

The BIOCHEMICAL JOURNAL

August 1973

Volume 134, No. 4

EDITORIAL BOARD

Chairman
D. G. Walker

Deputy Chairmen
C. A. Pasternak
H. B. F. Dixon
K. M. Jones
J. E. Cremer

Editorial Secretary
J. D. Killip

Assistant Editorial Secretary
E. N. Maltby

J. W. Bradbeer
R. B. Cain
M. Cannon
R. A. Cox
R. R. Dils
J. T. Dingle
G. H. Dixon
D. C. Ellwood
P. B. Garland
N. M. Green *
J. J. Holbrook
M. R. Hollaway
R. C. Hughes
J. D. Judah
A. E. Kellie
U. E. Loening
J. A. Lucy
R. D. Marshall

P. A. Mayes
K. Murray
A. C. T. North*
R. E. Offord
D. V. Parke
A. E. Pegg
R. N. Perham
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

Overseas Advisory Panel

F. J. Ballard (Australia), S. Bergström (Sweden), B. Chance (U.S.A.), J.-P. Changeux (France), P. W. Choppin (U.S.A.), W. H. Elliott (Australia), D. Garfinkel (U.S.A.), F. W. E. Gibson (Australia), A. A. Hadjolov (Bulgaria), H. G. Hers (Belgium), W. D. Stein (Israel), H. G. Wittmann (Germany), I. G. Wool (U.S.A.)



London : The Biochemical Society

THE BIOCHEMICAL SOCIETY

OFFICERS AND COMMITTEE, 1973-74

Chairman of the Committee

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

Treasurer

D. F. Elliott

General Secretary

A. P. Mathias

Publications Secretary

R. M. C. Dawson

Meetings Secretary

H. M. Keir

Assistant Meetings Secretary

J. B. Lloyd

Committee

B. A. Askonas, F.R.S.

E. A. Dawes

C. A. Fewson

K. Griffiths

M. G. Harrington

C. H. S. Hitchcock

G. D. Hunter

V. H. T. James

C. F. Mills

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*.

Executive Secretary

A. I. P. Henton (7 Warwick Court, London WC1R 5DP)

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, alternate issues being devoted to **Molecular Aspects** and to **Cellular Aspects** of biochemistry. It is planned that in 1973 six volumes, each volume being made up of four issues, will be published according to the following schedule:

Molecular Aspects			Cellular Aspects		
1973	Vol.	Part	1973	Vol.	Part
1 Jan.	131	1	15 Jan.	132	1
1 Feb.	131	2	15 Feb.	132	2
1 Mar.	131	3	15 Mar.	132	3
1 Apr.	131	4	15 Apr.	132	4
1 May	133	1	15 May	134	1
1 June	133	2	15 June	134	2
1 July	133	3	15 July	134	3
1 Aug.	133	4	15 Aug.	134	4
1 Sept.	135	1	15 Sept.	136	1
1 Oct.	135	2	15 Oct.	136	2
1 Nov.	135	3	15 Nov.	136	3
1 Dec.	135	4	15 Dec.	136	4

Biochemical Society Transactions is a new publication commencing January 1973. It includes extended abstracts of communications (including reports on colloquia and the text of Special Lectures) presented at meetings of the Biochemical Society, book reviews etc. (Note: the *Proceedings of the Biochemical Society* ceased publication in the *Biochemical Journal* at the end of 1972.) In 1973 it is planned that one volume, composed of six issues, will be published.

Biochemical Society Transactions is issued free to all subscribers of the *Biochemical Journal* only: it is not available on a separate subscription.

Subscriptions to the Biochemical Journal and Biochemical Society Transactions. For non-members of the Biochemical Society the subscription in 1973 for

the Journal (plus Transactions) is £70 per year. For non-members in the U.S.A. the subscription is \$180 per year (subject to exchange variation). Terms are cash with order or against proforma invoice. 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, or through your normal agent.

Claims regarding issues lost or damaged in transit should be addressed to the Biochemical Society at the address given in the preceding paragraph. Claims cannot be entertained if they are received later than three months after the date of posting.

Back Numbers. Enquiries for volumes 1–19 of the Journal 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 of the Journal, and also of Transactions, 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) of the Journal have been recorded on microfilm by the EP Group, Microfilm Division, Bradford Road, East Ardsley, Wakefield, Yorks. Details are available from them or the Biochemical Society.

Index of Authors

	PAGE		PAGE		PAGE
Allen, A.	1123	Goodwin, T. W.	1115	Nambudiri, A. M. D.	891
Allison, S. P.	1067	Gorchein, A.	833	Nielsen, R. C.	1001
Arnstein, H. R. V.	969				
Bartley, W.	1119	Halperin, M. L.	885	Padmanaban, G.	847, 859
Berman, B. G.	885	Harding, J. J.	995	Perkins, M.	923, 935
Betteridge, A.	1103	Haslam, J. M.	923, 935, 949	Pilczyk, R.	913
Bradford, N. M.	1023	Hawkins, R. A.	1001	Rall, T. W.	985
Britton, G.	1115	Hunter, W. H.	869, 879	Randle, P. J.	1067
Catelani, D.	1063	Inkson, C.	1031	Satyanaarayana Rao, M. R.	847, 859
Chappell, J. B.	949			Schwartz, A. L.	985
Chatfield, D. H.	869, 879	Jones, A.	959	Seaston, M.	1031
Colombi, A.	1063	Judah, J. D.	1083	Snell, K.	899
Cox, G. B.	1015			Sorlini, C.	1063
Cryer, A.	1119	Kaye, C. M.	1093	Spithill, T. W.	949
Curtis, C. G.	1009	Koffer-Gutmann, A.	969	Steadman, J. H.	1083
Downie, J. A.	1045, 1051	Libby, P. R.	907	Sutcliffe, H. S.	913
Eddy, A. A.	1031	Linnane, A. W.	923, 935, 949	Towers, G. H. N.	891
Eisman, J. A.	913			Treccani, V.	1063
Faulkner, A.	959	Malathi, K.	847	Turner, J. M.	959
Fern, E. B.	1127	Martin, T. J.	913	Vance, C. P.	891
Gamble, M.	1083	McAllister, A.	1067	Veech, R. L.	1001
Garland, P. B.	1045, 1051	McCann, L.	1015		
Garlick, P. J.	1127	McDermott, J. C. B.	1115	Walker, D. G.	899
Gibson, F.	1015	McGivan, J. D.	1023	Wallis, M.	1103
		Miller, A. L.	1001	Wood, K. M.	1009
		Minnikin, S. M.	1123	Wusteman, F. S.	1009

Papers Accepted for Publication

Studies by electron paramagnetic resonance on the catalytic mechanism of nitrogenase of *Klebsiella pneumoniae*.

By B. E. Smith, D. J. Lowe & R. C. Bray

Studies on bone matrix glycoproteins. Incorporation of [1^{-14}C]glucosamine and plasma [^{14}C]glycoprotein into rabbit cortical bone.

By J. T. Trifit & M. Owen

A comparative study of ribonuclease hydrolysis of rat brain-cortex and liver membrane-bound ribosomes.

By H. Simpkins, E. Panko and S. Tay

The purification and properties of the lectin from potato tubers, a hydroxyproline-containing glycoprotein.

By A. K. Allen & A. Neuberger

Biosynthesis and degradation of saccharopine, an intermediate of lysine metabolism.

By F. C. I. Fellows

Lysine metabolism in mammals.

By F. C. I. Fellows & M. H. R. Lewis

Activation of volatile fatty acids in bovine liver and rumen epithelium. Evidence for control by autoregulation.

By R. Ash & G. D. Baird

Phosphopyruvate carboxylase induction by L-tryptophan. Effects on synthesis and degradation of the enzyme.

By F. J. Ballard & M. F. Hopgood

Inhibition of protein synthesis by *N*-methyl-*N*-nitrosourea *in vivo*.

By P. Kleihues & P. N. Magee

A possible role of adenylyl cyclase in the long-term dietary regulation of insulin secretion from rat islets of Langerhans.

By S. L. Howell, I. C. Green & W. Montague

Hydrolysis of CM₁-ganglioside by human liver β -galactosidase isoenzymes.

By M. W. Ho, P. Cheetham & D. Robinson

Palmitoyl-coenzyme A synthetase. Isolation of an enzyme-bound intermediate.

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

The effect of trimethoprim on macromolecular synthesis in *Escherichia coli*. General effects on ribonucleic acid and protein synthesis.

By R. J. Smith & J. E. M. Midgley

The effect of trimethoprim on macromolecular synthesis in *Escherichia coli*. Ribosome maturation in RC^{str} and RC^{rel} strains.

By J. E. M. Midgley & R. J. Smith

The effect of trimethoprim on macromolecular synthesis in *Escherichia coli*. Regulation of ribonucleic acid synthesis by 'magic spot' nucleotides.

By R. J. Smith & J. E. M. Midgley

The design of experiments using isotopes for determination of the rates of disposal of blood-borne substrates *in vivo* with special reference to glucose, ketone bodies, free fatty acids and proteins.

By D. F. Heath & R. N. Barton

The effects of starvation, environmental temperature and injury on the rate of disposal of glucose by the rat.

By D. F. Heath & P. L. Corney

The interconversion and disposal of ketone bodies in untreated and injured post-absorptive rats.

By R. N. Barton

The irreversible disposal rate of free fatty acids in the plasma of fed and starved rats.

By V. J. Cunningham

Amino acid activation in mammalian brain. Purification and characterization of tryptophan-activating enzyme from buffalo brain.

By C.-C. Liu, C.-H. Chung & M.-L. Lee

The occurrence of two types of synthesis of deoxyribonucleic acid during normal growth in *Bacillus subtilis*.

By W. J. Harris

The catalase activity of ferrihaems.

By P. Jones, T. Robson & S. B. Brown

Oxidation of deuteroferrithaem by hydrogen peroxide.

By P. Jones, K. Prudhoe & T. Robson

Mechanism of action of a microsomal inhibitor of protein synthesis potentiated by oxidized glutathione.

By H. T. R. Rupniak & R. V. Quincey

Cross-specificity in some vertebrate and insect glutathione-transferases with methylparathion, di-methyl-p-nitrophenyl phosphorothionate, 1-chloro-2,4-dinitrobenzene and S-crotonyl-N-acetylcysteamine as substrates.

By A. G. Clark, J. N. Smith & T. W. Speir

The formation of ferritin from apoferritin. Catalytic action of apoferritin.

By I. G. Macara, T. G. Hoy & P. M. Harrison

The effect of magnesium ions on the dimethylaniline oxidation rate and electron transfer in liver microsomal fraction.

By A. I. Archakov, I. I. Karuzina, I. S. Kokareva & G. I. Bachmanova

A hydroxyproline-containing glycopeptide released from the walls of sycamore tissue-culture cells by hydrazinolysis.

By M. F. Heath & D. H. Northcote

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. Theoretical contributions will be considered equally with papers dealing with experimental work. All work presented should have as its aim the development of biochemical concepts rather than the mere recording of facts. 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.* (1973), 131, 1-20] (obtainable from the Executive Secretary, The Biochemical Society, 7 Warwick Court, London WC1R 5DP, price 20p. 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.* (1973), 131, 9]. For chemical nomenclature the IUPAC Rules should be followed [see *Biochem. J.* (1973), 131, 12]. The *Biochemical Journal* uses as a standard of spelling the *Concise Oxford Dictionary of Current English* (Clarendon Press, Oxford).

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. Each Short Communication should be provided with a short synopsis (normally not exceeding 50 words). 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.

Index of Authors

- ABBRITTI, G. *see* DE MATTEIS, F. 717-727
 ALI, S. Y. & EVANS, L. The uptake of [^{45}Ca]calcium ions by matrix vesicles isolated from calcifying cartilage 647-650
 ALLEN, A. *see* MINNICKIN, S. M. 1123-1126
 ALLEYNE, G. A. O. *see* ROOBOL, A. 157-165
 ALLISON, A. C. *see* DAVIES, P. 33-41
 ALLISON, S. P. *see* McALLISTER, A. 1067-1081
 AL-TAI, A. H. *see* ROWSELL, E. V. 349-351
 ANDERSON, J. W. *see* BURNELL, J. N. 565-579
 ARMSTRONG, D. T. & FLINT, A. P. F. Isolation and properties of cholesterol ester-storage granules from ovarian tissues 399-406
 ARNSTEIN, H. R. V. *see* KOFFER-GUTMAN, A. 969-983
 ASHCROFT, S. J. H. *see* COOPER, R. H. 599-605
 ASHWORTH, J. M. *see* MALKINSON, A. M. 311-319
- BAIG, M. M. & ROBERTS, R. M. Comparative studies on the carbohydrate-containing membrane components of normal and adenosine 3':5'-cyclic monophosphate-treated Chinese-hamster ovary cells 329-339
 BALLARD, F. J. *see* HOPGOOD, M. F. 445-453
 BARNES, R., COLLERAN, E. M. & JONES, O. T. G. The electron-transport system of mitochondria from the slime mould *Physarum polycephalum* 745-751
 BARTLEY, W. *see* CRYER, A. 1119-1122; FERDINAND, W. 431-436
 BASSETT, R. A., CHAIN, E. B. & CORBETT, K. Biosynthesis of ergotamine by *Claviceps purpurea* (Fr.) Tul. 1-10
 BÉGİN-HEICK, N. The localization of enzymes of intermediary metabolism in *Astasia* and *Euglena* 607-616
 BERKELEY, R. C. W. *see* BREWER, S. J. 271-281
 BERMAN, B. G. & HALPERIN, M. L. Effect of insulin on pyruvate metabolism in epididymal adipose tissue of the rat. Correlation of intracellular pyruvate contents and pyruvate dehydrogenase activity 885-889
 BERNSTEIN, J., VIDELA, L. & ISRAEL, Y. Metabolic alterations produced in the liver by chronic ethanol administration. Changes related to energetic parameters of the cell 515-521
 BERNSTEIN, J. *see also* ISRAEL, Y. 523-529; VIDELA, L. 507-514
 BETTERIDGE, A. & WALLIS, M. Biosynthesis of growth hormone in the rat anterior pituitary gland. Stimulation of biosynthesis *in vitro* by insulin 1103-1113
 BHAGAVAN, H. N. & COURSIN, D. B. Effects of pyridoxine deficiency and DL-p-chlorophenylalanine administration to rats on 5-hydroxytryptamine and noradrenaline concentrations in brain and 5-hydroxytryptamine concentration in blood 763-767
 BLACKWELL, N. *see* TUNNICLIFF, G. 27-32
 BLOXHAM, D. P., CLARK, M. G., GOLDBERG, D. M., HOLLAND, P. C. & LARDY, H. A. The theoretical estimation of substrate cycling *in vivo* 586-587
 BLOXHAM, D. P., CLARK, M. G., HOLLAND, P. C. & LARDY, H. A. A model study of the fructose diphosphatase-phosphofructokinase substrate cycle 581-586
 BLOXHAM, D. P. *see also* CLARK, M. G. 589-597
- BOVERIS, A. & CHANCE, B. The mitochondrial generation of hydrogen peroxide. General properties and effect of hyperbaric oxygen 707-716
 BRADFORD, N. M. & MCGIVAN, J. D. Quantitative characteristics of glutamate transport in rat liver mitochondria 1023-1029
 BRADFORD, N. M. *see also* MCGIVAN, J. D. 209-215
 BRAND, M. D., EVANS, S. M., MENDES-MOURÃO, J. & CHAPPELL, J. B. Fluorocitrate inhibition of aconitate hydratase and the tricarboxylate carrier of rat liver mitochondria 217-224
 BREWER, S. J. & BERKELEY, R. C. W. Control of the production of exo- β -N-acetylglucosaminidase by *Bacillus subtilis* B. De-repression during gluconeogenesis and initial stages of sporulation 271-281
 BRINDLEY, D. N. *see* MANGIAPANE, E. H. 103-112
 BRITTON, G. *see* McDERMOTT, J. C. B. 1115-1117
 BROAD, T. E. & DAWSON, R. M. C. Formation of ceramide phosphorylethanolamine from phosphatidylethanolamine in the rumen protozoan *Entodinium caudatum* 659-662
 BROOMHEAD, V. *see* FERDINAND, W. 431-436
 BURDEN, E. M. & HORTON, A. A. Site of inhibition by 2-amino-1,1,3-tricyanopropene of photosynthetic oxygen evolution by spinach leaf chloroplasts 663-665
 BURNELL, J. N. & ANDERSON, J. W. Adenosine 5'-sulphatophosphate kinase activity in spinach leaf tissue 565-579
- CAMPBELL, P. N., MCILREAVY, D. & TARIN, D. The detection of the messenger ribonucleic acid for the α -lactalbumin of guinea-pig milk 345-347
 CARNIE, J. A. *see* ROWSELL, E. V. 349-351
 CATELANI, D., COLOMBI, A., SORLINI, C. & TRECCANI, V. Metabolism of biphenyl. 2-Hydroxy-6-oxo-6-phenylhexa-2,4-dienoate: the *meta*-cleavage product from 2,3-dihydroxybiphenyl by *Pseudomonas putida* 1063-1066
 CAYGILL, C. P. J. *see* DIPLOCK, A. T. 283-293
 CHAIN, E. B. *see* BASSETT, R. A. 1-10
 CHAKRABARTI, S. *see* GOSWAMI, B. B. 815-816
 CHANCE, B. *see* BOVERIS, A. 707-716
 CHAPPELL, J. B. *see* BRAND, M. D. 217-224; HASLAM, J. M. 949-957; JOHNSON, R. N. 769-774; MCGIVAN, J. D. 209-215
 CHATFIELD, D. H. & HUNTER, W. H. The metabolism of acetamidothiazoles in the rat. 2-Acetamido-, 2-acetamido-4-methyl- and 2-acetamido-4-phenyl-thiazole 869-878
 CHATFIELD, D. H. & HUNTER, W. H. The metabolism of acetamidothiazoles in the rat. 2-Acetamido-4-chloromethylthiazole 879-884
 CHO, Y. D. *see* TUNNICLIFF, G. 27-32
 CINTI, D. L., GRUNDIN, R. & ORRENIUS, S. The effect of ethanol on drug oxidations *in vitro* and the significance of ethanol-cytochrome P-450 interaction 367-375
 CLARK, J. B. *see* LAND, J. M. 539-544, 545-555
 CLARK, K. *see* NORMAN, M. 387-398

