

BULLETIN



BRITISH SOCIETY OF RHEOLOGY

1982, Vol. 25, No. 4

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Hon. Editor:

Dr. H. A. BARNES,
Unilever Research,
Port Sunlight Laboratory,
Bebington, Wirral,
Merseyside, L63 3JW

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[illegible]

FOREWORD

As the new editor, I feel that I am taking over at an exciting time in the history of Rheology. The advent of new rheometers, new insights into the relationship between Rheology and microstructure and the great advances made in simulating flows via numerical analysis on ever more powerful computers — all these will take Rheology forward at a great pace. The Bulletin will seek whenever possible to bring these things to the attention of the members of the Society.

OFFICERS AND MEMBERS OF COUNCIL

President: MR. J. F. HUTTON, Thornton Research Centre, P.O. Box No. 1, Chester, CH1 3SH.

Secretary: DR. J. J. BENBOW, Department of Chemical Engineering, University of Birmingham, P.O. Box 363, Birmingham B15 2TT. (Telephone: 021-472-1301, ext. 3548)

Treasurer: MR. T. A. STRIVENS, Physics Section, Research and Development Department, ICI (Paints Division) Ltd., Wexham Road, Slough, Berkshire SL2 5DS.

Membership Secretary: DR. D. C-H. CHENG, Warren Spring Laboratory, Stevenage, Hertfordshire SG1 2BX.

Abstracts Editor: DR. D. R. OLIVER, Department of Chemical Engineering, University of Birmingham, P.O. Box 363, Birmingham B15 2TT.

Bulletin Editor: DR. H. A. BARNES, Unilever Research, Port Sunlight Laboratory, Bebington, Wirral, Merseyside, L63 3JW.

Ordinary Members:

DR. S. T. E. ALDHOUSE, B.P. Chemicals, Research and Development Department, Sully, South Glamorgan CF6 2YU.

DR. P. C. ANDERSON, B.P. Research Centre, Chertsey Road, Sunbury-on-Thames, Middlesex TW16 7LN.

MR. A. EVANS, Department of Surgery, Royal Victoria Infirmary, Newcastle upon Tyne.

DR. T. E. R. JONES, School of Mathematical Sciences, Plymouth Polytechnic, Plymouth.

DR. M. R. MACKLEY, Department of Chemical Engineering, University of Cambridge, Pembroke Street, Cambridge.

DR. C. J. S. PETRIE, Department of Engineering Mathematics, University of Newcastle upon Tyne, Newcastle upon Tyne NE1 7RU.

MINUTES OF THE 42nd ANNUAL GENERAL MEETING

Minutes of the 42nd Annual General Meeting of the British Society of Rheology, held in the Lecture Theatre, Trinity Hall, Cambridge, on 23rd September, 1982, beginning at 17.30.

The President took the chair. Thirty members were present and one apology for absence had been received.

1. **The Minutes of the 41st Annual General Meeting**, held in Newcastle upon Tyne, on 9th September, 1981, had been published in the Bulletin (Volume 24, number 4, page 61-67). The President signed these as a correct record of the meeting.

2. There were no matters arising from the Minutes.

3. As **Chairman**, Professor Pearson reported that he had received information that Professor A. I. Leonov had been dismissed from his post at the Institute of Mechanical Problems of the Academy of Sciences of the USSR. Detailed information, which is believed to be reliable, is contained in an open letter from P. G. Drazin, Professor of Applied Mathematics at the University of Bristol. Professor Pearson read to the meeting the text of the letter he had sent to the Director of the Institute for Mechanical Problems. (Copies of these letters are attached to these minutes.) No reply had been received from Moscow.

Some concern was expressed that this action could be regarded as political, and therefore as inappropriate for the Society as such and also as likely to imperil the Society's charitable status. (See minutes of the 38th and 39th Annual General Meetings — Bulletin, 21(4), 54-55 (1978) and 22(4), 69 (1979) as well as the article "Charities and Political Action" in the Bulletin, 22(1), 10-12.) It was suggested that there was a clear difference between the proposal made in 1978 regarding failure of a government to implement the Helsinki agreement on human rights and action in support of a particular individual rheologist. It was clear from the detailed legal advice (on which the Bulletin article was based) that had Professor Leonov been a member of the Society there would be no doubt that action was permissible. However he was not a member and there was some room for doubt.

