

OUTLINE OF ARRANGEMENTS DURING THE CONGRESS

THIS volume is limited to abstracts. The programme for the scientific sessions and social activities is printed together with that of the Sixth International Congress on Rheology. In a few cases the abstract was not received in time to be included in this volume and these communications are listed therefore by title only. These abstracts have also been printed in *Biorheology*, the official journal of our Society.

The invited lectures will be published in *Biorheology*. The free communications will also appear in *Biorheology* after the customary review process. Discussion will be included and every discussant is requested to complete and hand in to G. V. F. SEAMAN his discussion remarks in writing before the end of the Congress, otherwise they cannot be included.

Manuscripts of not more than 5000 words should be handed in to G. V. F. SEAMAN during the Congress. Only up to three pages of figures will be accepted. Please write up your presentation in conformity with the instructions to authors for *Biorheology*. Texts of scientific exhibits limited to three pages including diagrams or figures will also appear after being refereed.

Monday, 4 September

The joint opening plenary sessions of the Sixth International Congress on Rheology and First International Congress of Biorheology will be held. Our President, Professor A. L. COPLEY will deliver an address entitled "On Biorheology" at 4.40 p.m.

A cocktail party for the participants of both Congresses will be held in the evening.

Tuesday, 5 September

The plenary sessions of the First International Congress of Biorheology will take place. These sessions are dedicated to the memory of Professor AHARON KATCHALSKY. The AHARON KATCHALSKY Memorial Lecture will be delivered by Professor ALEX SILBERBERG.

The ceremony of the Poiseuille Award will take place immediately prior to the Society Dinner which will be held in the evening.

Wednesday, 6 September

The morning will be devoted to the presentation of free communications and an excursion has been arranged for the afternoon to Pérouges, an ancient city of the Lyon region. A concert will be given in the evening.

Thursday, 7 September

The morning and afternoon will be available for the presentation of free communications. In the evening, a banquet will be held for the members of both Congresses.

Friday, 8 September

Further free accommodation communications will be given in the morning and the business meeting of the members of the International Society of Biorheology will be held in the afternoon.

The time and place of the above meetings as well as the meeting of the Executive Council of the Society and the discussion of the recommendations of the Committee on Nomenclature will be announced.

The Poiseuille Medal

The medal, of 18 carat gold, has on one side, in relief, a portrait of Poiseuille, drawn by the Icelandic artist Nina Tryggvadottir from a photograph of him.

The third recipient of the award will be our President, Professor A. L. COPLEY, for his outstanding contributions both in research and organization to the field of biorheology. Dr. GEORGE W. SCOTT BLAIR as the previous recipient will present the Poiseuille Medal to Professor COPLEY.

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I. Plenary Lectures

Plenary Lecture to both Congresses A. L. COPLEY:* (U.S.A.) On Biorheology

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Biorheology, information theory and cybernetics
- [2] E. FUKADA and M. KAIBARA: (Japan)
The dynamic rigidity of fibrin gels
- [3] Y. C. B. FUNG:† (U.S.A.)
Mechanical properties of living soft tissues
- [4] H. L. GOLDSMITH:† (Canada)
Some microrheological aspects of platelet thrombosis
- [5] R. D. HARKNESS:† (England)
The use of mechanical tests to examine the nature of chemical cross-links in collagenous frameworks
- [6] A. LARCAN† and J. F. STOLTZ: (France)
Propriétés électrocinétiques des éléments figurés humains
- [7] H. SCHMID-SCHÖNBEIN;† G. GALLAFCH and E. VOLGER: (Germany)
The pathological red cell aggregation (Blood Sludge): Microrheology and protein chemistry
- [8] R. SKALAK:† (U.S.A.)
Modelling the mechanical behavior of red blood cells
- [9] A. SILBERBERG:† (Israel)
The Aharon Katchalsky Memorial Lecture
- ‡[10] V. I. VOROB'EV:† (U.S.S.R.)
Rheological properties of chromosomal nucleoproteins
- [11] K. WEISSENBERG:† (Holland)
A rheological study of the transition region from continuous deformation to breakup and its biological significance

* Invited lecture by Sixth International Congress on Rheology.

† Invited lecture by the First International Congress of Biorheology.

‡ No title or abstract received.

