD COMMITTEE

The present form is the one adopted by the Executive Committee in 1984.

1. A call for nominations shall be published in the regular Bulletin of the Society of Rheology prior to normal Fall date of the annual meeting stating a February 15 deadline nomination.
2. Nominations shall include the following information about the nominee.
  - a. A brief scientific biography.
  - b. A review of those accomplishments upon which the nomination is based.
  - c. A concise evaluation of the importance of the nominee's contribution in advancing the science of rheology.
3. The following item, if submitted, must be appended to the nomination.
  - a. A list of publications.
  - b. Reprints (no more than 3).
  - c. Supporting letters from other rheologists which address the nominee's contributions.
4. The Bingham Award Committee should meet at least once, in person or by teleconference, prior to its final decision.
5. Except in special circumstances, the contributions for which the award is granted shall have been made during the ten years preceding the award.
6. Decision of the Bingham Award Committee must be by majority agreement of its members (including its chairman).
7. The chairman of the Bingham Award Committee should communicate the recorded results to the committee members.
8. The decision of the Bingham Award Committee shall be submitted to the president and the secretary at least by April 1 of the year preceding the normal Fall annual meeting time. It shall be accompanied by a summary of the information specified in guideline 2 above.
9. If the Bingham Award Committee is unable to arrive at a majority decision, its chairman shall submit to the Executive Committee for its decision the dossiers of those nominees receiving the most support.
10. If the Executive Committee fails to ratify a decision of the Bingham Award Committee, or fails to choose from the dossiers forwarded, then no award shall be given for that year.
11. After its final decision The Bingham Award Committee shall classify the rejected nominations into three categories.
  - a. Those to be reconsidered for the next Bingham Award.
  - b. Those to be returned to the nominators for revision and updating.
  - c. Those to be retired from consideration.The chairman shall notify each nominator of the classification given his, or her, nomination.







**BALLOT FOR INCREASED DUES**

As noted in the minutes of the Business Meeting the membership present on that occasion voted to adopt the following schedule for our annual membership dues:

Regular members: ..... \$40.00  
Student and retired members: ..... 25.00

If adopted, these would become effective in 1988 (first billing to occur in October, 1987).

- I APPROVE THIS NEW SCHEDULE.
- I DO NOT APPROVE.

Mail this ballot to the Secretary, Professor D. G. Baird, Chemical Engineering Department, Virginia Polytechnic Institute, Blacksburg, VA 24061-6496 for arrival there prior to March 1, 1987. Your name should appear clearly on the outside of your envelope in order to validate the ballot.



## PRESIDENT'S MESSAGE

Dr. Robert F. Landel

The news from the business meeting in Tulsa has been included in the Secretary's Report by Baird, the Treasurer's report by Collins, and the Editor's report by Metzner. I will therefore only cover additional items and information.

The Society as a whole is in good shape but as you can see we must now face up to the needs of a dues increase. Ed Collins has presented the arguments regarding this matter and the inescapable conclusion that the dues must be raised. Looking beyond our financial base, the Society must take other evolutionary action as well. I believe the goal of the Society should be to become and remain the premier society devoted to that remarkably cross-disciplinary topic of the time-dependent response of materials. But in doing so we will be challenged to remain the society with a hallmark of free-wheeling, pointed, heated debate yet warm personal relationships. A society where one can learn, even if probing into unfamiliar territory, because members see and accept the need to transmit information across barriers of background. Yet as our Society does evolve, how do we pass through the Scylla/Charybdis of bringing in new topics, cross-comparing and cross-fertilizing them with those of past experiences, but avoiding a collapse from shear size into a numbing banality of "just-another-meeting" get togethers? Or a dissipation into so many areas that a feeling of irrelevance creeps in?