Three proposals were made to the meeting, firstly that Council be requested to elect Professor Leonov to honorary membership under rule 3(d) (as a "person who has attained distinction through scientific attainment"), secondly that the Society take no further action (following the letter sent by the President), and thirdly that the Society should seek to offer some financial assistance to Professor Leonov.

The third proposal was put to a vote and voting was 12 for, 12 against with six abstentions. In view of this split the President ruled that no action should be taken. The first proposal was reiterated, and it was argued that to offer honorary membership in response to the

dismissal of Professor Leonov was quite clearly a political act. This view was not accepted by all members, and on a vote the proposal was carried by a large majority, and Council was therefore requested to elect Professor Leonov to honorary membership.

It was suggested that those who wished to take further action could do so individually or collectively but not as the British Society of Rheology, though they might advertise in the Bulletin.

Further to the above, the Secretary reported that Professor Leonov was to be invited to give a lecture at the IXth International Congress. The Dutch delegate to the International Committee on Rheology had enquired about possible action in support of Leonov, and the Secretary (as secretary of the committee of European delegates and not as an official of the British Society of Rheology) would be informing representatives of other societies of the situation.

4. **The Treasurer** presented the audited Balance Sheet and Revenue Account for the year ending 30th June, 1982 (attached to these minutes). In explaining these he stated that the entry under sundry debtors includes the cheque from Pergamon for Rheology Abstracts which arrived after 30th June. The subscription income had risen from £1,401 to £2,720 with the increase from £2 to £5. The item "conference travel" referred to a grant towards travelling expenses of a student attending the Conference of European Rheologists in Graz. The excess of income over expenditure is about 15% of the Society's assets and so is not much more than the rate of inflation.

After correcting "*Less: Excess of Income over Expenditure*" to "*Add: Excess of Income over Expenditure*" on the Balance Sheet, the report and accounts were accepted nem. con. Alfred Simmons & Co. were reappointed auditors at a fee not exceeding £100.

5. **The Membership Secretary** presented his report (attached to these minutes). There were no questions.

6. In the absence of the **Bulletin Editor** the President stated that Council had been kept informed of the Bulletin Editor's actions and over the year the cost of the Bulletin had been constantly scrutinised. It was urged, from the floor, that Council take action to cut these costs.

7. **The Editor of Rheology Abstracts** apologised for the late arrival of volume 25 number 2 which had been due largely to delays at the printers. Number 3 had been on time and Pergamon had been urged to ensure that undue delays were avoided. Pergamon propose to offer the Editor a section of abstracts from U.S. patents for inclusion. The small changes in format for volume 25 had been made after discussion with members of Council (notably the President) and were thought to have improved the readability of Rheology Abstracts.

8. The **Secretary** had circulated a summarised report to the meeting and highlighted matters relating to relationships with other Societies, both in planning and organisation of conferences and in the formation of new groups. (A fuller report is attached to these minutes.) The meeting agreed that he should write expressing sympathy to the Groupe Francais de Rheologie, who had announced the death of their founding President, Professor Jean Mandel.

9. **Election of Officers and Council.** Ballot papers were given to members with nominations received before the meeting. There being no other nominations the officers were elected unopposed. There were seven nominations for the six other places on Council so a ballot was held. Drs. Grossman and Shahidullah acted as tellers and six members listed below were elected.

Council for 1982-83 consists of:

President: J. F. Hutton (1982-84)

Secretary: J. J. Benbow

Treasurer: T. A. Strivens

Membership Secretary: D. C.-H. Cheng

Editor (Bulletin): H. A. Barnes

Editor (Abstracts): D. R. Oliver

S. T. E. Aldhouse

P. C. Anderson

A. Evans

T. E. R. Jones

M. R. Mackley

C. J. S. Petrie

10. The meeting recorded its appreciation of the work of Council and the Officers during the past year. Dr. Oliver proposed a vote of thanks to Professor Pearson for his presidency, noting in particular his chairmanship of meetings, his activity internationally and his gallantry at Naples (ss Bulletin, 23(4), 57 (1980)). Mr. Hutton proposed a vote of thanks to Dr. Petrie for his service as Secretary over the past four years, continuing the Society's tradition of remarkably good secretaries. Particular contributions which struck Mr. Hutton had been in briefing Council on matters for discussion, and in European collaboration. Both votes were carried with applause.

