

THE BIOCHEMICAL SOCIETY

OFFICERS AND COMMITTEE, 1972-73

Chairman of the Committee

T. W. Goodwin, F.R.S.

Treasurer

D. F. Elliott

Committee Secretary

A. N. Davison

Meetings Secretary

H. M. Keir

International Secretary

A. P. Mathias

Committee

R. B. Beechey

E. A. Dawes

R. M. C. Dawson

D. T. Elmore

K. Griffiths

R. Hoffenberg*†

G. D. Hunter

V. H. T. James

C. F. Mills

C. A. Pasternak†

P. J. Randle

D. S. Robinsont

T. A. Scott

T. F. Slater

Ruth E. van Heyningen

D. G. Walker*†

A. M. White

T. S. Work

**Ex officio* Member of Committee.

†Representative of Editorial Board of the *Biochemical Journal*.

‡Representative of Editorial Board of *Clinical Science*.

Symposium Organizer

R. M. S. Smellie

The Biochemical Society exists to advance the science of biochemistry through meetings and publications. Eleven meetings a year are held, each at a different place; original papers are presented and special topics are discussed at symposia and colloquia.

Persons interested in biochemistry are eligible for election as Members. Details of further facilities accorded to Members, and forms of application for membership, are available from the Executive Secretary, The Biochemical Society, 7 Warwick Court, London WC1R 5DP [01-242 1076 (4 lines)].

The *Biochemical Journal* is published and distributed by the Biochemical Society. It is published twice monthly, in four or more volumes per year. It is planned that five volumes will appear in 1972. The index for each volume is published separately.

Subscriptions to the *Biochemical Journal*. For non-members of the Biochemical Society the subscription to the Journal at the present rate of publication is £45 per year (£9 per volume). For non-members in the U.S.A. the subscription is \$112 per year (subject to exchange variation) (\$22.50 per volume). All subscriptions are payable in advance at the time of ordering. Orders and subscriptions should be sent to the Biochemical Society (Publications), P.O. Box 32, Commerce Way, Whitehall Road Industrial Estate, Colchester CO2 8HP, Essex.

Claims regarding issues lost or damaged in transit should be addressed to the Biochemical Society at the address in the preceding paragraph. No claims can be entertained if they are received later than three months after the date of posting of the Journal.

Back Numbers. Enquiries for volumes 1-19 should be addressed to William Dawson & Sons Ltd., Back Issues Department, Cannon House, Park Farm Road, Folkestone, Kent. Quotations for available issues of subsequent volumes and parts may be obtained on application to The Biochemical Society (Publications), P.O. Box 32, Commerce Way, Whitehall Road Industrial Estate, Colchester CO2 8HP, Essex.

Advertisements. Applications for advertising space should be sent to the Advertising Department, The Biochemical Society, 7 Warwick Court, London WC1R 5DP [01-242 1076 (4 lines)]. Copy is required eight weeks before publication date. Rate cards are available on request.

Microfilms. Volumes 1-89 (1906-1963) have been recorded on microfilm by the EP Group, Microfilm Division, Bradford Road, East Ardsley, Wakefield, Yorks. Details are available from the firm or the Biochemical Society.

The BIOCHEMICAL JOURNAL

December 1972

Volume 130, No. 3

EDITORIAL BOARD

Chairman

D. G. Walker

Deputy Chairmen

**D. S. Robinson
M. J. Crumpton
C. A. Pasternak
H. B. F. Dixon**

Editorial Secretary

J. D. Killip

**R. H. Burdon
M. Cannon
R. A. Cox
J. E. Cremer
J. T. Dingle
D. C. Ellwood
P. B. Garland
N. M. Green *
J. J. Holbrook
M. R. Hollaway
R. C. Hughes
K. M. Jones
J. D. Judah
A. E. Kellie
U. E. Loening
P. N. Magee
R. D. Marshall
P. A. Mayes**