As we take up such questions of our future, our financial base, the most immediate question, is being strengthened. Our most externally visible activity, the Journal, is off and running under the new Editor, Prof. Art Metzner, after the hand-off from the able Ray Meyers and the resolution of our back-log of papers at the publisher, Wiley. The Executive Committee is encouraging Art to investigate and develop means of strengthening and advancing the Journal's position in the publishing and technical world. I personally believe that the Journal, since it is our prime product and contact within our discipline areas and with related areas, should be the focus of intense Executive Committee and Membership attention. To this end be encouraged to point out seminal work and areas to our Editor and his Board and to encourage authors to submit to the Journal.

Our Society is, of course, our members and their interests and needs. If we are to be the premier rheology society, then it seems to me that membership ought to encompass those now working on contemporary topics but who are not members and, at some appropriate level (recall the questions above), those working in related topical areas. To this end I have started new activities within the Membership Committee and am in the process of setting up a subcommittee on future directions which will report to the Executive Committee over the coming year.

The Chairmanship of the Membership Committee has been taken on by Dr. S. Joan Armour, Defense Research Establishment, Suffield, in Canada; Chuck Sieglaff will continue to serve on this committee. I have sounded out potential new members but at the moment only Andy Kraynik of Sandia National Lab has been able to accept an appointment. Further additions to this committee, in particular a representative from industry, will be announced as soon as possible. I have charged this committee to both enlarge and enhance our membership. To enlarge in this case means paying particular attention to students and to those rheologists whose materials may not be polymeric. To enhance our membership, I have asked for a report and recommendation on ways and means to increase our industrial sustaining memberships, including such things as the preparation of a statement of benefits which can be used in soliciting such members, and an examination of methods and pitfalls of trying to get new members to join. In this connection past Membership Committee people have pointed out the difficulty of knowing or finding out, from the outside, who is the appropriate responsible individual to contact. Therefore, I urge you to consider your own companies as potential sustaining members and to let the Membership Committee know who such contacts are or might be.

As for the second step regarding future directions, one of the challenges to the vitality of our Society is to recognize and seek out new or evolving areas of rheological endeavor which are under-represented in our membership and our meeting programs. In my view we cannot and should not be a society devoted to single phase synthetic polymers. We have seen the recent creation of a new polymer processing society which seems to duplicate many of the interests of the Society and of the A.I.Ch.E. Or is it not a duplication but the filling of a gap which has arisen? Similarly, the Institute of Cereal Chemists have set up a Food Rheologists group. Again, isn't this an activity or area which could have been equally well served as a Division of the Society? While we have no Divisions now, it is true, our Constitution and By-laws do permit them. Other areas, disciplines and technologies outside the Society are also faced with

problems of time-dependent deformation, e.g. our recent program session on powder and particulate flow and suggestions by members that we have sessions on topics like rock mechanics and glassy metals. Note that the Winter Meeting will have a session which is intended to explore the rheological aspects of commonality in various approaches to fracture. In many cases, members have said that even though they are not working personally in such areas they would surely like to learn more about them. So, should we reach out and try to bridge the gap (if any) between the S of R and these other areas? If so, how? If not, why?

As a corollary, shouldn't we be reaching out to develop ties and methods of cooperation with related technical societies or divisions of societies? Clearly there are often areas of overlap of interests and rightly so. As a Society with a multidisciplinary base, this is not only inevitable, but such overlaps should be one of our strengths. But how to best utilize this strength? The Macromolecular Secretariat of the American Chemical Society comes to mind as one approach. Here, recognizing a common theme of Macromolecular Science running across many Divisions of the ACS, a formal means was set up to develop programs at the National meetings, each devoted to a single theme which would cut across all Divisions involved, and to which each Division was committed to contribute.

The obverse side to such questions has some immediate and well-known problems. Members in any society all-too-often do not cross the hall to attend sessions outside their immediate interests, even after they may have earlier professed interest in having such sessions! Moreover, thoughtful individuals know that it is extraordinarily difficult to set up a cross-disciplinary session. It is a very tough job to avoid snowing the un-initiate or boring the sophisticate (and it sometimes happens that both occur simultaneously!). A third problem or objection is simply the number of meetings. (Of course a partial answer here is that one can kill two birds with one Travel Authorization.) And finally, some have said — if the Society of Rheology meets jointly with Society X, whose meeting is it? Especially if we join in only one or two sessions of a larger meeting of a Society X?

