

# RHEOLOGY BULLETIN

Publication of the Society of Rheology

Volume 23, No. 1

Spring, 1954

## MEETING NEWS

The past Annual Fall Meeting, 1953, was one of the biggest and most successful meetings our Society has held. Twenty-four papers were presented during 5 half-day sessions, at which nearly 150 people attended. There was plenty of discussion, and a stimulating social evening highlighted by the presentation of the Bingham Medal to Dr. J. D. Ferry and by the latter's acceptance speech.

Since then, the next Annual Fall Meeting has been brought into perspective. It will be held at the National Bureau of Standards, Washington, D. C. on November 3-5, 1954. As will be seen below, the Program Committee has already given considerable time to insure another worthwhile meeting, in this 25th year after Bingham's foundation of our Society. Past efforts to widen the circle of active participants are being continued, aiming to include speakers from all walks of industry and university, and topics from all the fields of technology, engineering and natural sciences.

## NEWS FROM THE PROGRAM COMMITTEE

The first full meeting of the Program Committee was held recently with a view to choosing specific topics for the Fall Meeting, as well as to implement the general desire to obtain contributed papers on a variety of subjects of the same breadth as that of the interests of our membership.

The meeting this Fall is anticipated to include five half-day sessions. Four papers per session are visualized in order to allow sufficient time for discussion. The abstracts for the papers will be due on August 15. It will be necessary to adhere strictly to this deadline since we hope to obtain publicity for the meeting in the October issue of PHYSICS TODAY. Again, it is urged that authors should submit their papers in full several weeks ahead of the meeting. This will greatly facilitate their subsequent publication in the Rheology Issue which, again, was unduly delayed this year.

With reference to special topics, a symposium on the practical aspects of dynamic measurements, originally planned for this meeting, was postponed. Three other topics are under discussion, namely, time dependent mechanical properties, the molecular theory of viscosity and plasticity, and rheological properties in transition regions. The final decision will to some extent depend on the response of the prospective contributors.

As for the first topic, papers would be desirable discussing the fact that all matter exhibits viscous as well as elastic properties concurrently but that in many cases one has to go to extremes of time scale to show their existence. Work with transient methods, appropriate to demonstrate the viscous properties, would be equally welcome as dynamic measurements capable of describing viscous and elastic contributions in the high frequency range. A paper dealing with the analogy to the response of electrical networks would be desirable as would be others dealing with the derivation of distribution functions of relaxation times or the calculation of time dependent properties therefrom. Efforts will be made to obtain papers from the field of textiles, high polymers, and non-Newtonian liquids.

As for the molecular theories, appreciable progress has recently been made with simple liquids and with respect to the shear dependence of high polymeric solutions. The theory of deformation of metals, too, has made new strides. It will be endeavored to entice proponents of the different schools to give either special or survey lectures. Further, it was contemplated to approach workers in a number of laboratories who had recently conducted studies on rheological properties in the transition region; this might include the flow properties of thixotropic materials.

Special efforts will be made to broaden the scope of the meetings; since only a limited number of people can be approached, would anybody who believes he will have a suitable paper ready by mid-August kindly approach the Program Committee, for the attention of its Chairman, Dr. Thor Smith, Hercules Experiment Station, Wilmington 99, Delaware. To give an indication of acceptable topics, the Committee considered papers on the rheological properties of gels, on fibers, relation to molecular structure, differences between extrusion and rotational flow, paints and inks, effects of pressure, impact strength, irreversible thermodynamics, theory of instruments, protective coatings.

## MINUTES

### Business Meeting of the Society of Rheology

October 29th, 1953  
HOTEL NEW YORKER  
New York City, New York

The meeting was called to order by President Spencer at 4.35 P.M.

It was moved and carried that the Minutes of the 1952 Business Meeting be accepted as printed in the Rheology Bulletin (Spring, 1953).

10/29/53  
4/15

# RHEOLOGY BULLETIN

F. R. EIRICH, EDITOR

The Polytechnic Institute

Brooklyn 1, N. Y.