- CLARK, M. G., BLOXHAM, D. P., HOLLAND, P. C. & LARDY, H. A. Estimation of the fructose diphosphatase-phosphofructokinase substrate cycle in the flight muscle of *Bombus affinis* 589-597
- CLARK, M. G. *see also* BLOXHAM, D. P. 581-586, 586-587
- CLARKE, N. G. *see* DAWSON, R. M. C. 59-67
- COLLERAN, E. M. & JONES, O. T. G. Studies on the biosynthesis of cytochrome c 89-96
- COLLERAN, E. M. *see also* BARNES, R. 745-751
- COLOMBI, A. *see* CATELANI, D. 1063-1066
- COLSTON, K. W., EVANS, I. M. A., GALANTE, L., MACINTYRE, I. & MOSS, D. W. Regulation of vitamin D metabolism: factors influencing the rate of formation of 1,25-dihydroxycholecalciferol by kidney homogenates 817-820
- COOPER, R. H., ASHCROFT, S. J. H. & RANDLE, P. J. Concentration of adenosine 3':5'-cyclic monophosphate in mouse pancreatic islets measured by a protein-binding radioassay 599-605
- COOTE, J. G., WOOD, D. A. & MANDELSTAM, J. Lethal effect of rifampicin in *Bacillus subtilis* as a complicating factor in the assessment of the lifetime of messenger ribonucleic acid 263-270
- CORBETT, K. *see* BASSETT, R. A. 1-10
- CORNELL, N. W., LUND, P., HEMS, R. & KREBS, H. A. Acceleration of gluconeogenesis from lactate by lysine 671-672
- COURSIN, D. B. *see* BHAGAVAN, H. N. 763-767
- COX, G. B., GIBSON, F. & McCANN, L. Reconstitution of oxidative phosphorylation and the adenosine triphosphate-dependent transhydrogenase activity by a combination of membrane fractions from *uncA⁻* and *uncB⁻* mutant strains of *Escherichia coli* K12 1015-1021
- COX, R. A., PRATT, H., HUVOS, P., HIGGINSON, B. & HIRST, W. A study of the thermal stability of ribosomes and biologically active subribosomal particles 775-793
- CRIPPS, R. E. The microbial metabolism of thiophen-2-carboxylate 353-366
- CROMPTON, M. *see* McGIVAN, J. D. 209-215
- CRYER, A. & BARTLEY, W. Changes in enzyme activities in tissues of rats exposed to hypoxia 1119-1122
- CURTIS, C. G. *see* WOOD, K. M. 1009-1013
- DAVIES, J. *see* SORGER, G. J. 673-685
- DAVIES, P., ALLISON, A. C. & HASWELL, A. D. Selective release of lysosomal hydrolases from phagocytic cells by cytochalasin B 33-41
- DAWES, E. A. *see* SENIOR, P. J. 225-238
- DAWSON, R. M. C. & CLARKE, N. G. A comparison of d-inositol 1,2-cyclic phosphate 2-phosphohydrolase with other phosphodiesterases of kidney 59-67
- DAWSON, R. M. C. *see also* BROAD, T. E. 659-662
- DEERY, D. J. & TAYLOR, K. W. Effects of azaserine and nicotinamide on insulin release and nicotinamide-adenine dinucleotide metabolism in isolated rat islets of Langerhans 557-563
- DE MATTEIS, F., ABBRITTI, G. & GIBBS, A. H. Decreased liver activity of porphyrin-metal chelatase in hepatic porphyria caused by 3,5-diethoxycarbonyl-1,4-dihydrocollidine. Studies in rats and mice 717-727
- DIPLOCK, A. T., CAYGILL, C. P. J., JEFFERY, E. H. & THOMAS, C. The nature of the acid-volatile selenium in the liver of the male rat 283-293
- DODGSON, K. S. *see* HEXT, P. M. 629-635; HOOK, G. E. R. 191-195; WORWOOD, M. 183-190
- DOWNIE, J. A. & GARLAND, P. B. An antimycin A- and cyanide-resistant variant of *Candida utilis* arising during copper-limited growth 1051-1061
- DOWNIE, J. A. & GARLAND, P. B. Respiration-driven proton translocation by yeast mitochondria with differing efficiencies of oxidative phosphorylation 1045-1049
- DRUYAN, R., JAKOVIC, S. & RABINOWITZ, M. Studies of cytochrome synthesis in rat liver 377-385
- DUBE, D. K. *see* GOSWAMI, B. B. 815-816
- EDDY, A. A. *see* MORVILLE, M. 11-26; SEASTON, A. 1031-1043
- EISMAN, J. A. *see* SUTCLIFFE, H. S. 913-921
- ELLIS, R. J. *see* HARTLEY, M. R. 249-262
- EVANS, I. M. A. *see* COLSTON, K. W. 817-820
- EVANS, L. *see* ALI, S. Y. 647-650
- EVANS, S. M. *see* BRAND, M. D. 217-224
- FATTERPAKER, P. *see* SATAV, J. G. 687-695
- FAULKNER, A. *see* JONES, A. 959-968
- FELTS, J. M. *see* RUDEL, L. L. 531-537
- FERDINAND, W., BARTLEY, W. & BROOMHEAD, V. Amino acid production in isolated rat liver mitochondria 431-436
- FERN, E. B. & GARLICK, P. J. The specific radioactivity of the precursor pool for estimates of the rate of protein synthesis 1127-1130
- FLINT, A. P. F. *see* ARMSTRONG, D. T. 399-406
- GALANTE, L. *see* COLSTON, K. W. 817-820
- GAMBLE, M. *see* JUDAH, J. D. 1083-1091
- GAMULIN, S. *see* NORMAN, M. 387-398
- GARLAND, P. B. *see* DOWNIE, J. A. 1045-1049, 1051-1061
- GARLICK, P. J. *see* FERN, E. B. 1127-1130
- GAY, A. *see* O'CONNOR, K. J. 473-480
- GEORGE, S. G. & KENNY, A. J. Studies on the enzymology of purified preparations of brush border from rabbit kidney 43-57
- GHAFOORUNISSA & NARASINGA RAO, B. S. Effect of leucine on enzymes of the tryptophan-niacin metabolic pathway in rat liver and kidney 425-430
- GIBBS, A. H. *see* DE MATTEIS, F. 717-727
- GIBSON, F. *see* COX, G. B. 1015-1021
- GOLDBERG, A. L. *see* GOLDSPINK, D. F. 829-832
- GOLDBERG, D. M. *see* BLOXHAM, D. P. 586-587
- GOLDSPINK, D. F. & GOLDBERG, A. L. The apparent stimulation of proteolysis by adenosine triphosphate in tissue homogenates 829-832
- GOODWIN, T. W. *see* McDERMOTT, J. C. B. 1115-1117
- GORCHEIN, A. Control of magnesium-protoporphyrin chelatase activity in *Rhodopseudomonas sphaeroides*. Role of light, oxygen, and electron and energy transfer 833-845
- GOSWAMI, B. B., CHAKRABARTI, S., DUBE, D. K. & ROY, S. C. Protein synthesis *in vitro* in a system from plant mitochondria 815-816

- GREEN, I. C., HOWELL, S. L., MONTAGUE, W. & TAYLOR, K. W. Regulation of insulin release from isolated islets of Langerhans of the rat in pregnancy. The role of adenosine 3':5'-cyclic monophosphate 481-487
- GREEP, R. O. *see* MOYLE, W. R. 407-413, 415-424
- GRUNDIN, R. *see* CINTI, D. L. 367-375
- HALPERIN, M. L. *see* BERMAN, B. G. 885-889
- HANSON, R. W. *see* HOPGOOD, M. F. 445-453
- HARDING, J. J. Altered heat-lability of a fraction of glutathione reductase in aging human lens 995-1000
- HARTLEY, M. R. & ELLIS, R. J. Ribonucleic acid synthesis in chloroplasts 249-262
- HASLAM, J. M., PERKINS, M. & LINNANE, A. W. Biogenesis of mitochondria. A requirement for mitochondrial protein synthesis for the formation of a normal adenine nucleotide transporter in yeast mitochondria 935-947
- HASLAM, J. M., SPITHILL, T. W., LINNANE, A. W. & CHAPPELL, J. B. Biogenesis of mitochondria. The effects of altered membrane lipid composition on cation transport by mitochondria of *Saccharomyces cerevisiae* 949-957
- HASLAM, J. M. *see also* PERKINS, M. 923-934
- HASWELL, A. D. *see* DAVIES, P. 33-41
- HAWKINS, R. A., MILLER, A. L., NIELSEN, R. C. & VEECH, R. L. The acute action of ammonia on rat brain metabolism *in vivo* 1001-1008
- HEMS, R. *see* CORNELL, N. W. 671-672; KREBS, H. A. 697-705
- HERS, H. G. *see* VAN DEN BERGHE, G. 637-645
- HEXT, P. M., THOMAS, S., ROSE, F. A. & DODGSON, K. S. Determination and significance of L-tyrosine O-sulphate and its deaminated metabolites in normal human and mouse urine 629-635
- HIGGINS, M. J. P. & KEKWICK, R. G. O. An investigation into the role of malonyl-coenzyme A in isoprenoid biosynthesis 295-310
- HIGGINSON, B. *see* COX, R. A. 775-793
- HIRST, W. *see* COX, R. A. 775-793
- HOLLAND, P. C. *see* BLOXHAM, D. P. 581-586, 586-587; CLARK, M. G. 589-597
- HOOK, G. E. R., DODGSON, K. S., ROSE, F. A. & WORWOOD, M. Relative distribution of arylsulphatases A and B in rat liver parenchymal and other cells 191-195
- HOOK, G. E. R. *see also* WORWOOD, M. 183-190
- HOPGOOD, M. F., BALLARD, F. J., RESHEF, L. & HANSON, R. W. Synthesis and degradation of phosphoenolpyruvate carboxylase in rat liver and adipose tissue. Changes during a starvation-re-feeding cycle 445-453
- HORTON, A. A. *see* BURDEN, E. M. 663-665
- HOWELL, S. L. *see* GREEN, I. C. 481-487; MONTAGUE, W. 321-327
- HUE, L. *see* VAN DEN BERGHE, G. 637-645
- HUNTER, W. H. *see* CHATFIELD, D. H. 869-878, 879-884
- HUVOS, P. *see* COX, R. A. 775-793
- ILIFFE, J., KNIGHT, B. L. & MYANT, N. B. Fatty acid synthesis in the brown fat and liver of foetal and newborn rabbits 341-343
- INFANTE, J. P. & KINSELLA, J. E. Inhibition of phosphatidylcholine synthesis in mammary tissue by 2-chloroethyltrimethylammonium chloride 825-827
- INKSON, C. *see* SEASTON, A. 1031-1043
- IRVING, R. *see* MAINWARING, W. I. P. 113-127
- ISRAEL, Y., VIDELA, L., MACDONALD, A. & BERNSTEIN, J. Metabolic alterations produced in the liver by chronic ethanol administration. Comparison between the effects produced by ethanol and by thyroid hormones 523-529
- ISRAEL, Y. *see also* BERNSTEIN, J. 515-521; VIDELA, L. 507-514
- JAKOVVIC, S. *see* DRUYAN, R. 377-385
- JEFFERY, E. H. *see* DIPLOCK, A. T. 283-293
- JOHNSON, R. N. & CHAPPELL, J. B. The transport of inorganic phosphate by the mitochondrial dicarboxylate carrier 769-774
- JONES, A., FAULKNER, A. & TURNER, J. M. Microbial metabolism of amino alcohols. Metabolism of ethanolamine and 1-aminopropan-2-ol in species of *Erwinia* and the roles of amino alcohol kinase and amino alcohol O-phosphate phospho-lyase in aldehyde formation 959-968
- JONES, A. & TURNER, J. M. Microbial metabolism of amino alcohols. 1-Aminopropan-2-ol and ethanolamine metabolism via propionaldehyde and acetaldehyde in a species of *Pseudomonas* 167-182
- JONES, O. T. G. *see* BARNES, R. 745-751; COLLERAN, E. M. 89-96
- JONES, R. W. & WILD, D. G. Regulation of uptake of purines, pyrimidines and amino acids by *Candida utilis* 617-627
- JUDAH, J. D., GAMBLE, M. & STEADMAN, J. H. Biosynthesis of serum albumin in rat liver. Evidence for the existence of 'proalbumin' 1083-1091
- JUNGAS, R. L. *see* MOYLE, W. R. 407-413, 415-424
- KATYARE, S. S. *see* SATAY, J. G. 687-695
- KAYE, C. M. Biosynthesis of mercapturic acids from allyl alcohol, allyl esters and acrolein 1093-1101
- KEKWICK, R. G. O. *see* HIGGINS, M. J. P. 295-310
- KENNY, A. J. *see* GEORGE, S. G. 43-57
- KINSELLA, J. E. *see* INFANTE, J. P. 825-827
- KNIGHT, B. L. *see* ILIFFE, J. 341-343
- KOFFER-GUTMANN, A. & ARNSTEIN, H. R. V. The presence of N-terminal methionine on nascent protein of rat liver and rabbit reticulocytes and its cleavage during polypeptide-chain elongation 969-983
- KORNBERG, H. L. & SOUTAR, A. K. Utilization of gluconate by *Escherichia coli*. Induction of gluconate kinase and 6-phosphogluconate dehydratase activities 489-498
- KREBS, H. A., HEMS, R. & LUND, P. Accumulation of amino acids by the perfused rat liver in the presence of ethanol 697-705
- KREBS, H. A. *see also* CORNELL, N. W. 671-672; WOODS, H. F. 437-443
- LAND, J. M. & CLARK, J. B. Effect of phenylpyruvate on enzymes involved in fatty acid synthesis in rat brain 545-555
- LAND, J. M. & CLARK, J. B. Effect of phenylpyruvate on pyruvate dehydrogenase activity in rat brain mitochondria 539-544
- LARDY, H. A. *see* BLOXHAM, D. P. 581-586, 586-587; CLARK, M. G. 589-597
- LAZARUS, N. R. *see* O'CONNOR, K. J. 473-480

- LEWIS, J. A. & TATA, J. R. Heterogeneous distribution of glucose 6-phosphatase in rat liver microsomal fractions as shown by adaptation of a cytochemical technique 69-78
- LEWIS, R. G., SPENCER, A. F. & SILBERT, J. E. Biosynthesis of glycosaminoglycans by cultured mastocytoma cells 455-463
- LEWIS, R. G., SPENCER, A. F. & SILBERT, J. E. Biosynthesis of glycosaminoglycans by microsomal preparations from cultured mastocytoma cells 465-471
- LIBBY, P. R. Histone acetylation and hormone action. Early effects of aldosterone on histone acetylation in rat kidney 907-912
- LINNANE, A. W. *see* HASLAM, J. M. 935-947, 949-957; PERKINS, M. 923-934
- LLOYD-DAVIES, K. A. *see* MANGIAPANE, E. H. 103-112
- LUND, P. *see* CORNELL, N. W. 671-672; KREBS, H. A. 697-705
- MACDONALD, A. *see* ISRAEL, Y. 523-529
- MACINTYRE, I. *see* COLSTON, K. W. 817-820
- MADAPPALLY, M. M. *see* ZIMMERMAN, E. F. 807-810
- MAINWARING, W. I. P. & IRVING, R. The use of deoxyribonucleic acid-cellulose chromatography and isoelectric focusing for the characterization and partial purification of steroid-receptor complexes 113-127
- MAINWARING, W. I. P. & WILCE, P. A. The control of the form and function of the ribosomes in androgen-dependent tissues by testosterone 795-805
- MAINWARING, W. I. P. *see also* MANGAN, F. R. 129-142
- MALATHI, K. *see* PADMANABAN, G. 847-857
- MALKINSON, A. M. & ASHWORTH, J. M. Adenosine 3':5'-cyclic monophosphate concentrations and phosphodiesterase activities during axenic growth and differentiation of cells of the cellular slime mould *Dictyostelium discoideum* 311-319
- MANCHESTER, K. L. *see* WIMBURST, J. M. 143-156
- MANDELSTAM, J. *see* COOTE, J. G. 263-270
- MANGAN, F. R., PEGG, A. E. & MAINWARING, W. I. P. A reappraisal of the effects of adenosine 3':5'-cyclic monophosphate on the function and morphology of the rat prostate gland 129-142
- MANGIAPANE, E. H., LLOYD-DAVIES, K. A. & BRINDLEY, D. N. A study of some enzymes of glycerolipid biosynthesis in rat liver after subtotal hepatectomy 103-112
- MARKUS, H. *see* OWEN, O. E. 499-506
- MARTIN, R. O. *see* TUNNICLIFF, G. 27-32
- MARTIN, T. J. *see* SUTCLIFFE, H. S. 913-921
- MCALISTER, A., ALLISON, S. P. & RANDLE, P. J. Effects of dichloroacetate on the metabolism of glucose, pyruvate, acetate, 3-hydroxybutyrate and palmitate in rat diaphragm and heart muscle *in vitro* and on extraction of glucose, lactate, pyruvate and free fatty acids by dog heart *in vivo* 1067-1081
- McCANN, L. *see* COX, G. B. 1015-1021
- MCDERMOTT, J. C. B., BRITTON, G. & GOODWIN, T. W. Carotenoid biosynthesis in a *Flavobacterium* sp.: stereochemistry of hydrogen elimination in the desaturation of phytoene to lycopene, rubixanthin and zeaxanthin 1115-1117
- MCGIVAN, J. D., BRADFORD, N. M., CROMPTON, M. & CHAPPELL, J. B. Effect of L-leucine on the nitrogen metabolism of isolated rat liver mitochondria 209-215
- MCGIVAN, J. D. *see also* BRADFORD, N. M. 1023-1029
- MCLIREAVY, D. *see* CAMPBELL, P. N. 345-347
- MENDES-MOURÃO, J. *see* BRAND, M. D. 217-224
- MILLER, A. L. *see* HAWKINS, R. A. 1001-1008
- MINNIKIN, S. M. & ALLEN, A. Cell-surface mucosubstances from trypsin disaggregation of normal and virus-transformed lines of baby-hamster kidney cells 1123-1126
- MONTAGUE, W. & HOWELL, S. L. The mode of action of adenosine 3':5'-cyclic monophosphate in mammalian islets of Langerhans. Effects of insulin secretagogues on islet-cell protein kinase activity 321-327
- MONTAGUE, W. *see also* GREEN, I. C. 481-487
- MORRIS, M. D. *see* RUDEL, L. L. 531-537
- MORVILLE, M., REID, M. & EDDY, A. A. Amino acid absorption by mouse ascites-tumour cells depleted of both endogenous amino acids and adenosine triphosphate 11-26
- MOSS, D. W. *see* COLSTON, K. W. 817-820
- MOULE, M. L. & YIP, C. C. Insulin biosynthesis in the bullhead, *Ictalurus nebulosus*, and the effect of temperature 753-761
- MOYLE, W. R., JUNGAS, R. L. & GREEP, R. O. Influence of luteinizing hormone and adenosine 3':5'-cyclic monophosphate on the metabolism of free and esterified cholesterol in mouse Leydig-cell tumours 407-413
- MOYLE, W. R., JUNGAS, R. L. & GREEP, R. O. Metabolism of free and esterified cholesterol by Leydig-cell tumour mitochondria 415-424
- MOZZOLI, M. *see* OWEN, O. E. 499-506
- MUDD, J. B. *see* PANTER, R. A. 655-658
- MYANT, N. B. *see* ILIFFE, J. 341-343
- NAMBUDIRI, A. M. D., VANCE, C. P. & TOWERS, G. H. N. Effect of light on enzymes of phenylpropanoid metabolism and hispidin biosynthesis in *Polyporus hispidus* 891-897
- NARASINGA RAO, B. S. *see* GHAFOORUNISSA 425-430
- NETRAWALI, M. S. *see* SATAV, J. G. 687-695
- NEWSHOLME, E. A. *see* SUGDEN, P. H. 97-101
- NIELSEN, R. C. *see* HAWKINS, R. A. 1001-1008
- NORMAN, M., GAMULIN, S. & CLARK, K. The distribution of ribosomes between different functional states in livers of fed and starved mice 387-398
- O'CONNOR, K. J., GAY, A. & LAZARUS, N. R. The biosynthesis of glucagon in perfused rat pancreas 473-480
- O'DONNELL, J. M. & SMITH, M. W. Influence of cholecalciferol (vitamin D₃) on the initial kinetics of the uptake of calcium by rat small-intestinal mucosa 667-669
- OEDING, V. & SCHLEGEL, H. G. β -Ketothiolase from *Hydrogenomonas eutropha* H16 and its significance in the regulation of poly- β -hydroxybutyrate metabolism 239-248
- ORRENIUS, S. *see* CINTI, D. L. 367-375
- OTTAWAY, J. H. Normalization in the fitting of data by iterative methods. Application to tracer kinetics and enzyme kinetics 729-736
- OWEN, O. E., MARKUS, H., SARSHIK, S. & MOZZOLI, M. Relationship between plasma and muscle concentrations of ketone bodies and free fatty acids in fed, starved and alloxan-diabetic states 499-506