To help address these problems of our future directions, as noted above I am setting up a sub-committee to review and assess how we might effectively reach out to fellow-disciplines and to report to the Executive Committee. I would expect to have an initial report to the membership at the next business meeting at Atlanta and a summary of this and discussions held at that meeting for the December 1987 Bulletin. As of this writing, the members of this sub-committee are former president Jack Knox, Chairman, and our Vice President John Dealy — who would have to carry on the project if any action is recommended and accepted. We expect to have this operation up and running by the time of the Winter Meeting, where further information will be available.

I would urge you to contact them or members of the Executive Committee with any thoughtful questions or comments — pro or con — on this matter and the other subjects covered here. They affect you. It is your Society.

## MINUTES OF THE SOCIETY OF RHEOLOGY EXECUTIVE COMMITTEE MEETING

October 19, 1986

The executive committee meeting was called to order at 2:00 P.M. on Sunday, October 19, 1986 at the start of the 58th annual meeting of the Society of Rheology. Members present included Bob Landel, President; John Dealy, Vice President; Ed Collins, Treasurer; Art Metzner, Editor; Don Baird, Secretary; and committee members Bob Armstrong and Bill Russel. Peter Clark, local arrangements, and Frank Filisco, program chairman, were also present.

Ed Collins reported that the balance as of December 31, 1985 was \$72,482.77. The balance as of September 30, 1986 was approximately \$83,523.55 but we will owe John Wiley our publisher approx. \$30,000 at the end of 1986. The balance at the end of 1987 was estimated to be \$74,820 (Estimate revised to \$54,280 in December). However, the cost per member as of 1985 indicates that we will soon have a shortage based on the present dues structure. Furthermore, there will be additional expenses associated with editing of the journal which were covered by Kent State but which may no longer be covered by Delaware. Some of the new expenses include a greatly increased publication cost (Wiley) beginning in 1986, increased cost of editing the journal, less interest received, page charges are down, postage costs are up, and AIP charges are up. This all translates into a shortage in the near future. The positive balance that we have is due to the industrial sponsors, the net proceeds from the short courses and, perhaps most of all, the profitable investment of our



unexpanded balance by our treasurer - at interest rates which are no longer available.

Art Metzner, in his editor's report, said that the bulletin was mailed on August 5 but some people never received one. Members should receive one in January 1987, but if they do not, the editor should be notified. The editorial delays have now been cleared up and lengthy delays in having papers published should not be expected. Volume 29, 1985 had two December issues (A and B). Members should check to see if they received them and notify Art if they have not. Wiley would like to see the journal have eight issues for 1987 and thereby maintain a uniform number of pages. Since taking over the editorship in July, 1985, Art has accepted 79 manuscripts, 35 are presently under review and 23 have been rejected. Guest editors for 1986 were acknowledged. These were Kurt F. Wissbrun (June), Bruce Hartmann (August), and David F. McTigue and Jace W. Nunziato (October).

The main point of new business centered on whether to raise membership dues to \$35. Ed Collins indicated that this amount was required to cover rising costs associated with publishing and editing the **Journal of Rheology**. Discussion following the original proposal was concerned with whether student members should be charged only \$20, but this was turned down. It was decided that retired members would be charged \$15 starting in 1987 but would not receive the journal. In order to change the dues, the by-laws of the society require that the matter be decided by a vote of the membership. The proposal of the dues increase was to be brought up at the business meeting before sending the ballot out to the members. Ed Collins agreed to write a summary of the reasons why the dues increase is necessary.

Frank Filisko gave a report on the program for the 58th annual meeting. 78 papers were to be presented. Some discussion took place concerning the selection of plenary speakers, but it was pointed out that this matter is solely the choice of the program chairman. Peter Clark, local arrangements chairman, reported on the various problems associated with getting members to preregister. It was suggested that registration at the meeting cost 20% more than early registration. About 125 people registered for the meeting. The industrial sponsors for the meeting included Allied Signal, Amoco, Kodak, Rheometrics, Union Carbide and General Electric. The importance of the contributions made by the industrial sponsors was recognized by the executive committee. It was also decided that the secretary and treasurer would try to locate the names of sponsors from previous meetings to facilitate our solicitation for future meetings.