**J. H. Moore
K. Murray
A. C. T. North *
R. E. Offord
D. V. Parke
R. N. Perham
H. R. Perkins
G. K. Radda
R. Rodnight
A. P. Ryle
J. R. Tata
P. K. Tubbs
D. C. Watts
F. R. Whatley
D. H. Williamson**

*Nominated by the British
Biophysical Society



London: The Biochemical Society

	PAGE		PAGE
The structure of ribosomes as indicated by studies on tetramers from hypothermic chick embryos.		Short Communications	
<i>By</i> N. H. Carey, J. R. W. Hobbs & E. A. Cook	871	Singlet oxygen in the photo-oxidation of bilirubin in hydroxylic solvents.	
Microbial metabolism of the pyridine ring. Formation of pyridinediols (dihydroxypyridines) as intermediates in the degradation of pyridine compounds by micro-organisms.		<i>By</i> R. Bonnett & J. C. M. Stewart	895
<i>By</i> C. Houghton & R. B. Cain	879	The effect of an inhibitor of the thrombin-fibrinogen reaction on thrombin-induced blood-platelet aggregation.	
		<i>By</i> R. Flengsrud, C. Eika & H. Prydz	899

Index of Authors

	PAGE		PAGE		PAGE
Aitken, D. M.	645	Erecińska, M.	739	Mathews, E. K.	825
Apps, D. K.	861	Evans, R. J.	825	Newsholme, E. A.	697
Archibald, A. R.	681, 691	Flengsrud, R.	899	Ottaway, J. H.	861
Baddiley, J.	691	Gibson, F.	847	Perl, M.	813, 819
Bonnett, R.	895	Green, N. M.	707	Porter, R. R.	749
Brown, A. D.	645	Hallén, A.	729	Prydz, H.	899
Brownson, C.	797, 805	Hems, D. A.	671	Rasmussen, C.	713
Cain, R. B.	879	Henning, S. J.	785, 791	Reid, K. B. M.	749
Carey, N. H.	871	Hird, F. J. R.	785, 791	Spencer, N.	797, 805
Cartledge, T. G.	739	Hobbs, J. R. W.	871	Stafford, G. H.	681
Chance, B.	739	Houghton, C.	879	Stewart, J. C. M.	895
Cook, E. A.	871	Knowles, P. F.	713	Taylor, C. E.	713
Cossins, E. A.	773	Libby, P. R.	663	Taylor, R. S.	713
Crabtree, B.	697	Lindahl, U.	729	Tipton, K. F.	765
Dean, P. M.	825	Lloyd, D.	739	Toms, E. J.	707
Duckworth, M.	691	Lor, K. L.	773	Turner, A. J.	765
Egan, A. F.	847	Lowe, D. M.	749	Wasteson, Å.	729
Eika, C.	899			Wolfvitch, R.	819
Elleman, T. C.	833				

Papers Accepted for Publication

The characterization of C-phycoerythrin from an extremely halo-tolerant blue-green alga, *Cocchlochloris elabens*.

By O. H. W. Kao, D. S. Berns & W. R. Town

The organ specificity of ferritin in human and horse liver and spleen.

By R. R. Crichton, J. A. Millar, R. L. C. Cumming & C. F. A. Bryce

The deoxyfluoro-D-glucopyranose 6-phosphates and their effect on yeast phosphoglucoisomerase.

By E. M. Bessell & P. Thomas

The effect of substitution at C-2 of D-glucose 6-phosphate on the rate of dehydrogenation by glucose 6-phosphate dehydrogenase (from yeast and from rat liver).

By E. M. Bessell & P. Thomas

Kinetic studies of nitrogenase from soyabean root-nodule bacteroids.

By F. J. Bergersen & G. L. Turner

Choline acetyltransferase in the nettle *Urtica dioica* L.

By R. B. Barlow & R. O. D. Dixon

Uptake of orotate and thymidine by normal and regenerating rat livers.

By M. G. Ord & L. A. Stocken

Immunological properties of *N*-acetyl- β -D-glucosaminidase of normal human liver and of GM₂-gangliosidosis liver.

By M. Carroll & D. Robinson

The sites of synthesis and transport of extracellular polysaccharides in the root tissues of maize.