The meeting closed at 18.30.

Minutes submitted by C. J. S. Petrie.

APPENDIX TO MINUTES
PROFESSORS DRAZIN AND PEARSON'S LETTERS

School of Mathematics
University of Bristol
University Walk
Bristol, BS8 1TP
England

To whom it may concern

ARKADY I. LEONOV

Professor Leonov is a Soviet scientist with an international reputation for excellent research in fluid mechanics. On 18th February, 1982, he was dismissed from his job at the Institute of Mechanical Problems, Academy of Sciences of the USSR, on the grounds of low productivity.

It is difficult to accept these grounds. He has a Ph.D. and a D.Sc. Since 1962 he has written at least 35 papers (some jointly) in reputable journals. These are mostly or entirely substantial mathematical papers, not merely notes or verbal descriptions. They are on viscous flow, rheology, and internal gravity waves. Those which I can find, read and understand, are of high quality. I believe that he has written more papers and also a book on internal gravity waves. If he has been justly dismissed for low productivity, then few employees of the Institute of the Academy of Sciences should keep their jobs.

I believe that Mrs. Leonov has been dismissed from her job. I do not know the grounds for her dismissal. She is now ill.

In fact the Leonovs applied in 1978 to emigrate to Israel. Their application has been denied on the grounds of his secret work. It seems that he was taken off secret work in 1973. If, however, he is doing secret work in addition to his other research, then he is extraordinarily productive.

The Soviet authorities have evidently intercepted his letters from Britain, in violation of the rules of the International Postal Union, as well, I suppose, as of Soviet law. Leonov, his wife and his daughter, have been deprived of their means of support, of their place in Soviet society, and of the ability to leave the Soviet Union. This is a disgrace. It seems a fair deduction that they are being punished for their request to emigrate.

I beg you to do anything you can, even a little, to help them. In particular, please protest to

Academician A. Yu Ishlinski
Institute of Mechanical Problems
Moscow 117526
Prospekt Vernadskogo 101
U.S.S.R.

who, as Director of the Institute, is, willingly or unwillingly, responsible for the dismissal of Leonov. Your letter may protect Leonov, or others, from further persecution.

If you think that I may be able to help you to help the Leonovs in any way, please contact me.

PROFESSOR P. G. DRAZIN

20th May, 1982

Academician A. Yu Ishlinski
Institute of Mechanical Problems
Moscow 117526
Prospekt Vernadskogo 101
U.S.S.R.

Dear Academician Ishlinski,

I have recently been informed that Dr. Leonov has been dismissed from his post at the Institute of Mechanical Problems, and I write to say how surprised and upset the council of this Society, and I personally, are to have heard this news. We hear also that he and his family are unable to emigrate, which they wish to do, and are almost without means of support. If true, this we feel is a disgrace in a country so committed to science and to those of you wishing to be part of the international fraternity of scientists.

Leonov's work is well known to me. We have corresponded on the subject of polymer rheology and I have given pride of place to his theoretical model for polymer melts in a book I am just completing on the mechanics of polymer processing. Only last month, I was discussing the relevance of his model with a distinguished rheologist in Australia when on a visit to Sydney, and we noted the growing awareness all over the world of his contributions. A man with such work behind him would be highly valued in all the institutions I have worked in. It is inconceivable that he has deserved such a severe fate in the middle of his working life.

We urge you to reconsider his case and to do all in your power to reinstate Dr. Leonov to a position in which he can continue to contribute to the one truly international activity that transcends national politics and animosities.

Yours sincerely,

J. R. A. PEARSON

Professor of Chemical Engineering
President, British Society of Rheology

REPORT OF THE SECRETARY, 1981 - 1982

The major activities of this Society, through its elected representatives, are the organisation of conferences and the compilation and publication of Rheology Abstracts and the Bulletin. The two Editors will report on the publications and may, with the Treasurer comment on the fact that the first two generally make money for the Society while the third (with postage) costs nearly as much per head as the new subscription brings in. This leaves the Secretary to report on conferences which is easily done — the meeting at Newcastle in September 1981 was mentioned in the Secretary's report to the previous Annual General Meeting, and a report appears in the same issue of the Bulletin (volume 24 number 4). In spite of the small numbers the meeting does appear to have been a success and it even made a small profit. A special issue of the Journal of Non-Newtonian Fluid Mechanics (volume 11 parts 3 and 4) devoted to Stretching Flows is due to be published in November 1982 and will contain six papers from the Newcastle conference as well as three other papers on the same topic.