Ed Collins reported on the short course given by Morton Denn and David Boger. Ed noted the difficulty in getting the message out to the proper sources. However, with some efforts by Ed, the course was attended by 23 people. Jim Throne was recommended to be a member of the short course committee.

The next matter was about whether a charter should be organized for the international meeting in Australia in 1988. Ed agreed to discuss the possibility of a charter with a travel agent.

The next topic was that of future meetings. The 59th annual meeting will be held in Atlanta, Georgia during the second or third week of October, 1987. Gary Poehlein is the local arrangements chairman. The 60th annual meeting will be held in February, 1989 in Gainesville, Florida. Chuck Beatty will serve as local arrangements chairman. The 61st annual meeting will be held in October, 1990 in Montreal. It was also decided to hold a winter meeting in 1991 with possible sites being Tucson or Albuquerque. Beyond these dates no locations were established, but offers are available from Akron and Boston.

The last topic was whether we should raise the rate for sustaining members from \$175 to \$300. The possibility of raising the rate to \$500 and providing one free registration at the meeting and short-course was also considered. No decision was made.

The next executive meeting will be held in either New York or Chicago during the second or third week of March, 1987. The meeting was adjourned at 8:00P.M.

## BUSINESS MEETING MINUTES

October 21, 1986

The annual business meeting was held at 5:15 P.M. on October 21, 1986 at the 58th Annual Meeting of the Society of Rheology in Tulsa, Oklahoma. The minutes of the last meeting were not available. The treasurer's report was given by Ed Collins and the details are given in the minutes of the meeting of the executive committee. The need to raise membership dues was emphasized. The report was accepted.

The main topic was whether the membership dues should be raised as a result mainly of increases in charges for printing and editing the Journal of Rheology. The present dues of \$20.00 did not cover the costs in 1985 and will not cover those for 1986 or 1987. The original proposal from the executive committee was to raise members' dues to \$35.00 while keeping students' dues at \$20.00 but raising retired members' dues to \$15.00 per year. Discussion followed in which it was recommended that we drop page charges and raise the dues to \$40.00. Art Metzner gave various reasons for dropping page charges, but said it would represent an increase of at least \$5.00 per member in annual dues. The first motion which surfaced was to raise dues to \$35.00 with no special rate for students or retired members. The motion was seconded and approved. However, further discussion followed in which the importance of having lower dues for students was emphasized to attract the future members of the society. However, since dues lower than \$35.00 must somehow be subsidized, it was moved that we replace the old motion with a new one. The regular members' dues would be raised to \$40.00, student and retired members dues to \$25.00 with full privileges. The motion was seconded and approved. A ballot will now be sent in January to the members for final approval of the increase in dues.

The editors' report was given and was the same as that in the minutes of the executive meeting. The editors report was approved.

Ed Collins also gave a report on the future meetings and the details can also be found in the minutes from the executive meeting.

The meeting was formally adjourned in time for members to attend the cocktail hour preceding the banquet.

## MEMORANDUM ON THE JUSTIFICATION FOR INCREASED DUES BEGINNING IN 1988

Membership in the Society of Rheology has always been an outstanding bargain. For the past six (6) years the annual dues have been a low \$20.00. This low price gave all membership benefits, including the six issue per volume of the Journal of Rheology and the monthly Physics Today. We all know how expensive journals are today. How the dues are spent can be broken down into three major categories:

1. AIP fixed costs
2. Journal of Rheology Costs
3. Miscellaneous costs which includes postage, meeting abstracts and other services.

For the past five years, excluding 1985, these costs have been close to or slightly over \$20.00 per member. For 1985 these costs were as follows:

1. \$ 8.80
2. 13.39
3. 7.67
<u>          </u>
\$29.86 TOTAL

Our projected costs for 1986 and beyond will fall between \$30.00 to \$34.00 per member. The reasons for the sudden jump are outlined below.