II. Free Communications

- [1] T. AZUMA and M. HASEGOWA: (Japan)
Distensibility of the veins from the architectural point of view
- [2] A. M. BENIS, S. CHIEN, S. USAMI and K.-M. JAN: (U.S.A.)
Inertial pressure losses in perfused hindlimb: A reinterpretation of the results of Whitaker and Winton
- [3] D. E. BROOKS and G. V. F. SEAMAN: (U.S.A.)
An electroviscous effect in the rheology of erythrocyte suspensions
- [4] L. C. CERNY, D. M. STASIN and W. TINELLI: (U.S.A.)
Age-related properties of collagen: A viscometric treatment
- [5] M. M. CHEN: (U.S.A.)
Some theoretical considerations on enhanced diffusion in flowing blood due to red cell motion
- *[6] P. D. CHRISTACOPOULOS, D. S. HOLSCLAW, J. S. SOELDNER, H. SHWACHMAN and R. E. GLEASON:
(U.S.A.)
Variations of retinal hemodynamics as detected by fluorescein angiography in blood glucose abnormalities of different severity
- [7] R. S. CONNELL and R. L. SWANK: (U.S.A.)
A study of secondary platelet-leucocyte embolism
- [8] A. L. COPLEY and R. G. KING: (U.S.A.)
The action of human red blood cells and platelets on viscous resistance of plasma protein systems
- [9] N. DAVIDS and M. K. MANI: (U.S.A.)
A finite element analysis of endothelial shear stress for pulsatile blood flow
- [10] L. DINTENFASS: (Australia)
Blood rheology and rheology of blood coagulation as diagnostic tools in study of malignant tumours, cardiovascular diseases and haematological disorders
- [11] L. DINTENFASS, C. D. FORBES and G. P. McNICOL: (Australia)
Viscosity of blood in patients with myocardial infarction, haemophilia and thyroid diseases. Effect of fibrinogen, albumin and globulin
- [12] A. M. EHRLY: (Germany)
Influence of arvin on the flow properties of human blood

- [13] A. M. EHRLY and G. JUNG (Germany)
Diurnal rhythm of human blood viscosity
- [14] N. ELIEZER: (Israel)
Viscoelastic properties of mucus
- [15] E. EVANS and R. F. LEBLOND: (France)
Geometric properties of individual red blood cell discocyte-spherocyte transformations
- [16] To be given as a plenary lecture
- [17] F. J. GAUTHIER, H. L. GOLDSMITH and S. G. MASON: (Canada)
Flow and deformation in concentrated emulsions. Liquid drops as models of erythrocytes
- [18] H. L. GOLDSMITH: (Canada)
Flow and deformation in human blood: Erythrocytes in ghost cell suspensions
- [19] C. W. GRIFFEN and R. S. PORTER: (U.S.A.)
The rheology of mesophases formed by pure esters of cholesterol and their blends
- [20] J. F. GROSS and C. GAZLEY, JR.: (U.S.A.)
Hemorheology in the bone marrow
- [21] H. HARTERT: (Germany)
Rheo-simulation. A new method and its application in the assay of clotting process and factor XIII
- [22] C. R. HUANG, N. SISKOVIC, R. W. J. ROBERTSON, H. H. WANG and P. OROSE, JR.: (U.S.A.)
Thixotropy of human blood
- †[23] Y. ISOGAI, A. IIDA, I. CHIKATSU, K. MOCHIZUKI and M. ABE: (Japan)
Dynamic viscoelasticity of blood during clotting in health and disease
- [24] M. JOLY, D. BOURGOIN et E. VOLF: (France)
Interprétation moléculaire de la viscosité des solutions aqueuses très concentrées des biopolymères
- [25] K. A. KLINE: (U.S.A.)
An estimate of red cell membrane strain in blood flow
- [26] K. A. KLINE: (U.S.A.)
Estimates of red cell membrane strain in oscillatory blood flows
- [27] H. J. KLOSE, H. SCHMID-SCHÖNBEIN and H. BRECHTELSBAUER: (Germany)
Shear rate dependent blood coagulation: Rheology of platelets in coagulation of platelet-rich plasma
- [28] T. KONDO and B. TAMAMUSHI: (Japan)
Suspension of microcapsules as a model of blood
- [29] A. LARCAN, J. F. STOLTZ et S. GAILLARD: (France)
Influence de six substituts du plasma et des solutions d'hémoglobine sur la viscosité plasmatique
- [30] M. LEFORT, E. WACKENHEIM, J. F. STOLTZ and A. LARCAN: (France)
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- [31] P. S. LYKOURIS, P. D. PATEL and P. PICOLOGLOU: (U.S.A.)
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- [32] J. L. MARTIN, R. M. JACOBS, R. S. MARSHALL and A. L. COPLEY: (U.S.A.)
Apparent viscosity of native human blood at various hydrostatic pressures
- [33] Y. MATUNOBU and M. ARAKAWA: (Japan)
Model experiment on the post-stenotic dilatation in blood vessels
- [34] H. J. MEISELMAN: (U.S.A.)
In vivo hemorheology employing outflow viscometric techniques
- [35] CL. MOLINA, J. M. AIACHE, J. BRUN et J. Cl. CHEMINAT: (France)
Méthodes d'étude de la rhéologie des expectorations
- [36] R. OSSOFF and S. CHARM: (U.S.A.)
Blood flow and wall change
- [37] A. A. PALMER and W. H. BETTS: (Australia)
The influence of flow rate and haematocrit on the location of the zone of maximum cell concentration in blood flowing down a capillary slit
- [38] G. QUADBECK: (Germany)
Das thixotropische Verhalten von Hirngewebe bei Sauerstoffmangel
- †[39] S. B. REES: (U.S.A.)
Biorheology in diabetes mellitus
- [40] H. S. ROZOV and E. DAVIS: (Israel)
Correlations between micro- and macrocirculatory changes during treatment of peripheral vascular diseases with xanthyl nicotinate
- [41] H. SCHMID-SCHÖNBEIN, J. VAN GOSEN and H. J. KLOSE: (Germany)
Comparative microrheology of blood. Effect of desaggregation, red cell orientation and red cell fluidity on shear thinning of blood in various species
- [42] M. G. SHARMA: (U.S.A.)
Viscoelastic behavior of conduit arteries