The Secretary-Treasurer submitted his interim report. The financial condition of the Society was reported on as of October 1, 1953 and the tentative budget for 1954 submitted (complete reports on file with the Secretary-Treasurer's records). The final statement has since been received and is shown below.

## FINANCIAL STATEMENT FOR 1953

### GENERAL FUNDS

Cash on hand, January 1, 1953 \$1624.58

#### INCOME

Dues, 4th Quarter, 1952	\$1153.64	
Dues, 1st Quarter, 1953	365.60	
Dues, 2nd Quarter, 1953	153.75	
Dues, 3rd Quarter, 1953	41.00	
Registration at Ann. Meeting	171.00	
Total	\$1884.99	\$1884.99
Total cash resources		\$3509.57

### DISBURSEMENTS

AIP assessments for 1953 (10%)	151.00	
AIP member service charge	95.00	
Publication cost, J. Appl. Phys.	482.50	
Rheology Bulletin (2 issues)	200.34	
Printing and mimeographing	67.77	
Secretary's expenses (Misc.)	43.00	
Membership in foreign rheology societies	6.00	
Bingham Medal engraving	6.19	
Meeting expenses	133.72	
Total disbursements	\$1185.52	\$1185.52
Balance		\$2324.05

Surplus for 1953: \$699.47

Appropriated but not spent by January 1, 1954

Distribution of membership lists \$25.00

### SPECIAL FUNDS

#### BINGHAM FUND

U. S. Gov't Series G Bonds (on deposit with AIP)	\$700.00	
Savings account	102.70	
Interest on bonds for 1953	17.30	
Total in fund		\$820.00

#### RHEOLOGICAL MEMOIR FUND

Balance of January 1, 1953	\$78.21	
Sale of surplus copies	2.00	
Total in fund		\$80.21

Total cash to be turned over to new treasurer \$2524.46

### BUDGET FOR 1954

Cash at end of 1953	\$2324.05	
Estimated income	1650.00	
Total cash resources		\$3974.05

### ESTIMATED EXPENSES

AIP assessment and service charge	\$ 280.00	
Publication costs (J. Appl. Phys.)	500.00	
Membership activities	150.00	
Rheology Bulletin (3 issues)	300.00	
Meeting expenses (above reg. fees)	60.00	
Printing and mimeographing	120.00	
Mailing services and Secretary's expenses	70.00	
Total estimated expenses		\$1480.00

Estimated surplus \$170.00

It was moved and carried that the Secretary-Treasurer's interim report and the Budget for 1954 be accepted and filed.

Important items considered at the Executive Committee meeting were reviewed (for details see Minutes of Executive Committee meeting). The Secretary presented and explained the proposed amendment to the Constitution of the American Institute of Physics: "Officers need not be members of the Board of Governors". After some discussion it was moved and carried that this amendment be approved by the Society of Rheology.

Membership activities were reviewed briefly. Membership stands at an all time high of 413. It was moved and carried that a vote of thanks be extended to Mr. F. D. Dexter and members of his committee for their achievements.

Dr. H. Leaderman reported the results of the balloting and the following were declared as the elected officers of the Society for 1954-55:

W. H. MARKWOOD, JR.	President
F. D. DEXTER	First Vice-President
J. H. DILLON	Second Vice-President
F. R. EIRICH	Editor
W. R. WILLETS	Secretary-Treasurer

President Markwood took over the chair from R. S. Spencer.

Dr. Spencer reported on the temporary committee set up at the International Congress in Oxford designed to further the Science of Rheology and to organize future Congresses (for details see Minutes of Executive Committee Meeting).

It was moved and carried that the Society of Rheology join the "International Committee on Rheology" and appoint a permanent representative to this Committee.

Dr. H. Leaderman reported on the activities of the Committee on Nomenclature. A full report on nomenclature for linear viscosity is expected to be available at the next Annual Meeting.

President Markwood announced that the 1954 Annual Meeting will be held at the Bureau of Standards in Washington, D C, tentatively on November 3-5, 1954

The meeting adjourned at 5:13 P.M.