By D. J. Bowles & D. H. Northcote

Determination of the operational molarity of solutions of bovine α -chymotrypsin, trypsin, thrombin and factor *Xa* by spectrofluorimetric titration.

By G. W. Jameson, D. V. Roberts, R. W. Adams, W. S. A. Kyle & D. T. Elmore

Some properties of the uridine diphosphate glucuronyltransferase activity synthesizing thio- β -D-glucuronides.

By H. P. A. Illing & G. J. Dutton

Hepatic redox state and gluconeogenesis from lactate *in vivo* in the rat.

By R. A. Hawkins, C. R. S. Houghton & D. H. Williamson

Control of synthesis and release of radioactive acetylcholine in brain slices from the rat. Effects of neurotropic drugs.

By D. S. Grewaal & J. H. Quastel

The intramitochondrial location of the glutaminase isoenzymes of pig kidney.

By M. Crompton, J. D. McGivan & J. B. Chappell

Transport of glutamine and glutamate in kidney mitochondria in relation to glutamine deamidation.

By M. Crompton & J. B. Chappell

Palmitoyl-coenzyme A synthetase. Mechanism of reaction.

By J. Bar-Tana, G. Rose, R. Brandes & B. Shapiro

Milk xanthine oxidase type D (dehydrogenase) and type O (oxidase). Purification, interconversion and some properties.

By M. G. Battelli, E. Lorenzoni & F. Stirpe

Shapes of curves of pH-dependence of reactions.

By H. B. F. Dixon

The reactivity of functional groups as a probe for investigating the topography of tobacco mosaic virus. The use of mutants with additional lysine residues in the coat protein.

By R. N. Perham

A study of the kinetics and mechanism of yeast alcohol dehydrogenase with a variety of substrates.

By F. M. Dickinson & G. P. Monger

The purification, composition and specificity of wheat-germ agglutinin.

By A. K. Allen, A. Neuberger & N. Sharon

A kinetic study of rabbit muscle pyruvate kinase.

By S. Ainsworth & N. Macfarlane

The significance of abrupt transitions in Lineweaver-Burk plots with particular reference to glutamate dehydrogenase. Negative and positive co-operativity in catalytic rate constants.

By P. C. Engel & W. Ferdinand

Intermediates in fatty acid oxidation.

By H. B. Stewart, P. K. Tubbs & K. K. Stanley

Studies of mammalian glucoside conjugation.

By T. Gessner, A. Jackowitz & C. A. Vollmer

Peptide inhibitors of *Streptomyces* DD-carboxypeptidases.

By M. Nieto, H. R. Perkins, M. Leyh-Bouille, J.-M. Frere & J.-M. Ghuyssen

Studies on the heterogeneity of subfragment 1 preparations. Isolation of a new proteolytic fragment of the heavy chain of myosin.

By D. Stone & S. V. Perry

The amino acid sequence of cytochrome *c* from *Allium porrum* L. (leek).

By R. H. Brown & D. Boulter

The amino acid sequence of cytochrome *c* from *Spinacea oleracea* L. (spinach).

By R. H. Brown, M. Richardson, R. Scogin & D. Boulter

The effect of glycerol and dihydroxyacetone on hepatic adenine nucleotides.

By H. F. Woods & H. A. Krebs

The function of teichoic acids in cation control in bacterial membranes.

By A. H. Hughes, I. C. Hancock & J. Baddiley

The effect of a lipid-rich diet on the properties and composition of lipoprotein particles from the Golgi apparatus of guinea-pig liver.

By M. J. Chapman, G. L. Mills & C. E. Tylaur

Trimethylamine metabolism in obligate and facultative methylotrophs.

By J. Colby & L. J. Zatman

Hepatic lipid droplets. Isolation, morphology and composition.

By R. P. DiAugustine, J. Schaefer & J. R. Fouts

Structural requirements for binding to the sugar-transport system of the human erythrocyte.