The major changes lie in costs associated with the Journal, although our fixed AIP costs have increased substantially, going from \$5.30 per member in 1980 to \$8.80 per member in 1985. This is a 66% increase which we expect to continue moving upward. We had been fortunate that our contract with the publisher (Wiley) had not been changed since 1974. Our new contract, which became operative in 1986, is substantially higher and is tied to the number of pages we publish. Our policy in publication has been to have a fast turnaround time in publication and we may also wish to increase the size of the Journal modestly. Other factors coming into play at the same time include changes in the editor's office and loss of the heavy subsidy we enjoyed from Kent State University, increased costs in postage, printing and services in general.

All of this coupled with the decrease in our other sources of income (mainly interest and page charges) require that we raise our dues. Dues are the main source of income for a non-profit organization. Your Treasurer of the past 15 years and the Executive Committees have worked hard to maintain a healthy financial balance sheet and to keep the dues as low as possible.

The need to increase dues was discussed extensively at the Executive Meeting and at the business meeting in Tulsa. The



membership voted to establish two categories of membership with appropriate dues as follows:

Regular Member	\$40.00
Student or Retired Member	\$25.00

The change in dues must be voted on by the membership of the Society and a ballot is enclosed for this purpose.

**THIS IS STILL THE BEST BARGAIN YOU CAN FIND IN A PROFESSIONAL SOCIETY!**

Respectfully submitted,  
Dr. Edward A. Collins  
Treasurer

#### EDITOR'S COMMENTS: DECEMBER, 1986

Comments concerning the **Journal of Rheology** and the **Rheology Bulletin** are considered separately in the following narrative.

##### **Journal of Rheology**

Following the negotiation and acceptance of a new contract with the publisher, John Wiley and Sons, in late 1985, he has been very responsive and helpful in resolving the large backlog of accepted but unpublished manuscripts. Consequently, the December number was issued in two separate parts, A and B, providing a total of 1039 pages for 1985, an unprecedentedly large number. Resolving this backlog required a heroic effort on the part of the publisher and we are grateful for this. However, **not all members received Part B of the December issue, containing page 823-1039.** European members appear to have been especially effected. **If you did not receive this issue for 1985 please advise the editor so he can request Wiley to provide it.**

Many members, and several individuals outside our membership, have responded promptly and with appropriate professional standards to requests for reviews of manuscripts. This support represents the foundation for publication of a journal of high quality and it is also personally gratifying. Your editor will try to maintain requests for reviews to a level of about one per year and will value your continued strong support. Your editor is not motivated to increase the size of the journal unnecessarily but does wish to maintain and, if possible, improve its quality: publication of anything but the best journal in our professional area is simply not good enough. To this end, members are seriously requested to submit their manuscripts (especially the very best ones!) to **Journal of Rheology** in preference to other media. Reviewers and editorial staff alike have worked hard to process manuscripts promptly and we trust this is being reflected in a more rapid flow of manuscripts into publication.

Some comments on costs is appropriate in view of the request for an increase in dues. The renegotiated contract with the publisher has increased the costs to us in a major way, beginning in 1986, as noted in our **Bulletin** one year ago. If this enables us to publish manuscripts more promptly, with consistency, then the dues increase this implies will hopefully prove to be worthwhile in the long run. The fact that most manuscripts are now sent out for review by the editor rather than by members of the Editorial Board has also increased the costs for office and secretarial help very appreciably. The Center for Composite Materials is pleased to be involved in our publications and underwrites most office, telephone and mailing charges. However, the secretarial costs are an obligation of the Society and are higher than before.

##### **Rheology Bulletin**

The January, 1986 issue was mailed on January 21 and had been received by all members, so far as we are aware, before Feb. 1. The Center for Composite Materials has underwritten increased mailing costs to enable the more prompt delivery of the bulletin to foreign and overseas members.