Submitted by:  
G. J. Dienes  
Secretary-Treasurer

Items of Interest From the Minutes of the  
Executive Committee Meeting of the  
Society of Rheology

October 28, 1953

BUDGET FOR 1954

There was considerable discussion of the budget since the Society finds itself in the fortunate position of operating at a high surplus due to decreased publication costs. Since contributions to the support of AIP will almost certainly remain at about current level it was decided that some of our services could be expanded. To this end the appropriation for the Bulletin was increased from \$170.00 to \$300.00 and the appropriation for membership activities from \$100.00 to \$150.00. The estimated surplus for 1954 becomes \$170.00. This was considered a reasonable figure since the Society's reserve funds should be built up to about \$3000.00 over the next 5 to 10 years for safe operation.

It was also recommended that, because of our increasing funds, the incoming Treasurer and President be bonded.

AMERICAN INSTITUTE OF PHYSICS

The considered opinion at AIP is that the Societies' contributions to support of AIP will remain indefinitely at essentially current levels. It was considered safe for the Society of Rheology to plan on expanding its services without holding money in reserve for increased AIP assessments.

It was agreed that closer cooperation with Physics Today is highly desirable. The Publicity Committee and the Editor were asked to work out ways and means of getting material to Physics Today.

1954 MEETING

It was decided to hold the 1954 meeting at the National Bureau of Standards in Washington, D. C. The tentative dates are November 3-5, 1954.

It was also recommended that the Society sponsor a joint symposium with ASTM in 1955. This symposium, however, is to be completely independent of our own Annual Meeting.

COMMITTEES

Drs. W. F. Fair and W. H. Markwood, as representatives on ISO Committee TC66, will follow up Dr. Bondi's suggestion for establishing n-hexadecane as a secondary standard of viscosity.

Dr. H. Leaderman reported on the activities of the Committee on Nomenclature. Revision of an earlier report on nomenclature for linear viscoelastic behavior is in progress and will be circulated for further comments. It is planned to present a full report at the next Annual Meeting.

INTERNATIONAL RHEOLOGICAL  
ORGANIZATION

A small temporary Committee was established at the International Congress in Oxford for the purpose of:

- a) to be a permanent body for organizing future International Congresses on Rheology.
- b) to encourage new national organizations for the study of Rheology.
- c) to act as coordinating body in other international cooperations in the field of Rheology.

Further it was decided:

- a) that Dr. R. N. J. Saal should act as temporary secretary
- b) that no chairman would be nominated before the members of the committee had been definitely nominated by the national organizations
- c) to invite the Japan Rheological Society to nominate a member
- d) to invite as member from countries without national organizations: Prof. B. Gross (Brazil), Prof. A. Peterlin (Yugoslavia), Prof. M. Reiner (Israel)
- e) to invite rheologists from Scandinavia and from India to nominate a member.

The name of the Committee was decided to be "International Committee on Rheology".

Our representative on the temporary committee is the past President R. S. Spencer.

The Executive Committee declared itself in favor of such an international committee and decided to recommend to the Business Meeting that The Society of Rheology appoint a permanent member to the "International Committee on Rheology" (appointment to be made by the President).

SOCIETY OF RHEOLOGY

OFFICERS:

W. H. Markwood, Jr., *President*  
F. D. Dexter, *1st Vice-President*  
J. H. Dillon, *2nd Vice-President*  
W. R. Willets, *Secretary-Treasurer*  
F. R. Eirich, *Editor*  
R. S. Spencer, *Member Executive Committee*

Officers, committee members, and representatives of the Society are as follows:

## COMMITTEES:

### BINGHAM MEDAL AWARD COMMITTEE

J. H. Elliott, *Chairman*  
R. S. Rivlin  
C. R. Bloomquist  
A. A. Bondi  
Ruth N. Weltmann

### PROGRAM COMMITTEE

Thor L. Smith, *Chairman*  
J. D. Tordella  
W. G. Hammerle  
J. T. Bergen

### RHEOLOGICAL NOMENCLATURE

H. Leaderman, *Chairman*  
R. S. Marvin

### SECOND VISCOSITY STANDARD

A. B. Bestul, *Chairman*

### MEMBERSHIP COMMITTEE

J. H. Dillon, *Chairman*  
Others to be appointed.

### PUBLICITY

F. D. Dexter

### 1954 MEETING ARRANGEMENTS, Washington, D. C.

R. S. Marvin

### PUBLICITY COMMITTEE

F. R. Eirich  
F. D. Dexter  
G. J. Dienes

## REPRESENTATIVES:

AIP GOVERNING BOARD: W. H. Markwood, Jr.  
ASST. SECRETARY FOR WEST COAST: A. A. Bondi  
AAAS: R. S. Spencer  
NAT. ASSN. CORROSION ENGINEERS: W. F. Fair, Jr.  
ASA COMMITTEE 259: R. B. Dow  
AIP COMMITTEE ON MEMBER ASSOCIATIONS  
CONTRIBUTION TO AIP: G. J. Dienes  
AIP COMMITTEE FOR 1956 JOINT MEETING:  
W. R. Willets

W. H. Markwood, Jr., *President*  
Society of Rheology

## FIFTH COATING CONFERENCE TECHNICAL ASSOCIATION OF THE PULP AND PAPER INDUSTRY

Poland Spring House, Poland Spring, Maine

May 24-26, 1954

The TAPPI Coating Committee has announced that the Fifth Annual Coating Conference will be held May 24-26, 1954 at the Poland Spring House, Poland Spring, Maine. This location was selected because of proximity to leading New England paper coating mills and the availability of adequate space for exhibitors.

Important features of the meeting will be a symposium on laboratory and pilot development techniques for paper coaters, and mill visits to leading plants in the vicinity. An outstanding program of papers on coating technology has been arranged.

An interesting exhibit of equipment and instruments pertaining to operation control, testing and research in the paper coating field is being planned. It is expected that manufacturers will exhibit viscometers, flow meters, and other rheological instruments used by the industry. All interested in participating are requested to get in touch with W. R. Willets, Titanium Pigment Corporation, 99 Hudson Street, New York 13, N. Y.

## THE PHYSICS OF PARTICLE SIZE ANALYSIS THE STUDY OF FAST REACTIONS

Our members will be interested to learn about two international meetings which are going to take place in the near future.

A conference on the physics of particle size analysis has been arranged by the British Institute of Physics on April 6-8 in Nottingham. The sessions will include such topics as: Relative Motion of Particles and Size Separation, Molecular Phenomena, Particle Shape Factors, Theory and Instruments for Automatized Counting and Sizing of Particles. Abstracts may be available after the meeting and inquiries should be directed to this Editor.

A general discussion on the Study of Fast Reactions will be held in Birmingham on April 7-9 as arranged by the Faraday Society. The program will include gas and solution reactions with special attention to fast mixing, to rapid flow apparatus, use of electronic equipment, flash techniques, use of spectra, etc. Advance proofs can be obtained from the Secretary of the Faraday Society and the proceedings will, as usual, be published by the Faraday Society approximately eight months after the meeting.

## GERMAN RHEOLOGICAL SOCIETY FOURTH RHEOLOGY MEETING

Berlin, May 5-8, 1954

This will be a Memorial Meeting to celebrate the 75th Birthday of H. Freundlich, the Pioneer of Colloid Chemistry and Discoverer of Thixotropy and Rheopexy. At the same time it is planned to remember the founding of the first Rheological Society by Bingham in this country.

The following speakers are expected to attend:

V. Bertalanffy (Ottawa); Buzágh (Budapest); Edelman (Berlin); Eggleton (Edinburgh); Eisenschitz (London); Erdmann-Jessnitzer (Berlin); Feucht-Schmidt (Berlin); Grodde (Weitze, Krs. Celle); Grodzinski (London); Hastewell (Edinburgh); Heimann (Hannover); Hess-Winterberg (Hannover); Joly (Paris); Kubát (Stockholm); Milne (Glasgow); Peterlin (Laibach); Reitstotter (München); Rühlmann (Berlin); Schwarzl (Delft); Ubbelohde (Düsseldorf); Umstatter-Kirschke (Berlin); Weiss (Paris); Zeidler (Berlin).