The present meeting is the only other one in which the Society has been actively involved this year. Council had decided not to organise a spring meeting since there was the international conference on Deformation, Yield and Fracture of Polymers at Cambridge in March and the first conference of European Rheologists at Graz in April. The Society has a representative on the organising committee of the former, but it seems that rheologists with interests in solid polymers are either few in number, quiet in behaviour, or find their needs well catered for without any need for positive action by this Society. This Society also supported the European meeting, at which nine papers from the U.K. appeared in a programme of 120 papers in up to five parallel sessions.

Plans for the future include two meetings next year, of which members have already received notice. These are, like the present meeting, being run in collaboration with other organisations: in April "Rheology in crude oil production" is associated with the U.K. section of the Society of Petroleum Engineers while in September "Engineering rheology" has the involvement of our German counterpart (the Deutsche Rheologische Gesellschaft) and the blessing of the Working Party on Non-Newtonian Fluid Processing of the European Federation of Chemical Engineers. In 1984 there will be a meeting on rheology in general at Birmingham in the spring, probably a one-day meeting and A.G.M. in September, and the IXth International Congress in Mexico in October. Dates of all these are given in the Diary at the end of this issue of the Bulletin.

Further crystal-ball gazing is possible, since plans are afoot for the second Conference of European Rheologists in 1986, bids for the 1988

International Congress are being prepared and 1990 will see the Golden Jubilee of this Society. Because of this latter prospect, Council has no intention of offering to host a major international event in either 1986 or 1988. The scale of activity internationally leads to a theme to which this Sec., gives great importance, that of collaboration and exchange of information between Societies. At the Graz conference a meeting of European delegates to the International Committee on Rheology was held (following a similar meeting in Naples in 1980), and the idea of a regular "Conference of European Rheologists" to be held midway between International Congresses was agreed. In addition the idea of designating meetings on specialised topics as "European Meetings" was agreed, with the aims of co-ordinating activities in different countries to avoid clashes of date and topic and of giving such meetings a wider pool of potential participants on which to draw. The "Engineering Rheology" meeting in London in September 1983 and a meeting on "Polymer Processing and Properties" in Capri in June 1983 have been approved as European Meetings. A newsletter on European Rheological Activity has been circulated to delegates, with the idea that information in this newsletter may be passed on to conference planners and to members of societies of rheology. (Any information for this newsletter should continue to be sent to me at Newcastle University. I continue as Secretary of the committee of European Delegates to the I.C.R.)

Related to this topic is the question of the possibility of rheologists attending international meetings. We may all expect some difficulty in finding money for a trip to the IXth Congress in Acapulco, but more serious than that is the difficulty arising from national barriers to unhindered travel. The Graz meeting was marred by the uncertainty about and eventual absence of a number of East European rheologists — ironical in view of the choice of Austria, as a neutral country, for the first European conference. More serious still are reports of difficulties in carrying out their jobs ranging from inability to purchase books because of currency or exchange control problems to cases such as that of A. I. Leonov, referred to elsewhere in these minutes.

Still on international matters, it is pleasing to report the formation of the Canadian Rheology Group with a constitution (in French and English) which will have been approved (or otherwise) by the time this report is presented. The emergence of this Society from under the wing of the Society of Rheology brings to mind the status of our Australian branch, since this has resolved to take steps to become the Australian Society of Rheology, and relevant resolutions may need to be put to a General Meeting of this Society, probably to the 1983 Annual General Meeting. Council has expressed the hope that the Society retains close links with Australian rheologists, and there is no question at all of opposition from the Society to the loss of its Branch. A Spanish group of rheologists is expected to form a society soon,

and word came from India only days before this meeting that the Indian Society of Rheology has been formed and has forty-three members with interests classified and recorded in a way similar to that used in this Society's membership list. Council and, I am sure, this Society as a whole wish rheologists in each of these countries every success.