The July 1986 issue was mailed Aug. 5 but not delivered to several members until late that month. Further, at least one member in each of New York State, District of Columbia, South Carolina and Delaware **never** received the summer bulletin. It is difficult to pinpoint the origin of this problem and the editor will appreciate being advised of delays and/or omissions in the future, so that we may iterate toward a solution.

The editor apologizes for the several errors in the July bulletin, which were the cause of annoyance to a number of members. Finally, we should comment on a problem several members report concerning the difficulty of "getting through" to the editor by telephone. The problem arises because the editor and his secretary are located in separate buildings - due to a temporary space problem at Delaware. The problem is to be resolved but probably not until 1988. Please bear with us.

## ANNOUNCEMENTS

### MARKUS REINER CENTENARY

A dinner meeting was held in Israel in December to commemorate the centenary of the birth of this remarkable man and scholar, one of the founders of our Society and of our profession. And those among us who were privileged to know him well believe he would find quiet pleasure in the knowledge that our 1986 Membership Directory still lists him as an active member; he has been continuing to receive our journal and bulletin to this day! Our continued good wishes to you, sir, as you view our earthbound progress from your celestial abode.

#### Xth INTERNATIONAL CONGRESS ON RHEOLOGY 14-20 AUGUST, 1988, SYDNEY, AUSTRALIA

The Xth International Congress on Rheology will be held on the campus of The University of Sydney, 14-20 August, 1988. Hotel and student dormitory accommodation will both be available; pre-and post-congress tours are being planned. 1988 is Australia's Bicentennial year, so the organizing committee will welcome an early response to requests for intentions to attend and/or present a paper. Information about the Congress can be had from the chairman: Professor Roger I. Tanner, Department of Mechanical Engineering, University of Sydney, Sydney, N.S.W. 2006, Australia.

The 1987 INTERNATIONAL MEETING OF THE ADHESION SOCIETY will be held in Williamsburg, VA on Feb. 22-7, 1987. Registration information, a program and information on a short course preceding the meeting are all available from the general chairman, Professor Lawrence T. Drzal, Composite Materials & Structures Center, Michigan State University, East Lansing, MI 48824-1226. Telephone: 517-353-7759.

The 3rd Annual Meeting of the Polymer Processing Society (International) will be held at the University of Stuttgart, West Germany, April 7-10, 1987. For further information, please contact the Chairman of the Organizing Committee: Professor Dr.-Ing. H.-G. Fritz, Institut für Kunststofftechnologie, University of Stuttgart, D-7000, Boblinger Str. 70, Stuttgart 1, West Germany, Telephone: 49-711-6465-317, Telex: 0721-703 UNIS.

"RHEOLOGY OF DISPERSIONS AND PARTICULATE SOLIDS", a joint meeting of the British Society of Rheology and The Colloid and Interface Science Group will be held at Bath University, U.K., on April 9 and 10, 1987. Contact: Dr. J. J. Benbow, Department of Chemical Engineering, University of Birmingham, P.O. Box 363, Birmingham B15 2TT, U.K. Telephone: 021-472-1301, Ext. 2789.

Several sessions on RHEOLOGY, POLYMER SCIENCE AND ENGINEERING and on POLYMER COMPOSITES will be included in the 37th Canadian Chemical Engineering Conference, Montreal, May 18-22, 1987. Contact Professor P. Lafleur, Ecole Polytechnique of Montreal, Department of Chemical Engineering, P.O. Box 6079, Sta. "A", Montreal, Que., H3C 3A7.

The 31st IUPAC MACROMOLECULAR SYMPOSIUM will be held June 30-July 4, 1987. Contact Dr. Burkart Philipp, Technische Hochschule "Carl Schorlemmer" Leuna-Merseburg, Otto-Nuschke-Strasse, DDR - 4200 Merseburg, German Democratic Republic.