- PADMANABAN, G., SATYANARAYANA RAO, M. R. & MALATHI, K. A model for the regulation of δ -amino-laevulinate synthetase induction in rat liver 847-857
- PADMANABAN, G. *see also* SATYANARAYANA RAO, M. R. 859-868
- PANTER, R. A. & MUDD, J. B. Some aspects of carnitine metabolism in avocado (*Persea americana*) 655-658
- PEGG, A. E. *see* MANGAN, F. R. 129-142
- PERKINS, M., HASLAM, J. M. & LINNANE, A. W. Biogenesis of mitochondria. The effects of physiological and genetic manipulation of *Saccharomyces cerevisiae* on the mitochondrial transport systems for tricarboxylate-cycle anions 923-934
- PERKINS, M. *see also* HASLAM, J. M. 935-947
- PILCZYK, R. *see* SUTCLIFFE, H. S. 913-921
- PRATT, H. *see* COX, R. A. 775-793
- RABINOWITZ, M. *see* DRUYAN, R. 377-385
- RAJWADE, M. S. *see* SATAV, J. G. 687-695
- RALL, T. W. *see* SCHWARTZ, A. L. 985-993
- RAMASARMA, T. *see* RANGANATHAN, S. 737-743
- RANDLE, P. J. *see* COOPER, R. H. 599-605; McALLISTER, A. 1067-1081; WHITEHOUSE, S. 651-653
- RANGANATHAN, S. & RAMASARMA, T. Inhibition of the biosynthesis of sterols by phenyl and phenolic compounds in rat liver 737-743
- REID, M. *see* MORVILLE, M. 11-26
- RESHEF, L. *see* HOPGOOD, M. F. 445-453
- ROBERTS, R. M. *see* BAIG, M. M. 329-339
- ROOBOL, A. & ALLEYNE, G. A. O. Regulation of renal gluconeogenesis by calcium ions, hormones and adenosine 3':5'-cyclic monophosphate 157-165
- ROSE, F. A. *see* HEXT, P. M. 629-635; HOOK, G. E. R. 191-195; WORWOOD, M. 183-190
- ROWSELL, E. V., AL-TAI, A. H., CARNIE, J. A. & ROWSELL, K. V. Increased liver L-serine-pyruvate aminotransferase activity under gluconeogenic conditions 349-351
- ROWSELL, K. V. *see* ROWSELL, E. V. 349-351
- ROY, S. C. *see* GOSWAMI, B. B. 815-816
- RUDEL, L. L., FELTS, J. M. & MORRIS, M. D. Exogenous cholesterol transport in rabbit plasma lipoproteins 531-537
- SARSHIK, S. *see* OWEN, O. E. 499-506
- SATAV, J. G., RAJWADE, M. S., KATYARE, S. S., NETRAWALI, M. S., FATTERPAKER, P. & SREENIVASAN, A. The significance of promitochondrial structures in rat liver for mitochondrial biogenesis 687-695
- SATYANARAYANA RAO, M. R. & PADMANABAN, G. Biochemical effects of the porphyrinogenic drug allylisopropylacetamide. A comparative study with phenobarbital 859-868
- SATYANARAYANA RAO, M. R. *see also* PADMANABAN, G. 847-857
- SCHLEGEL, H. G. *see* OEDING, V. 239-248
- SCHWARTZ, A. L. & RALL, T. W. Hormonal regulation of glycogen metabolism in neonatal rat liver 985-993
- SCOPES, R. K. Studies with a reconstituted muscle glycolytic system. The rate and extent of creatine phosphorylation by anaerobic glycolysis 197-208
- SEASTON, A., INKSON, C. & EDDY, A. A. The absorption of protons with specific amino acids and carbohydrates by yeast 1031-1043
- SENIOR, P. J. & DAWES, E. A. The regulation of poly- β -hydroxybutyrate metabolism in *Azotobacter bierjerinckii* 225-238
- SHARMA, D. C. Aberration of porphyrin metabolism in iron-deficient anaemic rats 821-823
- SILBERT, J. E. *see* LEWIS, R. G. 455-463, 465-471
- SMITH, M. W. *see* O'DONNELL, J. M. 667-669
- SNELL, K. & WALKER, D. G. Glucose metabolism in the newborn rat. Hormonal effects *in vivo* 899-906
- SORGER, G. J. & DAVIES, J. Regulation of nitrate reductase of *Neurospora* at the level of transcription and translation 673-685
- SORLINI, C. *see* CATELANI, D. 1063-1066
- SOUTAR, A. K. *see* KORNBERG, H. L. 489-498
- SPENCER, A. F. *see* LEWIS, R. G. 455-463, 465-471
- SPITHILL, T. W. *see* HASLAM, J. M. 949-957
- SREENIVASAN, A. *see* SATAV, J. G. 687-695
- STEADMAN, J. H. *see* JUDAH, J. D. 1083-1091
- SUGDEN, P. H. & NEWSHOLME, E. A. Activities of hexokinase, phosphofructokinase, 3-oxo acid coenzyme A-transferase and acetoacetyl-coenzyme A thiolase in nervous tissue from vertebrates and invertebrates 97-101
- SUTCLIFFE, H. S., MARTIN, T. J., EISMAN, J. A. & PILCZYK, R. Binding of parathyroid hormone to bovine kidney-cortex plasma membranes 913-921
- TARIN, D. *see* CAMPBELL, P. N. 345-347
- TATA, J. R. *see* LEWIS, J. A. 69-78
- TAYLOR, K. W. *see* DEERY, D. J. 557-563; GREEN, I. C. 481-487
- THOMAS, C. *see* DIPLOCK, A. T. 283-293
- THOMAS, G. & THRELFALL, D. R. Polyprenyl pyrophosphate-p-hydroxybenzoate polyprenyltransferase activity in mitochondria of broad-bean seeds and yeast 811-814
- THOMAS, S. *see* HEXT, P. M. 629-635
- THOMPSON, W. L. & WANNEMACHER, R. W., JR. Effects of infection with *Diplococcus pneumoniae* on synthesis of ribonucleic acids in rat liver 79-87
- THRELFALL, D. R. *see* THOMAS, G. 811-814
- TOWERS, G. H. N. *see* NAMBUDIRI, A. M. D. 891-897
- TRECCANI, V. *see* CATELANI, D. 1063-1066
- TUNNICLIFF, G., CHO, Y. D., BLACKWELL, N., MARTIN, R. O. & WOOD, J. D. The uptake of γ -aminobutyrate by organotypic cultures of chick spinal cord 27-32
- TURNER, J. M. *see* JONES, A. 167-182, 959-968
- VANCE, C. P. *see* NAMBUDIRI, A. M. D. 891-897
- VAN DEN BERGHE, G., HUE, L. & HERST, H. G. Effect of the administration of fructose on the glycogenolytic action of glucagon. An investigation of the pathogenesis of hereditary fructose intolerance 637-645
- VEECH, R. L. *see* HAWKINS, R. A. 1001-1008
- VIDELA, L., BERNSTEIN, J. & ISRAEL, Y. Metabolic alterations produced in the liver by chronic ethanol administration. Increased oxidative capacity 507-514
- VIDELA, L. *see also* BERNSTEIN, J. 515-521; ISRAEL, Y. 523-529
- WALKER, D. G. *see* SNELL, K. 899-906
- WALLIS, M. *see* BETTERIDGE, A. 1103-1113
- WANNEMACHER, R. W., JR. *see* THOMPSON, W. L. 79-87

- WHITEHOUSE, S. & RANDLE, P. J. Activation of pyruvate dehydrogenase in perfused rat heart by dichloroacetate 651-653
- WILCE, P. A. *see* MAINWARING, W. I. P. 795-805
- WILD, D. G. *see* JONES, R. W. 617-627
- WIMHURST, J. M. & MANCHESTER, K. L. Induction and suppression of the key enzymes of glycolysis and gluconeogenesis in isolated perfused rat liver in response to glucose, fructose and lactate 143-156
- WOOD, D. A. *see* COOTE, J. G. 263-270
- WOOD, J. D. *see* TUNNICLIFF, G. 27-32
- WOOD, K. M., WUSTEMAN, F. S. & CURTIS, C. G. The degradation of intravenously injected chondroitin 4-sulphate in the rat 1009-1013
- Woods, H. F. & KREBS, H. A. Xylitol metabolism in the isolated perfused rat liver 437-443
- WORWOOD, M., DODGSON, K. S., HOOK, G. E. R. & ROSE, F. A. Problems associated with the assay of arylsulphatases A and B of rat tissues 183-190
- WORWOOD, M. *see also* HOOK, G. E. R. 191-195
- WUSTEMAN, F. S. *see* WOOD, K. M. 1009-1013
- YIP, C. C. *see* MOULE, M. L. 753-761
- ZIMMERMAN, E. F. & MADAPPALLY, M. M. Sialyltransferase: regulation of α -foetoprotein microheterogeneity during development 807-810

Index of Subjects

- Acetaldehyde, metabolism of ethanolamine via, in *Pseudomonas* sp. P6 (N.C.I.B. 10431) (Jones, A. & Turner, J. M.) 167-182
- Acetaldehyde, roles of amino alcohol kinase and amino alcohol *O*-phosphate phospho-lyase in the formation of, during the metabolism of ethanolamine by *Erwinia* spp. (Jones, A., Faulkner, A. & Turner, J. M.) 959-968
- 2-Acetamido-4-chloromethylthiazole, metabolism of, in the rat (Chatfield, D. H. & Hunter, W. H.) 879-884
- 2-Acetamido-4-methylthiazole, metabolism of, in the rat (Chatfield, D. H. & Hunter, W. H.) 869-878
- 2-Acetamido-4-phenylthiazole, metabolism of, in the rat (Chatfield, D. H. & Hunter, W. H.) 869-878
- 2-Acetamidothiazole, metabolism of, in the rat (Chatfield, D. H. & Hunter, W. H.) 869-878
- Acetate, effects of dichloroacetate on the metabolism of glucose, pyruvate, 3-hydroxybutyrate, palmitate and, in rat diaphragm and heart muscle *in vitro* (McAllister, A., Allison, S. P. & Randle, P. J.) 1067-1081
- Acetoacetate, relationship between the concentrations of non-esterified fatty acids, 3-hydroxybutyrate and, in plasma and skeletal muscle in fed, starved and alloxan-diabetic rats (Owen, O. E., Markus, H., Sarshik, S. & Mozzoli, M.) 499-506
- Acetylation, specific, early effects of aldosterone on, of histone F2a1 in rat kidney (Libby, P. R.) 907-912
- Acetyl-coenzyme A carboxylase, effect of phenylpyruvate on the activity of, of rat cerebral-cortex cytosol (Land, J. M. & Clark, J. B.) 545-555
- β -N-Acetylglucosaminidase, exo-, de-repression of, during gluconeogenesis and the initial stages of sporulation in *Bacillus subtilis* B (Brewer, S. J. & Berkeley, R. C. W.) 271-281
- Acid hydrolases, *see* Hydrolases, acid
- Aconitate hydratase, inhibition by fluorocitrate of the activity of, and the carrier for the transport of tricarboxylic acids in isolated rat liver mitochondria (Brand, M. D., Evans, S. M., Mendes-Mourão, J. & Chappell, J. B.) 217-224
- Acrolein, identification of mercapturic acids as metabolites of allyl alcohol, allyl esters and, in urine in the rat (Kaye, C. M.) 1093-1101
- Adenine nucleotide transporter, normal requirement for mitochondrial biosynthesis of protein for the formation of, in *Saccharomyces cerevisiae* mitochondria (Haslam, J. M., Perkins, M. & Linnane, A. W.) 935-947
- Adenine nucleotides, changes in the concentrations of, during the metabolism of xylitol in isolated perfused rat liver (Woods, H. F. & Krebs, H. A.) 437-443
- Adenine nucleotides, changes in the concentrations of, in rat liver produced by the chronic administration of ethanol (Bernstein, J., Videla, L. & Israel, Y.) 515-521
- Adenosine 3':5'-cyclic monophosphate, changes in the concentration of, and the activity of phosphodiesterase during axenic growth and differentiation of cells of the slime mould *Dictyostelium discoideum* (Malkinson, A. M. & Ashworth, J. M.) 311-319
- Adenosine 3':5'-cyclic monophosphate, concentration of, in isolated mouse pancreas islets of Langerhans measured by a protein-binding radioassay method (Cooper, R. H., Ashcroft, S. J. H. & Randle, P. J.) 599-605
- Adenosine 3':5'-cyclic monophosphate, 6-N,2'-O-dibutyryl, effect of, on the metabolism of glycogen in neonatal rat liver (Schwartz, A. L. & Rall, T. W.) 985-993
- Adenosine 3':5'-cyclic monophosphate, 6-N,2'-O-dibutyryl, effect of treatment with, on the carbohydrate-containing components of the plasma membranes of Chinese-hamster ovary cells (Baig, M. M. & Roberts, R. M.) 329-339
- Adenosine 3':5'-cyclic monophosphate, 6-N,2'-O-dibutyryl, effects of, on the metabolism of glucose in the newborn rat *in vivo* (Snell, K. & Walker, D. G.) 899-906
- Adenosine 3':5'-cyclic monophosphate, effects of luteinizing hormone and, on the metabolism of free and esterified cholesterol in mouse Leydig-cell tumour (Moyle, W. R., Jungas, R. L. & Greep, R. O.) 407-413
- Adenosine 3':5'-cyclic monophosphate, evidence that agents affecting the release of insulin by isolated rat pancreas islets of Langerhans by altering the concentration of, exert their effects by altering the activity of an adenosine 3':5'-cyclic monophosphate-dependent protein kinase (Montague, W. & Howell, S. L.) 321-327
- Adenosine 3':5'-cyclic monophosphate, reappraisal of the effects of, on the function and morphology of rat prostate gland (Mangan, F. R., Pegg, A. E. & Mainwaring, W. I. P.) 129-142
- Adenosine 3':5'-cyclic monophosphate, regulation of gluconeogenesis in rat kidney-cortex slices by calcium ions, hormones and (Roobol, A. & Alleyne, G. A. O.) 157-165
- Adenosine 3':5'-cyclic monophosphate, role of, in the effect of the administration of fructose on the glyco-genolytic activity of glucagon in human patients with hereditary fructose intolerance and in the mouse (Van den Berghe, G., Hue, L. & Hers, H. G.) 637-645
- Adenosine 3':5'-cyclic monophosphate, role of, in the regulation of the release of insulin by isolated rat pancreas islets of Langerhans during pregnancy (Green, I. C., Howell, S. L., Montague, W. & Taylor, K. W.) 481-487
- Adenosine 5'-sulphatophosphate kinase, activity of, in isolated spinach leaf chloroplasts (Burnell, J. N. & Anderson, J. W.) 565-579
- Adenosine triphosphatase, sodium-plus-potassium ion-stimulated, comparison between the effects produced by the chronic administration of ethanol and by thyroxine on the activity of, and other parameters in rat liver (Israel, Y., Videla, L., Macdonald, A. & Bernstein, J.) 523-529
- Adenosine triphosphatase, sodium-plus-potassium ion-stimulated, increased activity of, in rat liver produced by the chronic administration of ethanol (Bernstein, J., Videla, L. & Israel, Y.) 515-521
- Adenosine triphosphate, absorption of amino acids by mouse ascites-tumour cells depleted of both endogenous amino acids and (Morville, M., Reid, M. & Eddy, A. A.) 11-26