Returning to more domestic matters, Members may be interested in hearing that a sub-committee of Council has been considering the computerisation of the Society's records and the possibility of using a microcomputer. The practice of offering financial assistance to students attending conferences abroad continues; one grant was made for the co-author of a paper at Graz. Any member who is, or has, a student wishing to attend a conference abroad may write to the Treasurer or the Secretary.

And now farewell. These are unlikely to be my last words in these pages, but I come to the end of four enjoyably full years as Secretary of this Society. This Society runs as smoothly as it does because of teamwork — the load is spread between the officers and I suspect that each sees all the others as undertaking more exacting tasks than he or she does. No office is a soft option, but none is unbearably demanding, and I have great pleasure in publicly thanking all those with whom I have worked over the last four years. It has been an experience not to be missed, and I wish my successor as much pleasure as I have had in it.

C. J. S. PETRIE

September, 1982

BALANCE SHEET as at 30th JUNE, 1982

						£	£
ASSETS							
INVESTMENTS							
Redbridge 10% Bond	...	...	...	...	...	2,500	
Trustee Savings Account	...	...	...	...	...	1,935	
							4,435
CURRENT ASSETS							
Cash at Lloyds Bank:							
Deposit Account	...	...	...	...	...	6,124	
Current Account	...	...	...	...	...	454	
							6,578
Sundry Debtors	...	...	...	...	...		1,659
							12,672
LIABILITIES							
CURRENT LIABILITIES							
Sundry Creditors	...	...	...	...	...		295
NET ASSETS	...	...	...	...	...		£12,377
REPRESENTED BY:							
General Fund as at 1st July, 1981	...	...	...	...	...		10,604
Add: Trustee Savings Bank Interest	...	...	...	...	...		152
							10,756
Add: Excess of Income over Expenditure	...	...	...	...	...		1,621
							£12,377

We have examined the books of account of the British Society of Rheology and report that to the best of our knowledge the above Balance Sheet and Revenue Account are in agreement therewith.

We have not inspected the Membership Records.

Hon. Treasurer

Chancery House
3 Hatchlands Road
Redhill RH1 6AA

17th September, 1982

Chartered Accountants

REVENUE ACCOUNT for the year ended 30th JUNE, 1982

	£	£
EXPENDITURE		
Council Expenses		834
Bulletin Production Costs		1,724
Expenditure by Officers:		
Secretary	10	
Treasurer		
Membership, Secretary and Circulation	680	
		690
Professional Fees		88
Insurance		30
Conference Travel		100
Annual Awards		350
Miscellaneous		6
		3,822
Excess of Income over Expenditure		1,621
		£5,443
INCOME		
Annual Subscription and Entrance Fees		2,720
Publisher—Rheology Abstracts		1,519
Bulletin Subscriptions		32
Investment Income:		
Bank Deposit Account Interest	628	
Redbridge Bond	175	
Inland Revenue (Tax Repayments)	75	
		878
Conferences: Net Surplus per account		294
		£5,443
CONFERENCE ACCOUNT		
Surplus: Newcastle less Expenses		£294

MEMBERSHIP SECRETARY'S REPORT

Annual General Meeting, 23rd September, 1982

The current membership stands at 663, composed of 410 home, 84 Australian Branch and 169 overseas members. This compares with last year's total of 671. The changes are as follows.

	1981/82			1980/81	
	Australian				
	home	Branch	overseas	total	total
New members	20	13	8	42	73
Resignations	29	2	5	35	18
Deaths	0	1	0	1	1
Membership ceased by Rule 4(d)	7	0	5	12	13
Net gain in members	-16	9*	-1*	-8	41

* An Australian Branch member has transferred to Germany

Included in the total membership are 38 in arrears with the 1981/82 subscription, compared with 47 last year. Also 47 members have not yet paid the full membership fee since the rate was increased last year.

The following Honorary Members have been elected during the year: Prof. A. Charlesby (Past President), Prof. Dr. J. Overbeek, Mr. R. H. S. Robertson and Dr. H. L. D. Pugh.