AN IUPAC INTERNATIONAL SYMPOSIUM ON POLYMERS FOR ADVANCED TECHNOLOGIES will be held August 16-21, 1987 in Jerusalem. The Symposium organizers are Orta, Ltd. 2 Kaufman Street, P.O. Box 50432, Tel Aviv, Israel 61500 Telephone: 03-664825

AN INTERNATIONAL SYMPOSIUM ON POLYMER MATERIALS will be held in San Sebastian, Aug 30-Sept 4, 1987. Contact: Facultad de Ciencias Químicas, Universidad del País Vasco, Apartado 1072, San Sebastian, Spain.

A conference entitled "ENTRANCE AND EXIT EFFECTS: PRACTICAL, THEORETICAL AND COMPUTATIONAL ASPECTS OF FLOW INTO AND OUT OF DUCTS", organized by the Belgian Group of Rheology and the British Society of Rheology, will be held at the University of Kent in Canterbury on Sept. 2 and 3,



to be followed by the annual British conference on Sept. 4, 1987. Offers of papers must be made substantially immediately to either: Dr. J. L. Leblanc, Monsanto Europe S.A., Avenue de Tervuren 270-272, Letter Box No. 1, B-1150 Brussels, Belgium or Dr. C.J.S. Petrie, Department of Engineering Mathematics, The University, Newcastle upon Tyne, NE1 7RU, United Kingdom.

The second Chinese National Congress on Rheology will be held in November, 1987 in Chengdu, Sichuan Province. Contact: Professor Han Shifang, Institute of Mathematical Sciences, Chengdu Branch, Academia Sinica, Chengdu, P.R. China.

The seventh international conference of the Plastics and Rubber Institute on DEFORMATION, YIELD AND FRACTURE OF POLYMERS will be held at Churchill College, University of Cambridge, U.K., April 11-14, 1988. Contact Mr. M. D. Shuttleworth, The Plastics and Rubber Institute, 11 Hobart Place, London SW1W OHL, U.K., Telephone: 01-245-9555

AN INTERNATIONAL CONFERENCE ON COMPOSITE INTERFACES will be held in Cleveland June 13-17, 1988. Abstracts should be submitted to Professor H. Ishida, Department of Macromolecular Science, Case-Western Reserve University, 10900 Euclid Avenue, Cleveland, Ohio 44106-1712.

The 17th INTERNATIONAL CONGRESS OF THEORETICAL AND APPLIED MECHANICS will be held in Grenoble, France, Aug. 21-7, 1988. Information may be obtained from, and abstracts submitted to, Dr. R. M. Christensen, Lawrence Livermore Laboratory, P.O. Box 808 L-338, Livermore, CA 94550 for U.S. authors. Others contact Prof. D. Caillerie, Institut de Mecanique de Grenoble, Domain Universitaire—B. P. 68, 38402 Saint Martin D'Heres Cedex, France.

### Application for Membership in the SOCIETY OF RHEOLOGY

I hereby desire to apply for membership in THE SOCIETY OF RHEOLOGY dating from  
January 19 \_\_\_\_\_

Name \_\_\_\_\_  
Please print)

Mail Address \_\_\_\_\_  
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Position \_\_\_\_\_

Please indicate in the boxes provided below the code letter from the list to the right, which best describes your areas of interest in order of decreasing importance.

- PRIMARY
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INTEREST AREA	CODE
Biological Materials .....	A
Foods and Natural Products .....	B
Inorganic Materials .....	C
Oils and Lubricants .....	D
Soils .....	E
Synthetic Polymers .....	F
Fluids (Including Solutions) .....	G
Solids .....	H
Suspension and Particulate Systems .....	J
Engineering .....	K
Experimental Techniques .....	L
Mechanics .....	M
Phenomenology .....	N
All of the above .....	Y
None of the above .....	Z

I understand that my regular member's subscription to the **Journal of Rheology** is for my personal use, and not for library use.