- Adenosine triphosphate, apparent stimulation by, of proteolysis in homogenates of various rat tissues (Goldspink, D. F. & Goldberg, A. L.) 829-832
- Adenosine triphosphate, requirement for mitochondrial biosynthesis of protein for the formation of the normal adenine nucleotide transporter responsible for the transport of, in *Saccharomyces cerevisiae* (Haslam, J. M., Perkins, M. & Linnane, A. W.) 935-947
- Adenosine triphosphate, role of, in the effect of the administration of fructose on the glycogenolytic activity of glucagon in human patients with hereditary fructose intolerance and in the mouse (Van den Berghe, G., Hue, L. & Hers, H. G.) 637-645
- Adenylate cyclase, evidence for a link between the binding of parathyroid hormone and the parathyroid hormone-stimulated activity of, of ox kidney-cortex plasma membranes (Sutcliffe, H. S., Martin, T. J., Eisman, J. A. & Pilczyk, R.) 913-921
- Adenylate cyclase, increased activity of, and the role of adenosine 3':5'-cyclic monophosphate in the regulation of the release of insulin by isolated rat pancreas islets of Langerhans during pregnancy (Green, I. C., Howell, S. L., Montague, W. & Taylor, K. W.) 481-487
- Adipose tissue, brown, rabbit, changes in the biosynthesis of fatty acids in, and liver during perinatal development (Ilfie, J., Knight, B. L. & Myant, N. B.) 341-343
- Adipose tissue, epididymal, rat, changes during a starvation-re-feeding cycle in the biosynthesis and degradation of phosphoenolpyruvate carboxylase in, and liver (Hopgood, M. F., Ballard, F. J., Reshef, L. & Hanson, R. W.) 445-453
- Adipose tissue, epididymal, rat, effect of insulin on the metabolism of pyruvate in (Berman, B. G. & Halperin, M. L.) 885-889
- Adrenaline, regulation of gluconeogenesis in rat kidney-cortex slices by calcium ions, adenosine 3':5'-cyclic monophosphate, glucagon and (Roobol, A. & Alleyne, G. A. O.) 157-165
- Aging, altered thermal lability of a fraction of glutathione reductase in human lens during (Harding, J. J.) 995-1000
- Alanine, diversion of, from gluconeogenesis to the formation of other amino acids in perfused rat liver in the presence of ethanol (Krebs, H. A., Hems, R. & Lund, P.) 697-705
- Alanine, incorporation of, into ergotamine by *Claviceps purpurea* (Fr.) Tul. (Bassett, R. A., Chain, E. B. & Corbett, K.) 1-10
- Albumin, serum, evidence for the existence of proalbumin as a precursor in the biosynthesis of, in rat liver (Judah, J. D., Gamble, M. & Steadman, J. H.) 1083-1091
- Aldosterone, early effects of, on the specific acetylation of histone F2a1 in rat kidney (Libby, P. R.) 907-912
- Alloxan-diabetes, see Diabetes, alloxan-
- Allyl alcohol, identification of mercapturic acids as metabolites of acrolein, allyl esters and, in urine in the rat (Kaye, C. M.) 1093-1101
- Allyl esters, identification of mercapturic acids as metabolites of acrolein, allyl alcohol and, in urine in the rat (Kaye, C. M.) 1093-1101
- 2-Allyl-2-isopropylacetamide, changes in the activities of porphyrin-metal chelatase and 5-aminolaevulinate synthetase in rat and mouse liver in hepatic porphyria induced by treatment with 3,5-diethoxycarbonyl-1,4-dihydrocollidine and with 2-allyl-2-isopropylacetamide (De Matteis, F., Abbritti, G. & Gibbs, A. H.) 717-727
- 2-Allyl-2-isopropylacetamide, comparison of the biochemical effects of phenobarbital and, in rat liver (Satyanarayana Rao, M. R. & Padmanaban, G.) 859-868
- 2-Allyl-2-isopropylacetamide, regulation of the induction by, of the activity of 5-aminolaevulinate synthetase in rat liver (Padmanaban, G., Satyanarayana Rao, M. R. & Malathi, K.) 847-857
- Allylmercapturic acid, identification of, as a metabolite of triallyl phosphate, sodium allyl sulphate and allyl nitrate in urine in the rat (Kaye, C. M.) 1093-1101
- Amino acids, absorption of, by mouse ascites-tumour cells depleted of both endogenous amino acids and adenosine triphosphate (Morville, M., Reid, M. & Eddy, A. A.) 11-26
- Amino acids, absorption of protons with specific carbohydrates and, by *Saccharomyces* spp. (Seaston, A., Inkson, C. & Eddy, A. A.) 1031-1043
- Amino acids, accumulation of, by perfused rat liver in the presence of ethanol (Krebs, H. A., Hems, R. & Lund, P.) 697-705
- Amino acids, production of, in isolated rat liver mitochondria (Ferdinand, W., Bartley, W. & Broomhead, V.) 431-436
- Amino acids, regulation of the uptake of purines, pyrimidines and, by *Candida utilis* N.C.Y.C. 321 (Jones, R. W. & Wild, D. G.) 617-627
- Amino alcohol kinase, roles of, and amino alcohol *O*-phosphate phospho-lyase in the formation of aldehydes during the metabolism of ethanolamine and 1-amino-propan-2-ol by *Erwinia* spp. (Jones, A., Faulkner, A. & Turner, J. M.) 959-968
- Amino alcohol *O*-phosphate phospho-lyase, roles of amino alcohol kinase and, in the formation of aldehydes during the metabolism of ethanolamine and 1-amino-propan-2-ol by *Erwinia* spp. (Jones, A., Falkner, A. & Turner, J. M.) 959-968
- Amino alcohols, metabolism of, via aldehydes in *Pseudomonas* sp. P6 (N.C.I.B. 10431) (Jones, A. & Turner, J. M.) 167-182
- 4-Aminobutyrate, uptake of, by organotypic cultures of chick-embryo spinal cord (Tunnicliff, G., Cho, Y. D., Blackwell, N., Martin, R. O. & Wood, J. D.) 27-32
- 5-Aminolaevulinate, incorporation of amino acids and, into cytochromes in rat liver (Druyan, R., Jakovcic, S. & Rabinowitz, M.) 377-385
- 5-Aminolaevulinate, increased excretion of, and decreased excretion of porphobilinogen in urine of the iron-deficient anaemic rat (Sharma, D. C.) 821-823
- 5-Aminolaevulinate synthetase, comparison of the abilities of 2-allyl-2-isopropylacetamide and phenobarbital to induce the activity of, and to cause other biochemical effects in rat liver (Satyanarayana Rao, M. R. & Padmanaban, G.) 859-868
- 5-Aminolaevulinate synthetase, increased activity of, in rat and mouse liver in hepatic porphyria induced by treatment with 3,5-diethoxycarbonyl-1,4-dihydrocollidine and with 2-allyl-2-isopropylacetamide (De Matteis, F., Abbritti, G. & Gibbs, A. H.) 717-727
- 5-Aminolaevulinate synthetase, regulation of the induction by 2-allyl-2-isopropylacetamide of the activity of, in rat

- liver (Padmanaban, G., Satyanarayana Rao, M. R. & Malathi, K.) 847-857
- 1-Aminopropan-2-ol, metabolism of, and the roles of amino alcohol kinase and amino alcohol *O*-phosphate phospho-lyase in the formation of propionaldehyde by *Erwinia* spp. (Jones, A., Faulkner, A. & Turner, J. M.) 959-968
- 1-Aminopropan-2-ol, metabolism of, via propionaldehyde in *Pseudomonas* sp. P6 (N.C.I.B. 10431) (Jones, A. & Turner, J. M.) 167-182
- Aminopyrine *N*-demethylase, effect of ethanol on the activity of, in rat liver slices and microsomal fraction (Cinti, D. L., Grundin, R. & Orrenius, S.) 367-375
- 2-Amino-1,1,3-tricyanopropene, site of inhibition by, of photosynthetic oxygen evolution by isolated spinach leaf chloroplasts (Burden, E. M. & Horton, A. A.) 663-665
- Ammonia, acute action of, on metabolism in rat brain *in vivo* (Hawkins, R. A., Miller, A. L., Nielsen, R. C. & Veech, R. L.) 1001-1008
- Ammonia, effect of L-leucine on the metabolism of, in isolated rat liver mitochondria (McGivan, J. D., Bradford, N. M., Crompton, M. & Chappell, J. B.) 209-215
- Ammonia, effects of nitrate and, on the biosynthesis of nitrate reductase at the level of gene transcription and translation of messenger ribonucleic acid in *Neurospora* spp. (Sorger, G. J. & Davies, J.) 673-685
- Amniotic fluid, mouse, role of sialyltransferase in the regulation of the microheterogeneity of α -foetoprotein in, and foetal plasma during development (Zimmerman, E. F. & Madappally, M. M.) 807-810
- Anaemia, iron-deficiency, aberration of porphyrin metabolism in rats suffering from (Sharma, D. C.) 821-823
- Androgen-receptor protein, accessory-sex-gland, rat, use of deoxyribonucleic acid-cellulose chromatography and isoelectric focusing for the characterization and partial purification of the 8S complex between 5 α -dihydrotestosterone (17 β -hydroxy-5 α -androstan-3-one) and (Mainwaring, W. I. P. & Irving, R.) 113-127
- Androgens, control by testosterone of the form and function of ribosomes in tissues dependent on (Mainwaring, W. I. P. & Wilce, P. A.) 795-805
- Androgens, evidence that adenosine 3':5'-cyclic monophosphate and, are not interchangeable in their effects on the function and morphology of rat prostate gland (Mangan, F. R., Pegg, A. E. & Mainwaring, W. I. P.) 129-142
- Aniline 4-hydroxylase, effect of ethanol on the activity of, in rat liver microsomal fraction (Cinti, D. L., Grundin, R. & Orrenius, S.) 367-375
- Anions, effects of physiological and genetic manipulations on the transport systems for, of tricarboxylic acid-cycle intermediates in *Saccharomyces cerevisiae* mitochondria (Perkins, M., Haslam, J. M. & Linnane, A. W.) 923-934
- Arylsulphatases A and B, lysosomal, problems associated with the assay of the activities of, of rat liver and other tissues (Worwood, M., Dodgson, K. S., Hook, G. E. R. & Rose, F. A.) 183-190
- Arylsulphatases A and B, lysosomal, relative distribution of, in rat liver parenchymal and other cells (Hook, G. E. R., Dodgson, K. S., Rose, F. A. & Worwood, M.) 191-195
- Astasia longa*, intracellular localization of enzymes of intermediary metabolism in *Euglena gracilis* and (Bégin-Heick, N.) 607-616
- Avocado (*Persea americana*) mesocarp, involvement of L-carnitine in the β -oxidation of fatty acids by mitochondria of (Panter, R. A. & Mudd, J. B.) 655-658
- Azaserine, effects of, on the release of insulin by and the metabolism of nicotinamide-adenine dinucleotide in isolated rat pancreas islets of Langerhans (Deery, D. J. & Taylor, K. W.) 557-563
- Azotobacter beijerinckii* N.C.I.B. 9067, regulation of the metabolism of poly-3-hydroxybutyrate metabolism in (Senior, P. J. & Dawes, E. A.) 225-238
- Bacillus stearothermophilus*, thermal stability of biologically active ribosomal subparticles from (Cox, R. A., Pratt, H., Huvos, P., Higginson, B. & Hirst, W.) 775-793
- Bacillus subtilis* B, de-repression of exo- β -N-acetyl-glucosaminidase during gluconeogenesis and the initial stages of sporulation in (Brewer, S. J. & Berkeley, R. C. W.) 271-281
- Bacillus subtilis* 168, lethal effect of rifampicin in, as a complicating factor in the assessment of the lifetime of messenger ribonucleic acid (Coote, J. G., Wood, D. A. & Mandelstam, J.) 263-270
- Bacteriochlorophyll, role of light, oxygen, electron transfer and energy transfer in the control of the pathway for the biosynthesis of, from protoporphyrin in *Rhodopseudomonas sphaeroides* (Gorchein, A.) 833-845
- Bean broad (*Vicia faba*), activity of polyprenyl pyrophosphate-p-hydroxybenzoate polyprenyltransferase in mitochondria of seeds of (Thomas, G. & Threlfall, D. R.) 811-814
- Benzoate, identification of, as a metabolite of 2,3-dihydroxybiphenyl in *Pseudomonas putida* (Catelani, D., Colombi, A., Sorlini, C. & Treccani, V.) 1063-1066
- Biphenyl, metabolic pathway for the degradation of, by *Pseudomonas putida* (Catelani, D., Colombi, A., Sorlini, C. & Treccani, V.) 1063-1066
- Blood, rat, effects of pyridoxine deficiency and of DL-p-chlorophenylalanine administration on the concentrations of 5-hydroxytryptamine in, and brain (Bhagavan, H. N. & Coursin, D. B.) 763-767
- Bombus affinis*, see Bumble-bee
- Bone, uptake of calcium ions by matrix vesicles isolated from calcifying epiphyseal cartilage and its relevance to the formation of (Ali, S. Y. & Evans, L.) 647-650
- Brain, activities of hexokinase, phosphofructokinase, 3-oxo acid coenzyme A-transferase and acetoacetyl-coenzyme A thiolase in, from various vertebrate species (Sugden, P. H. & Newsholme, E. A.) 97-101
- Brain cortex, rat, effects of phenylpyruvate on the activities of enzymes involved in the biosynthesis of fatty acids in (Land, J. M. & Clark, J. B.) 545-555
- Brain cortex, rat, lack of effect of phenylpyruvate on the activity of the pyruvate dehydrogenase system of mitochondria from (Land, J. M. & Clark, J. B.) 539-544

- Brain, rat, acute action of ammonia on metabolism in, *in vivo* (Hawkins, R. A., Miller, A. L., Nielsen, R. C. & Veech, R. L.) 1001-1008
- Brain, rat, effects of pyridoxine deficiency and of DL-p-chlorophenylalanine administration on the concentrations of 5-hydroxytryptamine and noradrenaline in (Bhagavan, H. N. & Coursin, D. B.) 763-767
- Broad bean, *see* Bean, broad
- Bromocresol Purple, use of, as an inhibitor of the transport of glutamate into rat liver mitochondria (Bradford, N. M. & McGivan, J. D.) 1023-1029
- Brown bullhead (*Ictalurus nebulosus*), biosynthesis of insulin by islet tissue from, and the effect of temperature (Moule, M. L. & Yip, C. C.) 753-761
- Brush border, kidney-cortex, mammalian, properties and location of D-inositol 1,2-cyclic phosphate phosphohydrolase and other phosphodiesterases associated with (Dawson, R. M. C. & Clarke, N. G.) 59-67
- Brush border, kidney-cortex, rabbit, enzymology of purified preparations of (George, S. G. & Kenny, A. J.) 43-57
- Bumble-bee (*Bombus affinis*), estimation of the substrate cycling of fructose 6-phosphate through the reactions catalysed by fructose diphosphatase and phosphofructokinase in flight muscle of, *in vivo* (Clark, M. G., Bloxham, D. P., Holland, P. C. & Lardy, H. A.) 589-597
- Calcium ions, influence of cholecalciferol on the initial kinetics of the uptake of, by rat small-intestinal mucosa (O'Donnell, J. M. & Smith, M. W.) 667-669
- Calcium ions, regulation of gluconeogenesis in rat kidney-cortex slices by hormones, adenosine 3':5'-cyclic monophosphate and (Roobol, A. & Alleyne, G. A. O.) 157-165
- Calcium ions, uptake of, by matrix vesicles isolated from calcifying rabbit epiphyseal cartilage (Ali, S. Y. & Evans, L.) 647-650
- Candida utilis* N.C.Y.C. 193, properties of an antimycin A- and cyanide-resistant variant arising during growth of, in copper-deficient medium (Downie, J. A. & Garland, P. B.) 1051-1061
- Candida utilis* N.C.Y.C. 193, respiration-driven translocation of protons by mitochondria with differing efficiencies of oxidative phosphorylation from *Saccharomyces carlsbergensis* N.C.Y.C. 745 and (Downie, J. A. & Garland, P. B.) 1045-1049
- Candida utilis* N.C.Y.C. 321, regulation of the uptake of purines, pyrimidines and amino acids by (Jones, R. W. & Wild, D. G.) 617-627
- Carbohydrate compositions, comparison of, of the glycoprotein components of the plasma membranes of normal and 6-N,2'-O-dibutyryladenosine 3':5'-cyclic monophosphate-treated Chinese-hamster ovary cells (Baig, M. M. & Roberts, R. M.) 329-339
- Carbohydrates, absorption of protons with specific amino acids and, by *Saccharomyces* spp. (Seaston, A., Inkson, C. & Eddy, A. A.) 1031-1043
- N-(1-Carboxyethyl)phosphatidylethanolamine, formation of ceramide phosphorylethanolamine and, from phosphatidylethanolamine in the rumen protozoan *Entodinium caudatum* (Broad, T. E. & Dawson, R. M. C.) 659-662
- L-Carnitine, involvement of, in the β -oxidation of fatty acids by avocado mesocarp mitochondria (Panter, R. A. & Mudd, J. B.) 655-658
- Carotenoids, unsaturated, stereochemistry of hydrogen elimination in the desaturation of phytoene to, in a *Flavobacterium* sp. (McDermott, J. C. B., Britton, G. & Goodwin, T. W.) 1115-1117
- Cartilage, epiphyseal, rabbit, calcifying, uptake of calcium ions by matrix vesicles isolated from (Ali, S. Y. & Evans, L.) 647-650
- Cations, effects of altered composition of membrane lipids on the transport of, by *Saccharomyces cerevisiae* mitochondria (Haslam, J. M., Spithill, T. W., Linnane, A. W. & Chappell, J. B.) 949-957
- Cells, ascites-tumour, mouse, absorption of amino acids by, depleted of both endogenous amino acids and adenosine triphosphate (Morville, M., Reid, M. & Eddy, A. A.) 11-26
- Cells, kidney, baby-hamster, cell-surface mucosubstances from trypsin disaggregation of normal and polyoma-virus-transformed lines of (Minnikin, S. M. & Allen, A.) 1123-1126
- Cells, liver, rat, isolated, acceleration by lysine of gluconeogenesis from lactate in (Cornell, N. W., Lund, P., Hems, R. & Krebs, H. A.) 671-672
- Cells, mastocytoma, mouse, cultured, biosynthesis of glycosaminoglycans by (Lewis, R. G., Spencer, A. F. & Silbert, J. E.) 455-463
- Cells, mastocytoma, mouse, cultured, biosynthesis of glycosaminoglycans by microsomal preparations from (Lewis, R. G., Spencer, A. F. & Silbert, J. E.) 465-471
- Cells, ovary, Chinese-hamster, normal and 6-N,2'-O-dibutyryladenosine 3':5'-cyclic monophosphate-treated, comparison of the carbohydrate-containing components of the plasma membranes of (Baig, M. M. & Roberts, R. M.) 329-339
- Central nervous system, *see* Nervous system, central
- Ceramide phosphorylethanolamine, formation of, from phosphatidylethanolamine in the rumen protozoan *Entodinium caudatum* (Broad, T. E. & Dawson, R. M. C.) 659-662
- Cerebral cortex, rat, effects of phenylpyruvate on the activities of enzymes involved in the biosynthesis of fatty acids in (Land, J. M. & Clark, J. B.) 545-555
- Cerebral cortex, rat, lack of effect of phenylpyruvate on the activity of the pyruvate dehydrogenase system of mitochondria from (Land, J. M. & Clark, J. B.) 539-544
- Chick embryo, uptake of 4-aminobutyrate by organotypic cultures of spinal cord from (Tunnicliff, G., Cho, Y. D., Blackwell, N., Martin, R. O. & Wood, J. D.) 27-32
- Chick, factors influencing the rate of formation of 1,25-dihydroxycholecalciferol by homogenates of kidney from (Colston, K. W., Evans, I. M. A., Galante, L., MacIntyre, I. & Moss, D. W.) 817-820
- Chlorocholine chloride, *see* 2-Chloroethyltrimethylammonium chloride
- 2-Chloroethyltrimethylammonium chloride, inhibition by, of the biosynthesis of phosphatidylcholine in mammary-gland tissue from the lactating cow (Infante, J. P. & Kinsella, J. E.) 825-827
- DL-p-Chlorophenylalanine, effects of pyridoxine deficiency and of administration of, on 5-hydroxytryptamine and noradrenaline concentrations in brain and 5-hydroxy-