D. C.-H. CHENG

ANNUAL AWARD

The Annual Award for 1982 was presented to Prof. F. M. Leslie of the University of Strathclyde. The presentation was made by the President, Prof. J. R. A. Pearson, at the dinner held in connection with the Rheology and Microstructure Meeting at Trinity Hall, Cambridge, on Wednesday, 22nd September. The citation and the text of Prof. Pearson's speech are printed below:

Annual Award for 1982

is presented to

Professor F. M. Leslie

of the University of Strathclyde

in recognition of his important

contributions in the rheology of liquid crystals

Signed

J. R. A. PEARSON, *President*

It gives me great pleasure to introduce this year's Award winner to you tonight, and it is particularly fitting that Frank Leslie should be honoured before this particular company. This conference has been arranged to bring together the molecular, the microstructural and the continuum approaches to rheology, and in no field has this been more necessary than in that of liquid crystals. Recent experimental and theoretical work, together with a re-evaluation of earlier work, has provided a satisfactory basis for a full understanding of the phenomena associated with the flow of many liquid crystalline systems, both thermotropic and lyotropic. What were once rather exotic ideas advanced to explain the unusual and little known behaviour of an ill-defined class of materials have now become the central part of a successful theory of what some regard as a separate state of matter. In this Frank Leslie has played a significant part, over a period of nearly 17 years.

His work has not been characterised by flamboyancy or controversy; he has not been able to expand his activities through large numbers of research students or post-doctoral colleagues; he has not sought to follow the fashions of scientific interest. Instead, and to his credit, he has epitomised what some of us think is most admirable in the British academic tradition: thorough scholarship, systematic endeavour, mastery of the necessary techniques (mathematical in his case), simplicity and clarity in all essentials, an unaggressive and unpatronising style, a clear-minded appreciation of the work of others and a fine sense of what constitutes a true advance in the subject.

Continuum-mechanical theories of liquid crystals are not easy to follow because the mathematical formulation is necessarily complex, and the range of possible solutions to flow problems daunting. It is not therefore surprising that the work of Ericksen and Leslie in the late 1960s on nematics should not have been followed up by more than a few determined individuals, and that progress was slow. This early work was based on strain energy functions proposed at about that time by F. C. Frank and shown to be capable of explaining static behaviour. Temperature and magnetic effects were included in the formulation of the constitutive equations, though these were not the key feature of Leslie's own work. He was more concerned with basic fluid mechanical phenomena, including stability and the role of wall boundary conditions. His success has been due in no small measure to his appreciation of thermodynamic considerations, and to his willingness to help interpret experimental observations. For those not familiar with his work, I can strongly recommend a reading of his major review article on "Theory of Flow Phenomena in Liquid Crystals" in *Advances in Liquid Crystals* (1979) and of the much shorter survey of "Viscometry of Nematic Liquid Crystals" in *Mol.Cryst.Liq.Cryst.* (1981).

CONFERENCES ON RHEOLOGY AND RELATED TOPICS IN 1983

(List compiled on the basis of information to hand in September 1982)

- Jan. 24-28 Vosges, France :
International Workshop on Extensional Flows.
Contact:
Professor C. Wolff
Table Ronde C.N.R.S. E.N.S.I.T.M.
11 rue A. Werner
68093 Mulhouse Cedex
France
- April 14-15 London, England : *Rheology in crude oil production.*
(B.S.R., Soc. Petrol. Eng. — London Sect.)
Contact:
Dr. T. E. R. Jones
School of Mathematical Sciences
Plymouth Polytechnic
Drake Circus
Plymouth
PL4 8AA
- April 19-24 Caserta, Italy :
The mechanical properties of biological solids.
(Euromech 170)
Contact:
Professor G. Pallotti
Istituto di Fisica 'A. Righi'
Via Irnerio 46
40126 Bologna BO
Italy
- May 16-17 Melbourne, Australia :
Third National Conference on Rheology.
(B.S.R., Australian Branch)
Contact:
Dr. J. O'Donnell
Department of Chemical Engineering
La Trobe Street
Melbourne, Vic. 3000
Australia

- June 6- 8 Vermont, U.S.A. :
International Workshop on Numerical simulation of non-Newtonian flows.
 Contact:
 Professor B. Caswell
 Division of Engineering
 Brown University
 Providence
 Rhode Island
 U.S.A.
- June 13-16 Capri, Italy:
European meeting on polymer processing and properties.
 (Societa Italiana di Reologia)
 Contact:
 Dr. Paolo Masi
 Istituto di Principi di Ingegneria Chimica
 Piazzale Tecchio
 80125 Napoli
 Italy
- Aug. 20-24 Baden-Baden, West Germany:
Fifth International Congress on Biorheology.
 Contact:
 Prof. Dr. K. Messmer
 Department of Experimental Surgery
 Zm Neuenheimer
 Feld, 347
 D6900
 Heidelberg 1
- Sept. 6-10 Bucharest, Rumania:
Viscoplasticity and applications.
 (Euromech 175)
 Contact:
 Professor N. Cristescu
 Faculty of Mathematics
 University of Bucharest
 Str. Academiei 14
 Bucharest 70109
 Rumania