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Signature \_\_\_\_\_  
Date

Enclose remittance of \$20 for Regular Annual Dues or \$200 for Sustaining Annual Dues (1987) and mail to:

THE SOCIETY OF RHEOLOGY  
c/o American Institute of Physics  
335 East 45th Street  
New York, New York 10017



AMERICAN INSTITUTE OF PHYSICS INCORPORATED  
SOCIETY OF RHEOLOGY  
Statement of Receipts and Disbursements  
Year Ended December 31, 1985

<b>Balance in Account Dec. 31, 1984</b>		\$79,594.07
Receipts Jan. 1 - Dec. 31, 1985*		
Dues Collected - 1985	\$ 8,139.45	
- 1986	17,128.02	
- 1987	40.00	
Interest	4,016.32	
Page Charges	5,520.00	
Short Course #12 and #13	10,435.00	
Meeting Receipts - VPI & Ann Arbor	5,000.00	
Sales Mailing List	174.53	50,453.32
<b>Total Receipts</b>		<b>\$130,047.39</b>
<b>Disbursements (January 1 - December 31, 1985)</b>		
Charge for Dues Billing and Collection (\$2.00 per Item Billed-Annual Charge)	\$ 2,742.00	
Charge for Preparation and Maintenance of Member Record File (\$2.40 per Member Record-Annual Charge)	3,011.00	
Financial Handling Charge-Year 1985 (5/8 of 1% of Business Handled)	277.20	
Member Society Dues-Year 1985 (\$2. per Member per Year)	2,400.00	
Renewal Billing:		
Postage	\$ 643.87	
Printing Letters	45.20	
Envelopes and Invoices	278.71	
		967.78
The Journal of Rheology:		
Subscription Expense - Vol. 27 #1-6	8,688.14	
Subscription Expense - Vol. 28 #1-6	10,843.56	
Printing Mailing Labels	36.00	
Editorial Charges	6,312.57	
Wiley/Mack Mailing	215.24	
		26,095.51
1985 Nominations Mailing		159.30
Ballot Mailing		503.24
Mailing for 57th Annual Meeting:		
Postage	1,032.52	
Printing Letters and Labels	188.62	
Abstract/Bulletin VPI and Ann Arbor Meeting	4,625.00	
Postage	243.00	
Short Course VPI #12	5,514.09	
Short Course Ann Arbor #13	1,992.99	
56th Annual Meeting, VPI Center	3,178.42	
57th Annual Meeting Ann Arbor	811.44	
		17,591.17
Other:		
Administrative Services	2,100.00	
Presidential/Treasurer Discretionary	826.84	
UPS, and Federal Express and Postage	299.00	
Xerox Charges	33.65	
Letterhead and Office Supplies	162.28	
Membership Lists	45.08	
Liability Insurance	102.00	
Miscellaneous	9.30	
		\$57,275.35
Balance in Account-December 31, 1985		\$72,772.04
	Final Variance	\$ 289.27
*Adjusted to include 1984 Final Receipts and Disbursements Variance		\$72,482.77

May 15, 1986  
Edward A. Collins  
Treasurer



## 1987 TREASURER'S ESTIMATE

Estimate Balance in Account January 1, 1987

\$ 60,000

### RECEIPTS

Dues 1986, 1987, 1988 (\$30 for 1988)	\$38,000	
Interest	2,500	
Income Short Course	5,000	
Page Charges J of Rheology	4,000	
Annual Meeting	<u>2,500</u>	
		<u>52,000</u>
		<u>\$112,000</u>

### DISBURSEMENTS

Charges for Billing & Collection @ 2.00	\$ 2,800	
Charges for Preparation & Maintenance File @ \$2.40	3,100	
Financial Handling AIP	500	
Member Society Dues Year 1986	2,600	
J of Rheology	20,000	
Editorial Expenses	7,000	
Subscription Expenses	2,000	
Bulletins & Abstracts (2 Meetings)	6,200	
Administrative AIP	2,100	
President's Discretionary Fund	500	
Treasurer's Discretionary Fund	500	
Society of Presidents Dues	100	
Miscellaneous Postage/UPS/Award	4,700	
Expenses Short Course	4,000	
Secretarial Services	1,500	
Liability Insurance	<u>120</u>	
		<u>57,720</u>

Estimated Balance December 31, 1987

\$54,280

10-15-86  
as amended  
Dec. 1, 1986

Dr. Edward A. Collins  
Treasurer