- tryptamine concentration in blood of the rat (Bhagavan, H. N. & Coursin, D. B.) 763-767
- Chloroplasts, isolated, biosynthesis of ribonucleic acids by, from spinach leaves (Hartley, M. R. & Ellis, R. J.) 249-262
- Chloroplasts, spinach-leaf, isolated, activity of adenosine 5'-sulphatophosphate kinase in (Burnell, J. N. & Anderson, J. W.) 565-579
- Chloroplasts, spinach-leaf, isolated, site of inhibition by 2-amino-1,1,3-tricyanopropene of photosynthetic oxygen evolution by (Burden, E. M. & Horton, A. A.) 663-665
- Cholecalciferol, factors influencing the formation of the 1,25-dihydroxy derivative of, by chick kidney homogenates (Colston, K. W., Evans, I. M. A., Galante, L., MacIntyre, I. & Moss, D. W.) 817-820
- Cholecalciferol, influence of, on the initial kinetics of the uptake of calcium ions by rat small-intestinal mucosa (O'Donnell, J. M. & Smith, M. W.) 667-669
- Cholesterol, exogenous (dietary), transport of, as cholesteryl ester of plasma lipoproteins in rabbit plasma (Rudel, L. L., Felts, J. M. & Morris, M. D.) 531-537
- Cholesterol, free and esterified, contents of, in cholesteryl ester-storage granules isolated from luteinized rat ovary (Armstrong, D. T. & Flint, A. P. F.) 399-406
- Cholesterol, free and esterified, effects of luteinizing hormone and adenosine 3':5'-cyclic monophosphate on the metabolism of, in mouse Leydig-cell tumour (Moyle, W. R., Jungas, R. L. & Greep, R. O.) 407-413
- Cholesterol, free and esterified, metabolism of, by mouse Leydig-cell-tumour mitochondria (Moyle, W. R., Jungas, R. L. & Greep, R. O.) 415-424
- Cholesteryl ester, effects of luteinizing hormone and adenosine 3':5'-cyclic monophosphate on the metabolism of cholesterol and, in mouse Leydig-cell tumour (Moyle, W. R., Jungas, R. L. & Greep, R. O.) 407-413
- Cholesteryl ester, metabolism of cholesterol and, by mouse Leydig-cell-tumour mitochondria (Moyle, W. R., Jungas, R. L. & Greep, R. O.) 415-424
- Cholesteryl ester, transport of exogenous (dietary) cholesterol as, of plasma lipoproteins in rabbit plasma (Rudel, L. L., Felts, J. M. & Morris, M. D.) 531-537
- Cholesteryl ester-storage granules, isolation and properties of, from rat and rabbit ovarian tissues (Armstrong, D. T. & Flint, A. P. F.) 399-406
- Chondroitin sulphate, biosynthesis of heparin and, by cultured mouse mastocytoma cells (Lewis, R. G., Spencer, A. F. & Silbert, J. E.) 455-463
- Chondroitin sulphate, biosynthesis of heparin and, by microsomal preparations from cultured mouse mastocytoma cells (Lewis, R. G., Spencer, A. F. & Silbert, J. E.) 465-471
- Chondroitin 4-sulphate, intravenously injected, degradation of, in the rat (Wood, K. M., Wusteman, F. S. & Curtis, C. G.) 1009-1013
- Chylomicra, transport of exogenous (dietary) cholesterol as cholesteryl ester of, and plasma lipoproteins in rabbit plasma (Rudel, L. L., Felts, J. M. & Morris, M. D.) 531-537
- Cinnamate, effect of light on the activities of enzymes involved in the pathway for the biosynthesis of hispidin from phenylalanine and tyrosine via, in *Polyporus hispidus* (Nambudiri, A. M. D., Vance, C. P. & Towers, G. H. N.) 891-897
- Citrate, inhibition by fluorocitrate of aconitate hydratase activity and the carrier for the transport of, in isolated rat liver mitochondria (Brand, M. D., Evans, S. M., Mendes-Mourão, J. & Chappell, J. B.) 217-224
- Citrate synthase, effect of phenylpyruvate on the activity of, of rat cerebral-cortex mitochondria (Land, J. M. & Clark, J. B.) 545-555
- Citric acid cycle, see Tricarboxylic acid cycle
- Claviceps purpurea* (Fr.) Tul., biosynthesis of ergotamine by (Bassett, R. A., Chain, E. B. & Corbett, K.) 1-10
- Clofenapate {methyl α -[4-(*p*-chlorophenyl)phenoxy]isobutyrate}, inhibition by, of the biosynthesis of sterols by rat liver preparations (Ranganathan, S. & Ramasarma, T.) 737-743
- Clofibrate [ethyl α -(*p*-chlorophenoxy)isobutyrate], inhibition by, of the biosynthesis of sterols by rat liver preparations (Ranganathan, S. & Ramasarma, T.) 737-743
- Coenzyme A, inhibition by, of β -ketothiolase activity and its possible involvement in the regulation of the metabolism of poly-3-hydroxybutyrate in *Hydrogenomonas eutropha* H16 (A.T.C.C. 17699) (Oeding, V. & Schlegel, H. G.) 239-248
- Cortisol, effect of, on the induction by 2-allyl-2-isopropyl-acetamide of the activity of 5-aminolaevulinate synthetase in rat liver (Padmanaban, G., Satyanarayana Rao, M. R. & Malathi, K.) 847-857
- Cortisol, effects of, on the metabolism of glucose in the newborn rat *in vivo* (Snell, K. & Walker, D. G.) 899-906
- p*-Coumarate, effect of light on the activities of enzymes involved in the pathway for the biosynthesis of hispidin from phenylalanine and tyrosine via cinnamate and, in *Polyporus hispidus* (Nambudiri, A. M. D., Vance, C. P. & Towers, G. H. N.) 891-897
- Creatine, rate and extent of the phosphorylation of, by anaerobic glycolysis in a reconstituted mixture of glycolytic enzymes from skeletal muscle (Scopes, R. K.) 197-208
- Cupric irons, properties of an antimycin A- and cyanide-resistant variant arising during growth of *Candida utilis* N.C.Y.C. 193 in medium deficient in (Downie, J. A. & Garland, P. B.) 1051-1061
- Cyclic adenosine 3':5'-monophosphate, see Adenosine 3':5'-cyclic monophosphate
- Cysteic acid, production of, in isolated rat liver mitochondria (Ferdinand, W., Bartley, W. & Broomhead, V.) 431-436
- Cyst(e)ine, role of adenosine 5'-sulphatophosphate kinase in the biosynthesis of, in isolated spinach-leaf chloroplasts (Burnell, J. N. & Anderson, J. W.) 565-579
- Cytchalasin B, selective release of lysosomal acid hydrolases from rabbit phagocytic cells caused by (Davies, P., Allison, A. C. & Haswell, A. D.) 33-41
- Cytochrome *b*₅, biosynthesis of, in rat liver (Druyan, R., Jakovcic, S. & Rabinowitz, M.) 377-385
- Cytochrome *c*, biosynthesis of, by the slime mould *Physarum polycephalum* (Colleran, E. M. & Jones, O. T. G.) 89-96
- Cytochrome *c*, biosynthesis of, in rat liver (Druyan, R., Jakovcic, S. & Rabinowitz, M.) 377-385
- Cytochrome *c* oxidase, biosynthesis of, in rat liver (Druyan, R., Jakovcic, S. & Rabinowitz, M.) 377-385

- Cytochrome *P*-450, effect of ethanol on drug oxidations and the significance of its interaction with, in rat liver microsomal fraction (Cinti, D. L., Grundin, R. & Orrenius, S.) 367-375
- Cytochrome *P*-450, effect of the administration of 2-allyl-2-isopropylacetamide on the activity of 5-aminoacetoacetate synthetase and the content of, in rat liver (Padmanabhan, G., Satyanarayana Rao, M. R. & Malathi, K.) 847-857
- Cytosol, cerebral-cortex, rat, effect of phenylpyruvate on the activities of acetyl-coenzyme A carboxylase and fatty acid synthetase of (Land, J. M. & Clark, J. B.) 545-555
- Data, normalization in the fitting of, by iterative methods and its application to tracer kinetics and enzyme kinetics (Ottaway, J. H.) 729-736
- 2-Deoxyglucose, inhibitory effect of, on the stimulation by insulin of the biosynthesis of growth hormone in rat anterior pituitary gland *in vitro* (Betteridge, A. & Wallis, M.) 1103-1113
- Deoxyribonucleic acid, content of, in heavy, light and fluffy mitochondrial fractions obtained from rat liver (Satav, J. G., Rajwade, M. S., Katyare, S. S., Netrawali, M. S., Fatterpaker, P. & Sreenivasan, A.) 687-695
- Deoxyribonucleic acid-cellulose, use of chromatography on, and isoelectric focusing for the characterization and partial purification of steroid-receptor complexes from various mammalian tissues (Mainwaring, W. I. P. & Irving, R.) 113-127
- Development, perinatal, changes in the biosynthesis of fatty acids in rabbit brown adipose tissue and liver during (Iliffe, J., Knight, B. L. & Myant, N. B.) 341-343
- Development, perinatal, hormonal regulation of the metabolism of glycogen in rat liver during (Schwartz, A. L. & Rall, T. W.) 985-993
- Development, role of sialyltransferase in the regulation of the microheterogeneity of α -foetoprotein in mouse foetal plasma and amniotic fluid during (Zimmerman, E. F. & Madappally, M. M.) 807-810
- Diabetes, alloxan-, effect of, on the relationship between the concentrations of ketone bodies and non-esterified fatty acids in rat plasma and skeletal muscle (Owen, O. E., Markus, H., Sarshik, S. & Mozzoli, M.) 499-506
- Diaphragm, rat, effects of dichloroacetate on the metabolism of glucose, pyruvate, acetate, 3-hydroxybutyrate and palmitate in, and heart muscle *in vitro* (McAllister, A., Allison, S. P. & Randle, P. J.) 1067-1081
- 6-*N*,2'-*O*-Dibutyryladenine 3':5'-cyclic monophosphate, effect of, on the metabolism of glycogen in neonatal rat liver (Schwartz, A. L. & Rall, T. W.) 985-993
- 6-*N*,2'-*O*-Dibutyryladenine 3':5'-cyclic monophosphate, effect of treatment with, on the carbohydrate-containing components of the plasma membranes of Chinese-hamster ovary cells (Baig, M. M. & Roberts, R. M.) 329-339
- 6-*N*,2'-*O*-Dibutyryladenine 3':5'-cyclic monophosphate, effects of, on the metabolism of glucose in the newborn rat *in vivo* (Snell, K. & Walker, D. G.) 899-906
- Dicarboxylate carrier, transport of inorganic phosphate by, in rat liver mitochondria (Johnson, R. N. & Chappell, J. B.) 769-774
- Dichloroacetate, activation by, of pyruvate dehydrogenase in perfused rat heart (Whitehouse, S. & Randle, P. J.) 651-653
- Dichloroacetate, effects of, on the metabolism of glucose, pyruvate, acetate, 3-hydroxybutyrate and palmitate in rat diaphragm and heart muscle *in vitro* and on the extraction of glucose, lactate, pyruvate and free fatty acids by dog heart *in vivo* (McAllister, A., Allison, S. P. & Randle, P. J.) 1067-1081
- Dictyostelium discoideum*, see Slime mould
- Diet, effects of an excess of leucine in, on the activities of enzymes of the metabolic pathway from tryptophan to nicotinate in rat liver and kidney (Ghafoorunissa & Narasinga Rao, B. S.) 425-430
- 3,5-Diethoxycarbonyl-1,4-dihydrocollidine, decreased activity of porphyrin-metal chelatase in rat and mouse liver in hepatic porphyria induced by treatment with (De Matteis, F., Abbritti, G. & Gibbs, A. H.) 717-727
- Differentiation, changes in the concentration of adenosine 3':5'-cyclic monophosphatase and the activity of phosphodiesterase during axenic growth and, of cells of the slime mould *Dictyostelium discoideum* (Malkinson, A. M. & Ashworth, J. M.) 311-319
- 5 α -Dihydrotestosterone (17 β -hydroxy-5 α -androstan-3-one), evidence that adenosine 3':5'-cyclic monophosphate and, are not interchangeable in their effects on the function and morphology of rat prostate gland (Mangan, F. R., Pegg, A. E. & Mainwaring, W. I. P.) 129-142
- 2,3-Dihydroxybiphenyl, identification of 2-hydroxy-6-oxo-6-phenylhexa-2,4-dienoate as the *meta*-cleavage product formed from, by *Pseudomonas putida* (Catelani, D., Colombi, A., Sorlini, C. & Treccani, V.) 1063-1066
- 1,25-Dihydroxycholecalciferol, factors influencing the rate of formation of, chick kidney homogenates (Colston, K. W., Evans, I. M. A., Galante, L., MacIntyre, I. & Moss, D. W.) 817-820
- Diplococcus pneumoniae*, effects of infection with, on the biosynthesis of ribonucleic acids in rat liver (Thompson, W. L. & Wannemacher, R. W., Jr.) 79-87
- Disaccharidases, enzymology of, and other hydrolases in purified preparations of rabbit kidney-cortex brush border (George, S. G. & Kenny, A. J.) 43-57
- Electron transfer, role of light, oxygen, energy transfer and, in the control of the activity of magnesium-protoporphyrin chelatases in *Rhodopseudomonas sphaeroides* (Gorchein, A.) 833-845
- Electron-transport system, properties of, of mitochondria from the slime mould *Physarum polycephalum* (Barnes, R., Colleran, E. M. & Jones, O. T. G.) 745-751
- Energy transfer, role of light, oxygen, electron transfer and, in the control of the activity of magnesium-protoporphyrin chelatase in *Rhodopseudomonas sphaeroides* (Gorchein, A.) 833-845
- Entodinium caudatum*, formation of ceramide phosphoryl-ethanolamine from phosphatidylethanolamine in, from rumen (Broad, T. E. & Dawson, R. M. C.) 659-662
- Enzyme kinetics, normalization in the fitting of data by iterative methods and its application to (Ottaway, J. H.) 729-736

- Epididymis, rat, changes during a starvation-re-feeding cycle in the biosynthesis and degradation of phosphoenolpyruvate carboxylate in adipose tissue of, and liver (Hopgood, M. F., Ballard, F. J., Reshef, L. & Hanson, R. W.) 445-453
- Epididymis, rat, effect of insulin on the metabolism of pyruvate in adipose tissue from (Berman, B. G. & Halperin, M. L.) 885-889
- Epinephrine, *see* Adrenaline
- Epiphyseal cartilage, rabbit, calcifying, uptake of calcium ions by matrix vesicles isolated from (Ali, S. Y. & Evans, L.) 647-650
- Ergosterol, formation of, from malonyl-coenzyme A by cell-free yeast preparations (Higgins, M. J. P. & Kekwick, R. G. O.) 295-310
- Ergotamine, biosynthesis of, by *Claviceps purpurea* (Fr.) Tul. (Bassett, R. A., Chain, E. B. & Corbett, K.) 1-10
- Erwinia carotovora* N.C.P.P.B. 1280, metabolism of ethanalamine and 1-aminopropan-2-ol and the roles of amino alcohol kinase and amino alcohol *O*-phosphate phospho-lyase in aldehyde formation by, and other *Erwinia* spp. (Jones, A., Faulkner, A. & Turner, J. M.) 959-968
- Escherichia coli* K12, induction of the activities of glucose kinase and 6-phosphogluconate dehydratase in, during growth on gluconate (Kornberg, H. L. & Soutar, A. K.) 489-498
- Escherichia coli* K12, reconstitution of oxidative phosphorylation and adenosine triphosphate-dependent nicotinamide-adenine dinucleotide (phosphate) transhydrogenase activity by a combination of membrane fragments from *uncA⁻* and *uncB⁻* mutant strains of (Cox, G. B., Gibson, F. & McCann, L.) 1015-1021
- Escherichia coli* M.R.E. 600, thermal stability of ribosomes and biologically active ribosomal subparticles from (Cox, R. A., Pratt, H., Huvos, P., Higginson, B. & Hirst, W.) 775-793
- Estrogens, *see* Oestrogens
- Ethanol, accumulation of amino acids by perfused rat liver in the presence of (Krebs, H. A., Hems, R. & Lund, P.) 697-705
- Ethanol, changes related to energetic parameters of the cell in rat liver produced by the chronic administration of (Bernstein, J., Videla, L. & Israel, Y.) 515-521
- Ethanol, comparison between the effects in rat liver produced by thyroxine and by chronic administration of (Israel, Y., Videla, L., Macdonald, A. & Bernstein, J.) 523-529
- Ethanol, effects of, on drug oxidations in rat liver slices and microsomal fraction (Cinti, D. L., Grundin, R. & Orrenius, S.) 367-375
- Ethanol, increased oxidative capacity in rat liver produced by the chronic administration of (Videla, L., Bernstein, J. & Israel, Y.) 507-514
- Ethanalamine, metabolism of, and the roles of amino alcohol kinase and amino alcohol *O*-phosphate phospho-lyase in the formation of acetaldehyde by *Erwinia* spp. (Jones, A., Faulkner, A. & Turner, J. M.) 959-968
- Ethanalamine, metabolism of, via acetaldehyde in *Pseudomonas* sp. P6 (N.C.I.B. 10431) (Jones, A. & Turner, J. M.) 167-182
- Ethyl α -(*p*-chlorophenoxy)isobutyrate (clofibrate), inhibition by, of the biosynthesis of sterols by rat liver preparations (Ranganathan, S. & Ramasarma, T.) 737-743
- Euglena gracilis*, intracellular localization of enzymes of intermediary metabolism in *Astasia longa* and (Bégin-Heick, N.) 607-616
- Exo- β -*N*-acetylglucosaminidase, de-repression of, during gluconeogenesis and the initial stages of sporulation in *Bacillus subtilis* B (Brewer, S. J. & Berkeley, R. C. W.) 271-281
- Exocytosis, selective release of lysosomal acid hydrolases by, from rabbit phagocytic cells caused by cytochalasin B (Davies, P., Allison, A. C. & Haswell, A. D.) 33-41
- Fatty acid synthetase, effect of phenylpyruvate on the activity of, of rat cerebral-cortex cytosol (Land, J. M. & Clark, J. B.) 545-555
- Fatty acids, changes in the biosynthesis of, in rabbit brown adipose tissue and liver during perinatal development (Iliffe, J., Knight, B. L. & Myant, N. B.) 341-343
- Fatty acids, free, effects of dichloroacetate on the extraction of glucose, lactate, pyruvate and, by dog heart *in vivo* (McAllister, A., Allison, S. P. & Randle, P. J.) 1067-1081
- Fatty acids, involvement of L-carnitine in the β -oxidation of, by avocado mesocarp mitochondria (Panter, R. A. & Mudd, J. B.) 655-658
- Fatty acids, non-esterified, relationship between the concentrations of ketone bodies and, in plasma and skeletal muscle in fed, starved and alloxan-diabetic rats (Owen, O. E., Markus, H., Sarshik, S. & Mozzoli, M.) 499-506
- Ferrochelatase, decreased activity of, in rat and mouse liver in hepatic porphyria induced by treatment with 3,5-dieethoxycarbonyl-1,4-dihydrocollidine (De Matteis, F., Abbritti, G. & Gibbs, A. H.) 717-727
- Flavobacterium* sp., stereochemistry of hydrogen elimination in the desaturation of phytoene to lycopene, rubixanthin and zeaxanthin in (McDermott, J. C. B., Britton, G. & Goodwin, T. W.) 1115-1117
- Flight muscle, *see* Muscle, flight
- Fluorocitrate, inhibition by, of aconitate hydratase activity and the carrier for the transport of tricarboxylic acids in isolated rat liver mitochondria (Brand, M. D., Evans, S. M., Mendes-Mourão, J. & Chappell, J. B.) 217-224
- α -Foetoprotein, role of sialyltransferase in the regulation of the microheterogeneity of, in mouse foetal plasma and amniotic fluid during development (Zimmerman, E. F. & Madappally, M. M.) 807-810
- Fructose diphosphatase, estimation of the substrate cycling of fructose 6-phosphate through reactions catalysed by phosphofructokinase and, in flight muscle of the bumble-bee *Bombus affinis* *in vivo* (Clark, M. G., Bloxham, D. P., Holland, P. C. & Lardy, H. A.) 589-597
- Fructose diphosphatase, model constructed *in vitro* for the substrate cycling of fructose 6-phosphate through the reactions catalysed by phosphofructokinase and (Bloxham, D. P., Clark, M. G., Holland, P. C. & Lardy, H. A.) 581-586
- Fructose diphosphatase, theoretical estimation of the substrate cycling of fructose 6-phosphate *in vivo* through the reactions catalysed by phosphofructokinase