Sept. 19-23 London, England: *Engineering Rheology*.
(B.S.R. and Deutsche Rheologische Gesellschaft)
Contact:
Dr. D. C-H. Cheng
Warren Spring Laboratory
(Ref: 116/43)
P.O. Box 20
Gunnels Wood Road
Stevenage
Hertfordshire
SG1 2BX

Dec. 8- 9 Cambridge, England:
Molecular and Microstructural Basis of Viscoelasticity.
Contact:
Dr. M. Lal
Unilever Research
Port Sunlight Laboratory
Bebington
Wirral
L63 3JW

INDUSTRIAL RHEOLOGY

Applications and use of the Rheogoniometer and Spin-line Viscometer
Ross Priory, Loch Lomond, Scotland

Tuesday, 10th May - Thursday, 12th May, 1983

First Circular

The Fifth Ross Priory Course on Rheogoniometry and Extensional Viscosity, sponsored by Sangamo Schlumberger, Rheology Division, will be held at the University of Strathclyde's Staff Educational and Recreational Centre on the banks of Loch Lomond, Scotland. There will be a considerable difference in content from the subject matter in previous years. While the fundamentals will still be dealt with, the main emphasis will be on the application of the Rheogoniometer and Extensional Viscometer to industrial flow problems and their solution.

Lecturers:

Professor K. Walters
University College of Wales
Aberystwyth

Dr. J. Ferguson
University of Strathclyde
Glasgow

Dr. H. Barnes
Unilever Research
Port Sunlight

Those attending the course will be met in Glasgow on the morning of 10th May and taken to Ross Priory by bus. The house itself is situated in 55 acres of grounds at the south end of Loch Lomond. Part of the building dates back to the 14th century. The facilities include a bar, squash court, six hole golf course and fishing on the loch. The gardens are unique and at their best at this time of the year.

Accommodation is limited and those attending will be expected to share a room as all the bedrooms are twin. Alternatively, local hotels can be used.

The course will disperse after breakfast on Thursday, May 12th, when members will be returned to Glasgow.

The course fee will be £110 including full board and transport. If you wish to attend or require further information please complete the attached form and return it to me:

Dr. J. Ferguson

Head of Fibre and Textile Research Unit

Department of Pure and Applied Chemistry

University of Strathclyde

Cathedral Street

GLASGOW

Scotland G1 1XL

I wish (a) more information*, (b) to attend* the Rheogoniometry Course

Please send Course details to:

NAME (Mr., Mrs., Miss, Dr., etc.)

ADDRESS

.....

POST CODE TEL. No.

* Delete whichever is inapplicable

1. The first part of the paper is devoted to the study of the properties of the function $f(x)$ defined by the equation

$$f(x) = \int_0^x f(t) dt + \int_0^x g(t) dt$$

where $f(x)$ and $g(x)$ are functions defined on the interval $[0, 1]$ and satisfying the conditions

$f(0) = 0$, $f(1) = 1$, $g(0) = 0$, $g(1) = 1$.

It is shown that the function $f(x)$ is continuous on the interval $[0, 1]$ and that

$f(x) = \int_0^x f(t) dt + \int_0^x g(t) dt$ for all $x \in [0, 1]$.

It is also shown that the function $f(x)$ is differentiable on the interval $[0, 1]$ and that

AUSTRALIAN BRANCH
THIRD NATIONAL CONFERENCE ON RHEOLOGY
(16th - 17th May, 1983)

CALL FOR ALL PAPERS

Third National Conference on Rheology will be held at the Royal Melbourne Institute of Technology, Melbourne, on 16th and 17th May, 1983. Papers are invited on theoretical and experimental aspects of rheology for all types of materials including food and biological matters, polymers, lubricants, paints, detergent, slurries and suspensions, etc. Papers on rheological measurement techniques and development of rheological instruments are also welcome.