By J. E. G. Barnett, G. D. Holman & K. A. Munday

NOTES FOR CONTRIBUTORS

It is the policy of the *Biochemical Journal* to publish papers in English in all fields of biochemistry, provided that they make a sufficient contribution to biochemical knowledge. Papers may include new results obtained experimentally, descriptions of new experimental methods of biochemical importance, or new interpretations of existing results. All work presented should have as its aim the development of biochemical concepts rather than the mere recording of facts. Theoretical contributions will be considered equally with papers dealing with experimental work. Preliminary or inconclusive experiments should not generally be described.

For detailed instructions on the preparation of papers contributors should refer to *Policy of the Journal and Instructions to Authors* [*Biochem. J.* (1972), 126, 1–19] (obtainable from the Executive Secretary, The Biochemical Society, 7 Warwick Court, London WC1R 5DP, price 15p. post free). The *Biochemical Journal* uses the recommended SI (Système Internationale) symbols [see *Pure Appl. Chem.* (1970), 21, 1–44; *Quantities, Units and Symbols* (1971), The Royal Society, London]. For biochemical nomenclature authors should as far as possible follow the Tentative Rules and Proposals of the IUPAC–IUB Commission on Biochemical Nomenclature [see *Biochem. J.* (1972), 126, 9]. For chemical nomenclature the IUPAC Rules should be followed [see *Biochem. J.* (1972), 126, 12]. The *Biochemical Journal* uses as a standard of spelling the *Concise Oxford Dictionary of Current English* (Oxford: Clarendon Press).

Two types of paper are accepted by the editors: **Full-length papers.** Papers submitted for publication should be sent together with an extra copy of the synopsis (see below) to the Editorial Secretary, The Biochemical Journal, 7 Warwick Court, London WC1R 5DP. Typescripts should bear the name and address of the person to whom the proof of the paper is to be sent.

Papers submitted should be written concisely. Special attention is directed to the sections below concerning the preparation of the typescript. Typescripts that are not concise or do not conform to the conventions of the *Biochemical Journal* will be returned to the authors for revision. If a paper that has been returned to an author for revision is not resubmitted within one month, it will, on resubmission, be deemed to be a new paper and the date of receipt altered accordingly. A revised paper containing a significant amount of new material will also be redated.

Submission of a paper to the Editorial Board

implies that it reports unpublished work, that it is not under consideration for publication elsewhere, and that if accepted for the *Biochemical Journal* it will not be published elsewhere in the same form, either in English or in any other language, without the consent of the Editorial Board.

Papers should be headed by a concise but informative full title, by the names of the authors (preferably with one forename in full for each author) and by the name and address of the establishment where the work was performed. Details of financial support appear in the acknowledgements at the end of the paper.

Before preparing papers authors should consult a current issue of the Journal to make themselves familiar with the general format, such as the use of cross-headings, lay-out of tables and citation of references. Papers should be in double-spaced typing throughout (including the references and legends of tables and figures) on sheets of uniform size and wide margins. The top copy should be submitted. It cannot be overemphasized that the need for revision of badly prepared typescripts inevitably leads to delays in publication.

Papers on specialized subjects should be presented so that they are intelligible to the ordinary reader of the Journal. Sufficient information must be included to permit repetition of the experimental work.

Short Communications. Typescripts should be submitted *in duplicate*, written in English, and conform strictly to the form of the Journal as far as spelling and abbreviations are concerned. Such communications should not exceed 2400 words in length inclusive of the title, references etc. Authors may include up to two insertions such as tables, figures or schemes; in these cases authors must assess what proportion of a page these insertions will occupy and reduce the number of text words accordingly at the rate of 700 words per full page of the Journal. Authors are advised that the preparation of tables and especially figures is liable to cause a slight increase in publication time. Under no circumstances whatsoever can a complete Short Communication occupy more than four pages of the Journal. Communications should be addressed to the Editorial Secretary, The Biochemical Journal, 7 Warwick Court, London WC1R 5DP. Papers should be complete in themselves; (1) the methods used in experimental work must be adequately described or sufficient references given to allow repetition of the work; (2) sufficient indication of the results of experimental work must be included to justify the claims made.