- and (Bloxham, D. P., Clark, M. G., Goldberg, D. M., Holland, P. C. & Lardy, H. A.) 586-587
- Fructose, effect of the administration of, on the glyco-genolytic activity of glucagon in human patients with hereditary fructose intolerance and in the mouse (Van den Berghe, G., Hue, L. & Hers, H. G.) 637-645
- Fructose, induction and suppression of the key enzymes involved in glycolysis and gluconeogenesis in isolated perfused rat liver in response to (Wimhurst, J. M. & Manchester, K. L.) 143-156
- Fructose, inhibition by glucose 6-phosphate of the uptake of, by *Escherichia coli* K 12 (Kornberg, H. L. & Soutar, A. K.) 489-498
- Fructose intolerance, hereditary, effect of the administration of fructose on the glycogenolytic activity of glucagon in human patients with (Van den Berghe, G., Hue, L. & Hers, H. G.) 637-645
- Fructose 6-phosphate, estimation of the substrate cycling of, through the reactions catalysed by fructose diphosphatase and phosphofructokinase in flight muscle of the bumble-bee *Bombus affinis* *in vivo* (Clark, M. G., Bloxham, D. P., Holland, P. C. & Lardy, H. A.) 589-597
- Fructose 6-phosphate, model constructed *in vitro* for the substrate cycling of, through the reactions catalysed by fructose diphosphatase and phosphofructokinase (Bloxham, D. P., Clark, M. G., Holland, P. C. & Lardy, H. A.) 581-586
- Fructose 6-phosphate, theoretical estimation of the substrate cycling of, *in vivo* through the reactions catalysed by fructose diphosphatase and phosphofructokinase (Bloxham, D. P., Clark, M. G., Goldberg, D. M., Holland, P. C. & Lardy, H. A.) 586-587
- Fusidic acid, inhibition by, of the biosynthesis of protein *in vitro* in a system from mitochondria of *Vigna sinensis* seeds (Goswami, B. B., Chakrabarti, S., Dube, D. K. & Roy, S. C.) 815-816
- Genes, regulation of the biosynthesis of nitrate reductase at the level of transcription of, and translation of messenger ribonucleic acid in *Neurospora crassa* (Sorger, G. J. & Davies, J.) 673-685
- Globin, presence of *N*-terminal methionine in nascent chains of, and its cleavage during polypeptide-chain elongation in cell-free preparations of rabbit reticulocytes (Koffer-Gutmann, A. & Arnstein, H. R. V.) 969-983
- Glucagon, biosynthesis of, in isolated perfused rat pancreas (O'Connor, K. J., Gay, A. & Lazarus, N. R.) 473-480
- Glucagon, effect of, on the metabolism of glycogen in neonatal rat liver (Schwartz, A. L. & Rall, T. W.) 985-993
- Glucagon, effect of the administration of fructose on the glycogenolytic activity of, in human patients with hereditary fructose intolerance and in the mouse (Van den Berghe, G., Hue, L. & Hers, H. G.) 637-645
- Glucagon, effects of, on the metabolism of glucose in the newborn rat *in vivo* (Snell, K. & Walker, D. G.) 899-906
- Glucagon, regulation of gluconeogenesis in rat kidney-cortex slices by calcium ions, adenosine 3':5'-cyclic monophosphate, adrenaline and (Roobol, A. & Alleyne, G. A. O.) 157-165
- Gluconate, induction of the activities of gluconate kinase and 6-phosphogluconate dehydratase in *Escherichia coli* K 12 during growth on (Kornberg, H. L. & Soutar, A. K.) 489-498
- Gluconate kinase, induction of the activities of, and 6-phosphogluconate dehydratase in *Escherichia coli* K 12 during growth on gluconate (Kornberg, H. L. & Soutar, A. K.) 489-498
- Gluconeogenesis, acceleration by lysine of, from lactate in isolated rat liver cells (Cornell, N. W., Lund, P., Hems, R. & Krebs, H. A.) 671-672
- Gluconeogenesis, de-repression of exo- β -N-acetylglucosaminidase during, and the initial stages of sporulation in *Bacillus subtilis* B (Brewer, S. J. & Berkeley, R. C. W.) 271-281
- Gluconeogenesis, diversion of alanine from, to the formation of other amino acids in perfused rat liver in the presence of ethanol (Krebs, H. A., Hems, R. & Lund, P.) 697-705
- Gluconeogenesis, hormonal effects on, in the newborn rat *in vivo* (Snell, K. & Walker, D. G.) 899-906
- Gluconeogenesis, increased activity of L-serine-pyruvate aminotransferase under conditions favouring, in rat liver (Rowse, E. V., Al-Tai, A. H., Carnie, J. A. & Rowse, K. V.) 349-351
- Gluconeogenesis, induction and suppression of the key enzymes involved in glycolysis and, in isolated perfused rat liver in response to glucose, fructose and lactate (Wimhurst, J. M. & Manchester, K. L.) 143-156
- Gluconeogenesis, intracellular localization of enzymes involved in the tricarboxylic acid cycle, the glyoxylic acid cycle and, in *Astasia longa* and *Euglena gracilis* (Bégin-Heick, N.) 607-616
- Gluconeogenesis, regulation of, in rat kidney-cortex slices by calcium ions, hormones and adenosine 3':5'-cyclic monophosphate (Roobol, A. & Alleyne, G. A. O.) 157-165
- Glucose, acceleration by lysine of the formation of, from lactate in isolated rat liver cells (Cornell, N. W., Lund, P., Hems, R. & Krebs, H. A.) 671-672
- Glucose, activities of key enzymes involved in the utilization of, in nervous tissue from vertebrates and invertebrates (Sugden, P. H. & Newsholme, E. A.) 97-101
- Glucose, diversion of alanine from formation of, to the formation of other amino acids in perfused rat liver in the presence of ethanol (Krebs, H. A., Hems, R. & Lund, P.) 697-705
- Glucose, effect of, on the biosynthesis of glucagon in isolated perfused rat pancreas (O'Connor, K. J., Gay, A. & Lazarus, N. R.) 473-480
- Glucose, effect of the acute action of ammonia on the metabolism of, in rat brain *in vivo* (Hawkins, R. A., Miller, A. L., Nielsen, R. C. & Veech, R. L.) 1001-1008
- Glucose, effects of dichloroacetate on the extraction of lactate, pyruvate, free fatty acids and, by dog heart *in vivo* (McAllister, A., Allison, S. P. & Randle, P. J.) 1067-1081
- Glucose, effects of dichloroacetate on the metabolism of pyruvate, acetate, 3-hydroxybutyrate, palmitate and, in rat diaphragm and heart muscle *in vitro* (McAllister, A., Allison, S. P. & Randle, P. J.) 1067-1081
- Glucose, hormonal effects on the metabolism of, in the

- newborn rat *in vivo* (Snell, K. & Walker, D. G.) 899-906
- Glucose, induction and suppression of the key enzymes involved in glycolysis and gluconeogenesis in isolated perfused rat liver in response to (Wimhurst, J. M. & Manchester, K. L.) 143-156
- Glucose 6-phosphatase, heterogenous distribution of, in rat liver microsomal fractions as shown by a cytochemical technique (Lewis, J. A. & Tata, J. R.) 69-78
- Glucose 6-phosphate, inhibition by, of the uptake of fructose by *Escherichia coli* K12 (Kornberg, H. L. & Soutar, A. K.) 489-498
- Glucose 6-phosphate dehydrogenase, thermal stability of, in human lens during aging (Harding, J. J.) 995-1000
- Glucose, regulation of the formation of, in rat kidney-cortex slices by calcium ions, hormones and adenosine 3':5'-cyclic monophosphate (Roobol, A. & Alleyne, G. A. O.) 157-165
- Glucose, requirement for phosphoenolpyruvate in the uptake of, by *Escherichia coli* K12 (Kornberg, H. L. & Soutar, A. K.) 489-498
- Glucose, role of adenosine 3':5'-cyclic monophosphate in the release of insulin by mouse pancreas islets of Langerhans induced by (Cooper, R. H., Ashcroft, S. J. H. & Randle, P. J.) 599-605
- Glucose, temporal relationship between the stimulation by insulin of the activity of pyruvate dehydrogenase and the transport of, in rat epididymal adipose tissue (Berman, B. G. & Halperin, M. L.) 885-889
- Glutamate, effect of L-leucine on the metabolism of, in isolated rat liver mitochondria (McGivan, J. D., Bradford, N. M., Crompton, M. & Chappell, J. B.) 209-215
- Glutamate, quantitative characteristics of the transport of, into rat liver mitochondria (Bradford, N. M. & McGivan, J. D.) 1023-1029
- Glutamate dehydrogenase, effect of L-leucine on the activity of, in isolated rat liver mitochondria (McGivan, J. D., Bradford, N. M., Crompton, M. & Chappell, J. B.) 209-215
- Glutamine, effect of the acute action of ammonia in increasing the rat biosynthesis of, in rat brain *in vivo* (Hawkins, R. A., Miller, A. L., Nielsen, R. C. & Veech, R. L.) 1001-1008
- Glutathione, oxidized, production of, in isolated rat liver mitochondria (Ferdinand, W., Bartley, W. & Broomhead, V.) 431-436
- Glutathione (oxidized) reductase, altered thermal lability of a fraction of, in human lens during aging (Harding, J. J.) 995-1000
- Glycerol 3-phosphate, accumulation of, during the metabolism of xylitol in isolated perfused rat liver (Woods, H. F. & Krebs, H. A.) 437-443
- Glycerol 3-phosphate dehydrogenase, mitochondrial, comparison between the effects produced by the chronic administration of ethanol and by thyroxine on the activity of, and other parameters in rat liver (Israel, Y., Videla, L., Macdonald, A. & Bernstein, J.) 523-529
- Glycerolipids, activities of enzymes involved in the biosynthesis of, in rat liver after subtotal hepatectomy (Mangiapane, E. H., Lloyd-Davies, K. A. & Brindley, D. N.) 103-112
- Glycerylphosphorylcholine diesterase, properties and location of, and other phosphodiesterases in mammalian kidney cortex (Dawson, R. M. C. & Clarke, N. G.) 59-67
- Glycine, absorption of, and other amino acids by mouse ascites-tumour cells depleted of both endogenous amino acids and adenosine triphosphate (Morville, M., Reid, M. & Eddy, A. A.) 11-26
- Glycine, specific radioactivity of the precursor pool of serine and, for estimates of the rate of protein biosynthesis in the rat (Fern, E. B. & Garlick, P. J.) 1127-1130
- Glycogen, hormonal regulation of the metabolism of, in neonatal rat liver (Schwartz, A. L. & Rall, T. W.) 985-993
- Glycogen synthetase, hormonal regulation of the activity of, in neonatal rat liver (Schwartz, A. L. & Rall, T. W.) 985-993
- Glycogenolysis, effect of the administration of fructose on the stimulation of, by glucagon in human patients with hereditary fructose intolerance and in the mouse (Van den Berghe, G., Hue, L. & Hers, H. G.) 637-645
- Glycogenolysis, hormonal effects on, in the newborn rat *in vivo* (Snell, K. & Walker, D. G.) 899-906
- Glycolysis, activities of key enzymes involved in, in nervous tissue from vertebrates and invertebrates (Sugden, P. H. & Newsholme, E. A.) 97-101
- Glycolysis, anaerobic, rate and extent of the phosphorylation of creatine by, in a reconstituted mixture of glycolytic enzymes from skeletal muscle (Scopes, R. K.) 197-208
- Glycolysis, effect of the acute action of ammonia on, in rat brain *in vivo* (Hawkins, R. A., Miller, A. L., Nielsen, R. C. & Veech, R. L.) 1001-1008
- Glycolysis, induction and suppression of the key enzymes involved in gluconeogenesis and, in isolated perfused rat liver in response to glucose, fructose and lactate (Wimhurst, J. M. & Manchester, K. L.) 143-156
- Glycoproteins, comparison of the carbohydrate compositions of, of the plasma membranes of normal and 6-N,2'-O-dibutyryladenosine 3':5'-cyclic monophosphate-treated Chinese-hamster ovary cells (Baig, M. M. & Roberts, R. M.) 329-339
- Glycosaminoglycans, biosynthesis of, by cultured mouse mastocytoma cells (Lewis, R. G., Spencer, A. F. & Silbert, J. E.) 455-463
- Glycosaminoglycans, biosynthesis of, by microsomal preparations from cultured mouse mastocytoma cells (Lewis, R. G., Spencer, A. F. & Silbert, J. E.) 465-471
- Glyoxylic acid cycle, intracellular localization of enzymes involved in gluconeogenesis, the tricarboxylic acid cycle and, in *Astasia longa* and *Euglena gracilis* (Bégin-Heick, N.) 607-616
- Growth, axenic, changes in the concentration of adenosine 3':5'-cyclic monophosphate and the activity of phosphodiesterase during, and differentiation of cells of the slime mould *Dictyostelium discoideum* (Malkinson, A. M. & Ashworth, J. M.) 311-319
- Growth hormone, stimulation by insulin of the biosynthesis of, in rat anterior pituitary gland *in vitro* (Betteridge, A. & Wallis, M.) 1103-1113
- Haem, incorporation of, into cytochrome c by the slime mould *Physarum polycephalum* (Colleran, E. M. & Jones, O. T. G.) 89-96

- Haematin, differences in the ability of, to counteract the biochemical effects of 2-allyl-2-isopropylacetamide and phenobarbital in rat liver (Satyanarayana Rao, M. R. & Padmanaban, G.) 859-868
- Haematin, effect of, on the induction by 2-allyl-2-isopropylacetamide of the activity of 5-aminolaevulinate synthetase in rat liver (Padmanaban, G., Satyanarayana Rao, M. R. & Malathi, K.) 847-857
- Heart, changes in the activities of enzymes in, and other tissues of rats exposed to hypoxia (Cryer, A. & Bartley, W.) 1119-1122
- Heart, dog, effects of dichloroacetate on the extraction of glucose, lactate, pyruvate and free fatty acids by, *in vivo* (McAllister, A., Allison, S. P. & Randle, P. J.) 1067-1081
- Heart muscle, rat, apparent stimulation by adenosine triphosphate of proteolysis in homogenates of, and other tissues (Goldspink, D. F. & Goldberg, A. L.) 829-832
- Heart muscle, rat, effects of dichloroacetate on the metabolism of glucose, pyruvate, acetate, 3-hydroxybutyrate and palmitate in, and diaphragm *in vitro* (McAllister, A., Allison, S. P. & Randle, P. J.) 1067-1081
- Heart, pigeon, general properties of and the effect of hyperbaric oxygen on the generation of hydrogen peroxide by mitochondria from (Boveris, A. & Chance, B.) 707-716
- Heart, rat, perfused, activation by dichloroacetate of pyruvate dehydrogenase in (Whithouse, S. & Randle, P. J.) 651-653
- Heparin, biosynthesis of chondroitin sulphate and, by cultured mouse mastocytoma cells (Lewis, R. G., Spencer, A. F. & Silbert, J. E.) 455-463
- Heparin, biosynthesis of chondroitin sulphate and, by microsomal preparations from cultured mouse mastocytoma cells (Lewis, R. G., Spencer, A. F. & Silbert, J. E.) 465-471
- Hepatectomy, subtotal, activities of enzymes involved in the biosynthesis of glycerolipids in rat liver after (Mangiapane, E. H., Lloyd-Davies, K. A. & Brindley, D. N.) 103-112
- Hispidin, effect of light on the activities of enzymes involved in the pathway for the biosynthesis of, from phenylalanine and tyrosine in *Polyporus hispidus* (Nambudiri, A. M. D., Vance, C. P. & Towers, G. H. N.) 891-897
- Histone F2a1, early effects of aldosterone on the specific acetylation of, in rat kidney (Libby, P. R.) 907-912
- Hydrocortisone, *see* Cortisol
- Hydrogen, stereochemistry of the elimination of, in the desaturation of phytoene to lycopene, rubixanthin and zeaxanthin in a *Flavobacterium* sp. (McDermott, J. C. B., Britton, G. & Goodwin, T. W.) 1115-1117
- Hydrogen ions, absorption of, with specific amino acids and carbohydrates by *Saccharomyces* spp. (Seaston, A., Inkson, C. & Eddy, A. A.) 1031-1043
- Hydrogen ions, effects of altered composition of membrane lipids on the transport of, by *Saccharomyces cerevisiae* mitochondria (Haslam, J. M., Spithill, T. W., Linnane, A. W. & Chappell, J. B.) 949-957
- Hydrogen ions, respiration-driven translocation of, by mitochondria with differing efficiencies of oxidative phosphorylation from *Candida utilis* N.C.Y.C. 193 and *Saccharomyces carlsbergensis* N.C.Y.C. 745 (Downie, J. A. & Garland, P. B.) 1045-1049
- Hydrogen peroxide, general properties of and the effect of hyperbaric oxygen on the generation of, by pigeon heart and rat liver mitochondria (Boveris, A. & Chance, B.) 707-716
- Hydrogen selenide, evidence for the identification of acid-volatile selenium in male rat liver as selenide formed from, during acidification (Diplock, A. T., Caygill, C. P. J., Jeffery, E. H. & Thomas, C.) 283-293
- Hydrogenomonas eu tropha* H16 (A.T.C.C. 17699), role of β -ketothiolase in the regulation of the metabolism of poly-3-hydroxybutyrate in (Oeding, V. & Schlegel, H. G.) 239-248
- Hydrolases, acid, lysosomal, selective release of, from rabbit phagocytic cells caused by cytochalasin B (Davies, P., Allison, A. C. & Haswell, A. D.) 33-41
- Hydrolases, enzymology of, in purified preparations of rabbit kidney-cortex brush border (George, S. G. & Kenny, A. J.) 43-57
- 17 β -Hydroxy-5 α -androstan-3-one, evidence that adenosine 3':5'-cyclic monophosphate and, are not interchangeable in their effects on the function and morphology of rat prostate gland (Mangan, F. R., Pegg, A. E. & Mainwaring, W. I. P.) 129-142
- p*-Hydroxybenzaldehyde O-sulphate, determination and significance of, and other deaminated metabolites of L-tyrosine O-sulphate in normal human and mouse urine (Hext, P. M., Thomas, S., Rose, F. A. & Dodgson, K. S.) 629-635
- 3-Hydroxybutyrate, effects of dichloroacetate on the metabolism of glucose, pyruvate, acetate, palmitate and, in rat diaphragm and heart muscle *in vitro* (McAllister, A., Allison, S. P. & Randle, P. J.) 1067-1081
- 3-Hydroxybutyrate, relationship between the concentrations of non-esterified fatty acids, acetoacetate and, in plasma and skeletal muscle in fed, starved and alloxan-diabetic rats (Owen, O. E., Markus, H., Sarshik, S. & Mozzoli, M.) 499-506
- 25-Hydroxycholecalciferol, factors influencing the rate of formation of 1,25-dihydroxycholecalciferol from, by chick kidney homogenates (Colston, K. W., Evans, I. M. A., Galante, L., MacIntyre, I. & Moss, D. W.) 817-820
- p*-Hydroxycinnamate, inhibition by, of the biosynthesis of sterols by rat liver preparations (Ranganathan, S. & Ramasarma, T.) 737-743
- 3-Hydroxy-3-methylglutaryl-coenzyme A, formation of, from malonyl-coenzyme A by pigeon and rat liver preparations (Higgins, M. J. P. & Kekwick, R. G. O.) 295-310
- 2-Hydroxy-6-oxo-6-phenylhexa-2,4-dienoate, identification of, as the *meta*-cleavage product formed from 2,3-dihydroxybiphenyl by *Pseudomonas putida* (Catelani, D., Colombi, A., Sorlini, C. & Treccani, V.) 1063-1066
- p*-Hydroxyphenylacetate O-sulphate, determination and significance of, and other deaminated metabolites of L-tyrosine O-sulphate in normal human and mouse urine (Hext, P. M., Thomas, S., Rose, F. A. & Dodgson, K. S.) 629-635
- p*-Hydroxyphenylpyruvate O-sulphate, determination and significance of, and other deaminated metabolites of