Abstracts of papers of about 100 words should be sent to the Conference secretary no later than 15th November, 1982. Contributors will be informed about the acceptance of their papers by 6th December, 1982. Full papers should be due by 11th March, 1983.

Further correspondence and abstracts to

Dr. J. O'Donnell
Department of Chemical Engineering
La Trobe Street
Melbourne, Vic. 3000
Tel: 341-2086/2081

MEMBERSHIP NEWS

The following applications for membership were approved at the September Council Meeting:

John W. E. Gearing
MA
fea BCFGJ

Ralph H. Colby
BS
fetsa DN

Kamal Tolba Ewida
BSc Eng, Dip.B.A.
fetsa CDFGJM

Christian Meier
HTL
fea FLM

Polymer Laboratories Ltd.
New Campus
Ashby Road
Loughborough LE11 3TF

Northwestern University
Chemical Engineering Department
Evanston
Illinois 60201 USA

Southampton University
Automotive Group, I S V R
Southampton

Contraves AG
Schaffhauserstrasse 580
Dep. IBVA
CH-8052 Zurich
Switzerland

Resignations

Dr. G. E. Gadd, National Maritime Institute, Feltham, Middlesex.
Dr. K. Wibberley, School of Pharmacy, London University.
Dr. N. J. Mills, University of Birmingham.
D. H. Trevena, UCW, Aberystwyth.
Prof. G. Nuki, University of Edinburgh.
R. P. Reeves, Ware, Hertfordshire.
D. B. Farmer, Vinyl Products Ltd., Carshalton, Surrey.
G. P. Pearson, University of Bradford.
R. H. Norman, RAPRA, Shawbury, Shrewsbury.
Miss D. A. Thomas, ICI Plastics Division, Welwyn Garden City, Hertfordshire.
G. O. Jones, University College of Swansea.
Dr. P. A. Gutteridge, ICI Plastics Division, Welwyn Garden City, Hertfordshire.
A. R. Pennell, Pennell Enterprises Ltd., Longfield, Kent.
Dr. R. F. White, Smith Kline & French Laboratories Ltd., Welwyn Garden City, Hertfordshire.
P. W. Riley, St. Austell, Cornwall.
Dr. R. N. Hills, Heriot-Watt University, Edinburgh.

CHAIR OF FOOD RHEOLOGY

Dr. Philip Sherman, previously Reader in Food Physics at Queen Elizabeth College, University of London, has been appointed to a chair in Food Rheology within London University. The chair will be held in the Department of Food Science, Queen Elizabeth College.

DEATH

We regret to record the death of Prof. Emeritus E. L. Crossley, Reading University. He was appointed to the chair of Dairying at Reading University in 1947 where he worked on processing of milk and dairy products, extending his interests into other food products and into the microbiological problems of large-scale processing. He was awarded the Gold Medal by the Society of Dairy Technology in 1975.

ANNUAL AWARD—1983

Members are reminded that nominations for this award should be made in writing to the Secretary. Nominations are requested before Wednesday, 23rd March, 1983, for consideration by Council in time for the 1983 Annual General Meeting. Nominations received after this date will be considered if possible, and if the Bulletin does not reach members until March, Council will take account of this. The award is made "by Council on behalf of the Society to an individual or

a group of individuals or an institution for significant or promising contribution(s) and/or services to the advancement of rheology in any of its many aspects”.

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STOP PRESS

Prof. J. G. Oldroyd died suddenly on the morning of 22nd November.

DIARY (1983)

1982

January 24 - 28. International Workshop on Extensional Flow. Vosges, France.

April. Rheology in Crude Oil Production, London.

April 19 - 24. Mechanical Properties of Biological Solids. Caserta, Italy.

May 10 - 12. Industrial Rheology. Loch Lomond, Scotland.

May 16 - 17. Third National Conference on Rheology. Melbourne, Australia.

June 6 - 8. International Workshop on Numerical Simulation of non-Newtonian Flows. Vermont, U.S.A.

June 13 - 16. Polymer Processing and Properties. Capri, Italy.

August 20 - 24. Fifth International Congress on Rheology. Baden-Baden, West Germany.

September 6 - 10. Viscoplasticity and Applications.

September 19 - 23. Engineering Rheology, London.

December 8 - 9. Molecular and Microstructural Basis of Viscoelasticity. Cambridge.