- [43] F. SPINELLI and Ch. MEIER: (Switzerland)
Viskositätsmessungen an Blut und Plasma von Hunden (Temperatur-Viskositätsverhalten, Infusion)
- [44] J. F. STOLTZ, A. LARCAN, F. STREIFF, C. VIGNERON, B. GENETET, C. ROFFONX and S. GAILLARD:
(France)
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- [45] P. TEITEL, G. GALECZKI, A. XENAKIS and I. MARCU: (Roumania)
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- [46] G. B. THURSTON: (U.S.A.)
Frequency and shear-rate dependence of viscoelasticity of human blood
- [47] S. USAMI and S. CHIEN: (U.S.A.)
Shear deformation of red cell ghosts
- [48] E. VOLGER, H.-J. KLOSE and H. SCHMID-SCHÖNBEIN: (Germany)
The effect of reduced salinity on red cell aggregation: A model of aggregate formation
- †[49] M. M. A. VRIJHOEF and F. C. M. DRIESSENS: (Holland)
The creep of dental amalgam. A factor determining the loss of an amalgam filling and its surrounding tooth structure
- †[50] D. WEIKS: (England)
The mechanism of rapid starting of slender fishes
- *[51] A. R. WILLIAMS: (England)
Hydrodynamic disruption of human erythrocytes
- [52] S. WITTE: (Germany)
Der Proteingehalt im perivasalen Bindegewebe als Faktor der Permeabilität

* Title and Abstract received by G.V.F.S. but probably not by A. LARCAN.

† Title received but no abstract.

III. Exhibits

- [1] L. DINTENFASS, C. D. FORBES and J. BARBENEL: (Australia)
About an increase of aggregation of red cells with an increase of temperature. Normal and abnormal blood (i.e. cancer)
- [2] R. G. KING and A. L. COPLEY: (U.S.A.)
An accessory to the Weissenberg Rheogoniometer for the measurement of viscoelasticity of surface layers of proteins
- †[3] J. L. MARTIN, R. M. JACOBS and A. L. COPLEY: (U.S.A.)
Transistorized falling ball viscometer for rapid testing of biological and technological systems