- L-tyrosine O-sulphate in normal human and mouse urine (Hext, P. M., Thomas, S., Rose, F. A. & Dodgson, K. S.) 629-635
- β -Hydroxypregn-5-en-20-one, biosynthesis of progesterone and, by mouse Leydig-cell-tumour mitochondria (Moyle, W. R., Jungas, R. L. & Greep, R. O.) 415-424
- 3-Hydroxypropylmercapturic acid, identification of, as a metabolite of allyl alcohol, allyl esters and acrolein in urine in the rat (Kaye, C. M.) 1093-1101
- 5-Hydroxytryptamine, effects of pyridoxine deficiency and of DL-p-chlorophenylalanine administration on the concentrations of, in rat brain and blood (Bhagavan, H. N. & Coursin, D. B.) 763-767
- Hypoxia, changes in the activities of enzymes in tissues of rats exposed to (Cryer, A. & Bartley, W.) 1119-1122
- Ictalurus nebulosus*, see Brown bullhead
- D-Inositol 1:2-cyclic phosphate phosphohydrolase, properties and location of, and other phosphodiesterases in mammalian kidney cortex (Dawson, R. M. C. & Clarke, N. G.) 59-67
- Insulin, biosynthesis of, by islet tissue from the brown bullhead and the effect of temperature (Moule, M. L. & Yip, C. C.) 753-761
- Insulin, effect of, on the metabolism of glycogen in neonatal rat liver (Schwartz, A. L. & Rall, T. W.) 985-993
- Insulin, effects of azaserine and nicotinamide on the metabolism of nicotinamide-adenine dinucleotide in and the release of, by isolated rat pancreas islets of Langerhans (Deery, D. J. & Taylor, K. W.) 557-563
- Insulin, evidence that agents affecting the release of, by isolated rat pancreas islets of Langerhans by altering the concentration of adenosine 3':5'-cyclic monophosphate exert their effects by altering the activity of an adenosine 3':5'-cyclic monophosphate-dependent protein kinase (Montague, W. & Howell, S. L.) 321-327
- Insulin, inhibition by, of the binding of parathyroid hormone to ox kidney-cortex plasma membranes (Sutcliffe, H. S., Martin, T. J., Eisman, J. A. & Pilczyk, R.) 913-921
- Insulin, role of adenosine 3':5'-cyclic monophosphate in the regulation of the release of, by isolated rat pancreas islets of Langerhans during pregnancy (Green, I. C., Howell, S. L., Montague, W. & Taylor, K. W.) 481-487
- Insulin, role of adenosine 3':5'-cyclic monophosphate in the release of, by mouse pancreas islets of Langerhans induced by glucose (Cooper, R. H., Ashcroft, S. J. H. & Randle, P. J.) 599-605
- Insulin, stimulation by, of the biosynthesis of growth hormone in rat anterior pituitary gland *in vitro* (Betteridge, A. & Wallis, M.) 1103-1113
- Interstitial tissue, ovarian, rabbit, isolation and properties of cholesteryl ester-storage granules from (Armstrong, D. T. & Flint, A. P. F.) 399-406
- Intestine, small, rat, influence of cholecalciferol on the initial kinetics of the uptake of calcium ions by the mucosa of (O'Donnell, J. M. & Smith, M. W.) 667-669
- Iron-deficiency anaemia, aberration of porphyrin metabolism in rats suffering from (Sharma, D. C.) 821-823
- Islet tissue, brown-bullhead, biosynthesis of insulin by, and the effect of temperature (Moule, M. L. & Yip, C. C.) 753-761
- Islets of Langerhans, pancreas, mouse, isolated, concentration of adenosine 3':5'-cyclic monophosphate in, measured by a protein-binding radioassay method (Cooper, R. H., Ashcroft, S. J. H. & Randle, P. J.) 599-605
- Islets of Langerhans, pancreas, rat, isolated, effects of azaserine and nicotinamide on the release of insulin by and the metabolism of nicotinamide-adenine dinucleotide in (Deery, D. J. & Taylor, K. W.) 557-563
- Islets of Langerhans, pancreas, rat, isolated, evidence that agents affecting the release of insulin by, by altering the concentration of adenosine 3':5'-cyclic monophosphate exert their effects by altering the activity of an adenosine 3':5'-cyclic monophosphate-dependent protein kinase (Montague, W. & Howell, S. L.) 321-327
- Islets of Langerhans, pancreas, rat, isolated, role of adenosine 3':5'-cyclic monophosphate in the regulation of the release of insulin by, during pregnancy (Green, I. C., Howell, S. L., Montague, W. & Taylor, K. W.) 481-487
- Isoprenoids, role of malonyl-coenzyme A in the biosynthesis of, by cell-free yeast preparations, by pigeon and rat liver preparations and by *Hevea brasiliensis* latex (Higgins, M. J. P. & Kekwick, R. G. O.) 295-310
- Ketone bodies, activities of key enzymes involved in the utilization of, in nervous tissue from vertebrates and invertebrates (Sugden, P. H. & Newsholme, E. A.) 97-101
- Ketone bodies, relationship between the concentrations of non-esterified fatty acids and, in plasma and skeletal muscle in fed, starved and alloxan-diabetic rats (Owen, O. E., Markus, H., Sarshik, S. & Mozzoli, M.) 499-506
- β -Ketothiolase, key role of, in the regulation of the metabolism of poly-3-hydroxybutyrate in *Azotobacter beijerinckii* N.C.I.B. 9067 (Senior, P. J. & Dawes, E. A.) 225-238
- β -Ketothiolase, role of, in the regulation of the metabolism of poly-3-hydroxybutyrate in *Hydrogenomonas eutropha* H16 (A.T.C.C. 17699) (Oeding, V. & Schlegel, H. G.) 239-248
- Kidney cells, baby-hamster, cell-surface mucosubstances from trypsin disaggregation of normal and polyoma-virus-transformed lines of (Minnikin, S. M. & Allen, A.) 1123-1126
- Kidney, changes in the activities of enzymes in, and other tissues of rats exposed to hypoxia (Cryer, A. & Bartley, W.) 1119-1122
- Kidney, chick, factors influencing the rate of formation of 1,25-dihydroxycholecalciferol by homogenates of (Colston, K. W., Evans, I. M. A., Galante, L., MacIntyre, I. & Moss, D. W.) 817-820
- Kidney cortex, mammalian, properties and location of D-inositol 1:2-cyclic phosphate phosphohydrolase and other phosphodiesterases in (Dawson, R. M. C. & Clarke, N. G.) 59-67
- Kidney cortex, ox, binding of parathyroid hormone to plasma membranes from (Sutcliffe, H. S., Martin, T. J., Eisman, J. A. & Pilczyk, R.) 913-921

- Kidney cortex, rabbit, enzymology of purified preparations of brush border from (George, S. G. & Kenny, A. J.) 43-57
- Kidney cortex, rat, regulation of gluconeogenesis in slices of, by calcium ions, hormones and adenosine 3':5'-cyclic monophosphate (Roobol, A. & Alleyne, G. A. O.) 157-165
- Kidney, rat, early effects of aldosterone on the specific acetylation of histone F2a1 in (Libby, P. R.) 907-912
- Kidney, rat, effects of a dietary excess of leucine on the activities of enzymes of the metabolic pathway from tryptophan to nicotinate in, and liver (Ghafoorunissa & Narasinga Rao, B. S.) 425-430
- α -Lactalbumin, milk, guinea-pig, detection of the messenger ribonucleic acid for (Campbell, P. N., McIlreavy, D. & Tarin, D.) 345-347
- Lactate, acceleration by lysine of gluconeogenesis from, in isolated rat liver cells (Cornell, N. W., Lund, P., Hems, R. & Krebs, H. A.) 671-672
- Lactate, effects of dichloroacetate on the extraction of glucose, pyruvate, free fatty acids and, by dog heart *in vivo* (McAllister, A., Allison, S. P. & Randle, P. J.) 1067-1081
- Lactate, induction and suppression of the key enzymes involved in glycolysis and gluconeogenesis in isolated perfused rat liver in response to (Wimhurst, J. M. & Manchester, K. L.) 143-156
- Lactation, inhibition by 2-chloroethyltrimethylammonium chloride of the biosynthesis of phosphatidylcholine in mammary-gland tissue taken from the cow during (Infante, J. P. & Kinsella, J. E.) 825-827
- Leaves, spinach, activity of adenosine 5'-sulphatophosphate kinase in chloroplasts isolated from (Burnell, J. N. & Anderson, J. W.) 565-579
- Leaves, spinach, biosynthesis of ribonucleic acids by isolated chloroplasts from (Hartley, M. R. & Ellis, R. J.) 249-262
- Leaves, spinach, site of inhibition by 2-amino-1,1,3-tricyanopropene of photosynthetic oxygen evolution by chloroplasts isolated from (Burden, E. M. & Horton, A. A.) 663-665
- Lecithin, see Phosphatidylcholine
- Lens, human, altered thermal lability of a fraction of glutathione reductase in, during aging (Harding, J. J.) 995-1000
- Leucine, effects of a dietary excess of, on the activities of enzymes of the metabolic pathway from tryptophan to nicotinate in rat liver and kidney (Ghafoorunissa & Narasinga Rao, B. S.) 425-430
- L-Leucine, effects of, on the metabolism of ammonia and glutamate in isolated rat liver mitochondria (McGivan, J. D., Bradford, N. M., Crompton, M. & Chappell, J. B.) 209-215
- Leucine, incorporation of, into glucagon in isolated perfused rat pancreas (O'Connor, K. J., Gay, A. & Lazarus, N. R.) 473-480
- Leucine, incorporation of, into insulin by islet tissue from the brown bullhead and the effect of temperature (Moule, M. L. & Yip, C. C.) 753-761
- Leucine, incorporation of, into protein by heavy, light and fluffy mitochondrial fractions obtained from rat liver (Satav, J. G., Rajwade, M. S., Katyare, S. S., Net-
- rawali, M. S., Fatterpaker, P. & Sreenivasan, A.) 687-695
- Leucine, regulation of the uptake of, and other nitrogen-containing compounds by *Candida utilis* N.C.Y.C. 321 (Jones, R. W. & Wild, D. G.) 617-627
- Leucocytes, polymorphonuclear, rabbit, enhancement by cytochalasin B of the retinol-induced selective release of lysosomal acid hydrolases by (Davies, P., Allison, A. C. & Haswell, A. D.) 33-41
- Leydig-cell tumour, mouse, effects of luteinizing hormone and adenosine 3':5'-cyclic monophosphate on the metabolism of free and esterified cholesterol in (Moyle, W. R., Jungas, R. L. & Greep, R. O.) 407-413
- Leydig-cell tumour, mouse, metabolism of free and esterified cholesterol by mitochondria from (Moyle, W. R., Jungas, R. L. & Greep, R. O.) 415-424
- Light, effect of, on the activities of enzymes involved in the pathway for the biosynthesis of hispidin from phenylalanine and tyrosine in *Polyporus hispidus* (Nambudiri, A. M. D., Vance, C. P. & Towers, G. H. N.) 891-897
- Light, effect of, on the biosynthesis of ribonucleic acids by isolated spinach leaf chloroplasts (Hartley, M. R. & Ellis, R. J.) 249-262
- Light, role of oxygen, electron transfer, energy transfer and, in the control of the activity of magnesium-protoporphyrin chelatase in *Rhodopseudomonas sphaeroides* (Gorchein, A.) 833-845
- Lipid droplets, isolation and properties of, from rat and rabbit ovarian tissues (Armstrong, D. T. & Flint, A. P. F.) 399-406
- Lipids, membrane, effects of altered composition of, on the transport of cations by *Saccharomyces cerevisiae* mitochondria (Haslam, J. M., Spithill, T. W., Linnane, A. W. & Chappell, J. B.) 949-957
- Lipoproteins, plasma, transport of exogenous (dietary) cholesterol as cholestryl ester of, in rabbit plasma (Rudel, L. L., Felts, J. M. & Morris, M. D.) 531-537
- Liver cells, rat, isolated, acceleration by lysine of gluconeogenesis from lactate in (Cornell, N. W., Lund, P., Hems, R. & Krebs, H. A.) 671-672
- Liver, changes in the activities of enzymes in, and other tissues of rats exposed to hypoxia (Cryer, A. & Bartley, W.) 1119-1122
- Liver, mouse, effect of starvation on the distribution of ribosomes between different functional states in (Norman, M., Gamulin, S. & Clark, K.) 387-398
- Liver, rabbit, changes in the biosynthesis of fatty acids in, and brown adipose tissue during perinatal development (Ilfie, J., Knight, B. L. & Myant, N. B.) 341-343
- Liver, rat, activities of enzymes involved in the biosynthesis of glycerolipids in, after subtotal hepatectomy (Mangiapani, E. H., Lloyd-Davies, K. A. & Brindley, D. N.) 103-112
- Liver, rat and mouse, decreased activity of porphyrin-metal chelatase in, in hepatic porphyria induced by treatment with 3,5-diethoxycarbonyl-1,4-dihydrocolidine (De Matteis, F., Abbritti, G. & Gibbs, A. H.) 717-727
- Liver, rat, apparent stimulation by adenosine triphosphate of proteolysis in homogenates of, and other tissues (Goldspink, D. F. & Goldberg, A. L.) 829-832
- Liver, rat, biosynthesis of cytochromes in (Druryan, R., Jakovcic, S. & Rabinowitz, M.) 377-385
- Liver, rat, changes during a starvation-re-feeding cycle

- in the biosynthesis and degradation of phosphoenol-pyruvate carboxylase in, and epididymal adipose tissue (Hopgood, M. F., Ballard, F. J., Reshef, L. & Hanson, R. W.) 445-453
- Liver, rat, changes related to energetic parameters of the cell in, produced by the chronic administration of ethanol (Bernstein, J., Videla, L. & Israel, Y.) 515-521
- Liver, rat, comparison between the effects in, produced by the chronic administration of ethanol and by thyroxine (Israel, Y., Videla, L., Macdonald, A. & Bernstein, J.) 523-529
- Liver, rat, comparison of the biochemical effects of 2-allyl-2-isopropylacetamide and phenobarbital in (Satyanarayana Rao, M. R. & Padmanaban, G.) 859-868
- Liver, rat, effect of hyperbaric oxygen on the generation of hydrogen peroxide by mitochondria from (Boveris, A. & Chance, B.) 707-716
- Liver, rat, effects of a dietary excess of leucine on the activities of enzymes of the metabolic pathway from tryptophan to nicotinate in, and kidney (Ghafoorunissa & Narasinga Rao, B. S.) 425-430
- Liver, rat, effects of ethanol on drug oxidations in slices and microsomal fraction of (Cinti, D. L., Grundin, R. & Orenius, S.) 367-375
- Liver, rat, effects of infection with *Diplococcus pneumoniae* on the biosynthesis of ribonucleic acids in (Thompson, W. L. & Wannemacher, R. W., Jr.) 79-87
- Liver, rat, effects of L-leucine on the metabolism of ammonia and glutamate in isolated mitochondria from (McGivan, J. D., Bradford, N. M., Crompton, M. & Chappell, J. B.) 209-215
- Liver, rat, evidence for the existence of proalbumin as a precursor in the biosynthesis of serum albumin in (Judah, J. D., Gamble, M. & Steadman, J. H.) 1083-1091
- Liver, rat, heterogeneous distribution of glucose 6-phosphatase in microsomal fractions from, as shown by adaptation of a cytochemical technique (Lewis, J. A. & Tata, J. R.) 69-78
- Liver, rat, increased activity of L-serine-pyruvate amino-transferase under gluconeogenic conditions in (Rowstell, E. V., Al-Tai, A. H., Carnie, J. A. & Rowstell, K. V.) 349-351
- Liver, rat, increased oxidative capacity in, produced by the chronic administration of ethanol (Videla, L., Bernstein, J. & Israel, Y.) 507-514
- Liver, rat, inhibition by fluorocitrate of aconitate hydratase activity and the carrier for the transport of tricarboxylic acids in isolated mitochondria from (Brand, M. D., Evans, S. M., Mendes-Mourão, J. & Chappell, J. B.) 217-224
- Liver, rat, inhibition by phenyl and phenolic compounds of the biosynthesis of sterols by preparations of (Ranganathan, S. & Ramasarma, T.) 737-743
- Liver, rat, male, evidence for the identification of acid-volatile selenium in, as hydrogen selenide formed from selenide during acidification (Diplock, A. T., Caygill, C. P. J., Jeffery, E. H. & Thomas, C.) 283-293
- Liver, rat, metabolism of 2-acetamido-4-methylthiazole and 2-acetamido-4-phenylthiazole by a supernatant fraction from (Chatfield, D. H. & Hunter, W. H.) 869-878
- Liver, rat, neonatal, hormonal regulation of the metabolism of glycogen in (Schwartz, A. L. & Rall, T. W.) 985-993
- Liver, rat, perfused, accumulation of amino acids by, in the presence of ethanol (Krebs, H. A., Hems, R. & Lund, P.) 697-705
- Liver, rat, perfused, isolated, degradation of chondroitin 4-sulphate by (Wood, K. M., Wusteman, F. S. & Curtis, C. G.) 1009-1013
- Liver, rat, perfused, isolated, induction and suppression of the key enzymes involved in glycolysis and gluconeogenesis in, in response to glucose, fructose and lactate (Wimhurst, J. M. & Manchester, K. L.) 143-156
- Liver, rat, perfused, isolated, metabolism of xylitol in (Woods, H. F. & Krebs, H. A.) 437-443
- Liver, rat, presence of N-terminal methionine in nascent chains of proteins and its cleavage during polypeptide-chain elongation in cell-free preparations of (Koffer-Gutmann, A. & Arnstein, H. R. V.) 969-983
- Liver, rat, problems associated with the assay of the activities of lysosomal arylsulphatases A and B of, and other tissues (Worwood, M., Dodgson, K. S., Hook, G. E. R. & Rose, F. A.) 183-190
- Liver, rat, production of amino acids in isolated mitochondria from (Ferdinand, W., Bartley, W. & Broomhead, V.) 431-436
- Liver, rat, quantitative characteristics of the transport of glutamate into mitochondria from (Bradford, N. M. & McGivan, J. D.) 1023-1029
- Liver, rat, regulation of the induction by 2-allyl-2-isopropylacetamide of the activity of 5-aminolaevulinate synthetase in (Padmanaban, G., Satyanarayana Rao, M. R. & Malathi, K.) 847-857
- Liver, rat, relative distribution of lysosomal arylsulphatases A and B in parenchymal and other cells of, and in other tissues (Hook, G. E. R., Dodgson, K. S., Rose, F. A. & Worwood, M.) 191-195
- Liver, rat, significance of promitochondrial structures for the biogenesis of mitochondria in (Satav, J. G., Rajwade, M. S., Katyare, S. S., Netrawali, M. S., Fatterpaker, P. & Sreenivasan, A.) 687-695
- Liver, rat, transport of inorganic phosphate by the dicarboxylate carrier in mitochondria from (Johnson, R. N. & Chappell, J. B.) 769-774
- Luteinizing hormone, effect of treatment with, on the composition of cholesteryl ester-storage granules isolated from rat ovary (Armstrong, D. T. & Flint, A. P. F.) 399-406
- Luteinizing hormone, effects of adenosine 3':5'-cyclic monophosphate and, on the metabolism of free and esterified cholesterol in mouse Leydig-cell tumour (Moyle, W. R., Jungas, R. L. & Greep, R. O.) 407-413
- Lycopene, stereochemistry of hydrogen elimination in the desaturation of phytoene to, and other unsaturated carotenoids in a *Flavobacterium* sp. (McDermott, J. C. B., Britton, G. & Goodwin, T. W.) 1115-1117
- Lysine, acceleration by, of gluconeogenesis from lactate in isolated rat liver cells (Cornell, N. W., Lund, P., Hems, R. & Krebs, H. A.) 671-672
- Lysine, incorporation of 5-aminolaevulinate and, into cytochromes in rat liver (Druyan, R., Jakovcic, S. & Rabinowitz, M.) 377-385
- Lysine, regulation of the uptake of, and other nitrogen-

- containing compounds by *Candida utilis* N.C.Y.C. 321 (Jones, R. W. & Wild, D. G.) 617-627
- Lysosomes, liver, rat, degradation of chondroitin 4-sulphate by (Wood, K. M., Wusteman, F. S. & Curtis, C. G.) 1009-1013
- Lysosomes, liver, rat, problems associated with the assay of the activities of arylsulphatases A and B of (Worwood, M., Dodgson, K. S., Hook, G. E. R. & Rose, F. A.) 183-190
- Lysosomes, liver, rat, relative distribution of arylsulphatases A and B of, in parenchymal and other cells (Hook, G. E. R., Dodgson, K. S., Rose, F. A. & Worwood, M.) 191-195
- Lysosomes, selective release of the acid hydrolases of, from rabbit phagocytic cells caused by cytochalasin B (Davies, P., Allison, A. C. & Haswell, A. D.) 33-41
- Macrophages, peritoneal, rat, relative distribution of lysosomal arylsulphatases A and B in, and other tissues (Hook, G. E. R., Dodgson, K. S., Rose, F. A. & Worwood, M.) 191-195
- Macrophages, rabbit, selective release of lysosomal acid hydrolases from, caused by cytochalasin B (Davies, P., Allison, A. C. & Haswell, A. D.) 33-41
- Magnesium-protoporphyrin chelatase, role of light, oxygen, electron transfer and energy transfer in the control of the activity of, in *Rhodopseudomonas sphaeroides* (Gorchein, A.) 833-845
- Malonyl-coenzyme A, role of, in the biosynthesis of isoprenoids by cell-free yeast preparations, by pigeon and rat liver preparations and by *Hevea brasiliensis* latex (Higgins, M. J. P. & Kekwick, R. G. O.) 295-310
- Mammary gland, lactating, cow, inhibition by 2-chloroethyltrimethylammonium chloride of the biosynthesis of phosphatidylcholine in tissue from (Infante, J. P. & Kinsella, J. E.) 825-827
- Mastocytoma cells, mouse, cultured, biosynthesis of glycosaminoglycans by (Lewis, R. G., Spencer, A. F. & Silbert, J. E.) 455-463
- Mastocytoma cells, mouse, cultured, biosynthesis of glycosaminoglycans by microsomal preparations from (Lewis, R. G., Spencer, A. F. & Silbert, J. E.) 465-471
- Membrane fractions, application of a cytochemical technique for the study of, containing a heterogeneous distribution of phosphatases (Lewis, J. A. & Tata, J. R.) 69-78
- Membranes, effects of altered composition of the lipids of, on the transport of cations by *Saccharomyces cerevisiae* mitochondria (Haslam, J. M., Spithill, T. W., Linnane, A. W. & Chappell, J. B.) 949-957
- Membranes, plasma, comparison of the carbohydrate-containing components of, of normal and 6-N,2'-O-dibutyryladenosine 3':5'-cyclic monophosphate-treated Chinese-hamster ovary cells (Baig, M. M. & Roberts, R. M.) 329-339
- Membranes, plasma, kidney-cortex, ox, binding of parathyroid hormone to (Sutcliffe, H. S., Martin, T. J., Eisman, J. A. & Pilczyk, R.) 913-921
- Membranes, reconstitution of oxidative phosphorylation and adenosine triphosphate-dependent nicotinamide-adenine dinucleotide (phosphate) transhydrogenase activity by a combination of fragments of, from *uncA⁻* and *uncB⁻* mutant strains of *Escherichia coli* K12 (Cox, G. B., Gibson, F. & McCann, L.) 1015-1021
- Mercapturic acids, identification of, as metabolites of allyl alcohol, allyl esters and acrolein in urine in the rat (Kaye, C. M.) 1093-1101
- Messenger ribonucleic acid, see Ribonucleic acid, messenger
- Methionine, absorption of, and other amino acids by mouse ascites-tumour cells depleted of both endogenous amino acids and adenosine triphosphate (Morville, M., Reid, M. & Eddy, A. A.) 11-26
- Methionine, incorporation of the methyl group of, into ergotamine by *Claviceps purpurea* (Fr.) Tul. (Bassett, R. A., Chain, E. B. & Corbett, K.) 1-10
- Methionine residues, N-terminal, presence of, in nascent chains of proteins and its cleavage during polypeptide-chain elongation in cell-free preparations of rat liver and rabbit reticulocytes (Kofler-Gutmann, A. & Arnstein, H. R. V.) 969-983
- Methyl α -[4-(*p*-chlorophenyl)phenoxy]isobutyrate (clofibrate), inhibition by, of the biosynthesis of sterols by rat liver preparations (Ranganathan, S. & Ramasarma, T.) 737-743
- Mevalonate, formation of, from malonyl-coenzyme A by rat liver preparations (Higgins, M. J. P. & Kekwick, R. G. O.) 295-310
- Mevalonate, inhibition by phenyl and phenolic compounds of the biosynthesis of sterols from, by rat liver preparations (Ranganathan, S. & Ramasarma, T.) 737-743
- Microsomal fraction, liver, rat, comparison of the biochemical effects of 2-allyl-2-isopropylacetamide and phenobarbital in (Satyanarayana Rao, M. R. & Padmanaban, G.) 859-868
- Microsomal fraction, liver, rat, effects of ethanol on drug oxidations in (Cinti, D. L., Grundin, R. & Orrenius, S.) 367-375
- Microsomal fraction, liver, rat, male, evidence for the identification of acid-volatile selenium in, as hydrogen selenide formed from selenide during acidification (Diplock, A. T., Caygill, C. P. J., Jeffery, E. H. & Thomas, C.) 283-293
- Microsomal fractions, liver, rat, heterogeneous distribution of glucose 6-phosphatase in, as shown by a cytochemical technique (Lewis, J. A. & Tata, J. R.) 69-78
- Microsomal preparations, mastocytoma-cell, mouse, biosynthesis of glycosaminoglycans by (Lewis, R. G., Spencer, A. F. & Silbert, J. E.) 465-471
- Milk, guinea-pig, detection of the messenger ribonucleic acid for the α -lactalbumin of (Campbell, P. N., McIlreavy, D. & Tarin, D.) 345-347
- Mineralocorticoids, early effects of, on the specific acetylation of histone F2a1 in rat kidney (Libby, P. R.) 907-912
- Mitochondria, avocado-mesocarp, involvement of L-carnitine in the β -oxidation of fatty acids by (Panter, R. A. & Mudd, J. B.) 655-658
- Mitochondria, broad-bean and yeast, activity of polypropenyl pyrophosphate-*p*-hydroxybenzoate polypropenyl-transferase in (Thomas, G. & Threlfall, D. R.) 811-814
- Mitochondria, cerebral-cortex, rat, effect of phenylpyruvate on the activity of citrate synthase of (Land, J. M. & Clark, J. B.) 545-555
- Mitochondria, cerebral-cortex, rat, lack of effect of phenylpyruvate on the activity of the pyruvate dehydrogenase system of (Land, J. M. & Clark, J. B.) 539-544

- Mitochondria, heart, pigeon, general properties of and the effect of hyperbaric oxygen on the generation of hydrogen peroxide by (Boveris, A. & Chance, B.) 707-716
- Mitochondria, Leydig-cell-tumour, mouse, metabolism of free and esterified cholesterol by (Moyle, W. R., Jungas, R. L. & Greep, R. O.) 415-424
- Mitochondria, liver, rat, effect of hyperbaric oxygen on the generation of hydrogen peroxide by (Boveris, A. & Chance, B.) 707-716
- Mitochondria, liver, rat, isolated, effects of L-leucine on the metabolism of ammonia and glutamate in (McGivan, J. D., Bradford, N. M., Crompton, M. & Chappell, J. B.) 209-215
- Mitochondria, liver, rat, isolated, inhibition by fluorocitrate of aconitase hydratase activity and the carrier for the transport of tricarboxylic acids in (Brand, M. D., Evans, S. M., Mendes-Mourão, J. & Chappell, J. B.) 217-224
- Mitochondria, liver, rat, isolated, production of amino acids in (Ferdinand, W., Bartley, W. & Broomhead, V.) 431-436
- Mitochondria, liver, rat, quantitative characteristics of the transport of glutamate into (Bradford, N. M. & McGivan, J. D.) 1023-1029
- Mitochondria, liver, rat, transport of inorganic phosphate by the dicarboxylate carrier in (Johnson, R. N. & Chappell, J. B.) 769-774
- Mitochondria, properties of the electron-transport system of, from the slime mould *Physarum polycephalum* (Barnes, R., Colleran, E. M. & Jones, O. T. G.) 745-751
- Mitochondria, respiration-driven translocation of protons by, with differing efficiencies of oxidative phosphorylation from *Candida utilis* N.C.Y.C. 193 and *Saccharomyces carlsbergensis* N.C.Y.C. 745 (Downie, J. A. & Garland, P. B.) 1045-1049
- Mitochondria, respiratory properties of, from an antimycin A- and cyanide-resistant variant arising during growth of *Candida utilis* N.C.Y.C. 193 in copper-deficient medium (Downie, J. A. & Garland, P. B.) 1051-1061
- Mitochondria, *Saccharomyces cerevisiae*, effects of altered composition of membrane lipids on the transport of cations by (Haslam, J. M., Spithill, T. W., Linnane, A. W. & Chappell, J. B.) 949-957
- Mitochondria, *Saccharomyces cerevisiae*, effects of physiological and genetic manipulations on the transport systems for anions of tricarboxylic acid-cycle intermediates in (Perkins, M., Haslam, J. M. & Linnane, A. W.) 923-934
- Mitochondria, *Saccharomyces cerevisiae*, requirement for mitochondrial biosynthesis of protein for the formation of the normal adenine nucleotide transporter in (Haslam, J. M., Perkins, M. & Linnane, A. W.) 935-947
- Mitochondria, significance of promitochondrial structures for the biogenesis of, in rat liver (Satav, J. G., Rajwade, M. S., Katyare, S. S., Netrawali, M. S., Fatterpaker, P. & Sreenivasan, A.) 687-695
- Mitochondria, *Vigna sinensis* seeds, biosynthesis of protein *in vitro* in a system from (Goswami, B. B., Chakrabarti, S., Dube, D. K. & Roy, S. C.) 815-816
- Mucosa, small-intestinal, rat, influence of cholecalciferol on the initial kinetics of the uptake of calcium ions by (O'Donnell, J. M. & Smith, M. W.) 667-669
- Mucosubstances, cell-surface, from trypsin disaggregation of normal and polyoma-virus-transformed lines of baby-hamster kidney cells (Minnikin, S. M. & Allen, A.) 1123-1126
- Muscle, flight, estimation of the substrate cycling of fructose 6-phosphate through the reactions catalysed by fructose diphosphatase and phosphofructokinase in, of the bumble-bee *Bombus affinis* *in vivo* (Clark, M. G., Bloxham, D. P., Holland, P. C. & Lardy, H. A.) 589-597
- Muscle, heart, rat, apparent stimulation by adenosine triphosphate of proteolysis in homogenates of, and other tissues (Goldspink, D. F. & Goldberg, A. L.) 829-832
- Muscle, skeletal, changes in the activities of enzymes in, and other tissues of rats exposed to (Cryer, A. & Bartley, W.) 1119-1122
- Muscle, skeletal, rat, apparent stimulation by adenosine triphosphate of proteolysis in homogenates of, and other tissues (Goldspink, D. F. & Goldberg, A. L.) 829-832
- Muscle, skeletal, rate and extent of the phosphorylation of creatine by anaerobic glycolysis in a reconstituted mixture of glycolytic enzymes from (Scopes, R. K.) 197-208
- Muscle, skeletal, relationship between the concentrations of ketone bodies and non-esterified fatty acids in plasma and, in fed, starved and alloxan-diabetic rats (Owen, O. E., Markus, H., Sarshik, S. & Mozzoli, M.) 499-506
- Nervous system, central, possible use of nervous tissue in culture as a model for the study of the uptake of neurotransmitters by (Tunnicliff, G., Cho, Y. D., Blackwell, N., Martin, R. O. & Wood, J. D.) 27-32
- Nervous tissue, activities of hexokinase, phosphofructokinase, 3-oxo acid coenzyme A-transferase and aceto-acetyl-coenzyme A thiolase in, from vertebrates and invertebrates (Sugden, P. H. & Newsholme, E. A.) 97-101
- Neurospora crassa*, regulation of the biosynthesis of nitrate reductase at the level of gene transcription and translation of messenger ribonucleic acid in (Sorger, G. J. & Davies, J.) 673-685
- Neurotransmitters, effects of pyridoxine deficiency and of DL-p-chlorophenylalanine administration on the concentrations of, in rat brain (Bhagavan, H. N. & Coursin, D. B.) 763-767
- Neurotransmitters, possible use of nervous tissue in culture as a model for the study of the uptake of, by the central nervous system (Tunnicliff, G., Cho, Y. D., Blackwell, N., Martin, R. O. & Wood, J. D.) 27-32
- Niacin, see Nicotinate
- Nicotinamide, effects of, on the release of insulin by and the metabolism of nicotinamide-adenine dinucleotide in isolated rat pancreas islets of Langerhans (Deery, D. J. & Taylor, K. W.) 557-563
- Nicotinamide-adenine dinucleotide, effects of azaserine and nicotinamide on the release of insulin by and the metabolism of, in isolated rat pancreas islets of Langerhans (Deery, D. J. & Taylor, K. W.) 557-563

- Nicotinamide-adenine dinucleotide (phosphate) transhydrogenase, adenosine triphosphate-dependent, reconstitution of oxidative phosphorylation and the activity of, by a combination of membrane fragments from *uncA⁻* and *uncB⁻* mutant strains of *Escherichia coli* K12 (Cox, G. B., Gibson, F. & McCann, L.) 1015-1021
- Nicotinamide-adenine dinucleotide (reduced) oxidase, alternative, development of, in an antimycin A- and cyanide-resistant variant arising during growth of *Candida utilis* N.C.Y.C. 193 in copper-deficient medium (Downie, J. A. & Garland, P. B.) 1051-1061
- Nicotinamide-adenine dinucleotide (reduced) oxidase system, microsomal, comparison between the effects produced by the chronic administration of ethanol and by thyroxine on the activity of, and other parameters in rat liver (Israel, Y., Videla, L., Macdonald, A. & Bernstein, J.) 523-529
- Nicotinamide-adenine dinucleotide (reduced) oxidase system, microsomal, increased activity of, in rat liver produced by the chronic administration of ethanol (Videla, L., Bernstein, J. & Israel, Y.) 507-514
- Nicotinate, effects of a dietary excess of leucine on the activities of enzymes of the metabolic pathway from tryptophan to, in rat liver and kidney (Ghafoorunissa & Narasinga Rao, B. S.) 425-430
- Nitrate, effects of ammonia and, on the biosynthesis of nitrate reductase at the level of gene transcription and translation of messenger ribonucleic acid in *Neurospora* spp. (Sorger, G. J. & Davies, J.) 673-685
- Nitrate reductase, regulation of the biosynthesis of, at the level of gene transcription and translation of messenger ribonucleic acid in *Neurospora crassa* (Sorger, G. J. & Davies, J.) 673-685
- Noradrenaline, effects of pyridoxine deficiency and of DL-p-chlorophenylalanine administration on the concentrations of 5-hydroxytryptamine and, in rat brain (Bhagavan, H. N. & Coursin, D. B.) 763-767
- Oestrogen-receptor protein, uterus, rat, use of deoxyribonucleic acid-cellulose chromatography and isoelectric focusing for the characterization and partial purification of the 8S complex between oestradiol-17 β and (Mainwaring, W. I. P. & Irving, R.) 113-127
- Oocytes, *Xenopus laevis*, thermal stability of biologically active ribosomal subparticles from (Cox, R. A., Pratt, H., Huvos, P., Higginson, B. & Hirst, W.) 775-793
- Organism RI, metabolism of thiophen-2-carboxylate by (Cripps, R. E.) 353-366
- Orotate, effects of infection with *Diplococcus pneumoniae* on the incorporation of, into ribonucleic acids in rat liver (Thompson, W. L. & Wannemacher, R. W., Jr.) 79-87
- Ovary cells, Chinese-hamster, normal and 6-N,2'-O-dibutyryladenosine 3':5'-cyclic monophosphate-treated, comparison of the carbohydrate-containing components of the plasma membranes of (Baig, M. M. & Roberts, R. M.) 329-339
- Ovary, rat and rabbit, isolation and properties of cholesteryl ester-storage granules from (Armstrong, D. T. & Flint, A. P. F.) 399-406
- Oxidative phosphorylation, see Phosphorylation, oxidative
- 2-Oxoglutarate, degradation of thiophen-2-carboxylate to sulphate and, by an unidentified micro-organism (Cripps, R. E.) 353-366
- Oxygen, changes in the activities of enzymes in tissues of rats exposed to low partial pressures of (Cryer, A. & Bartley, W.) 1119-1122
- Oxygen, comparison between the effects produced by the chronic administration of ethanol and by thyroxine on the consumption of, and other parameters in rat liver (Israel, Y., Videla, L., Macdonald, A. & Bernstein, J.) 523-529
- Oxygen, effect of the acute action of ammonia on the consumption of, in rat brain *in vivo* (Hawkins, R. A., Miller, A. L., Nielsen, R. C. & Veech, R. L.) 1001-1008
- Oxygen, hyperbaric, effect of, on the generation of hydrogen peroxide by pigeon heart and rat liver mitochondria (Boveris, A. & Chance, B.) 707-716
- Oxygen, increased consumption of, in rat liver produced by the chronic administration of ethanol (Videla, L., Bernstein, J. & Israel, Y.) 507-514
- Oxygen, role of light, electron transfer, energy transfer and, in the control of the activity of magnesium-protoporphyrin chelatase in *Rhodopseudomonas sphaeroides* (Gorchein, A.) 833-845
- Oxygen, role of limitation of the supply of, on the metabolism of poly-3-hydroxybutyrate in *Azotobacter beijerinckii* N.C.I.B. 9067 (Senior, P. J. & Dawes, E. A.) 225-238
- Oxygen, site of inhibition by 2-amino-1,1,3-tricyanopropene of the photosynthetic evolution of, by isolated spinach leaf chloroplasts (Burden, E. M. & Horton, A. A.) 663-665
- Palmitate, effects of dichloroacetate on the metabolism of glucose, pyruvate, acetate, 3-hydroxybutyrate and, in rat diaphragm and heart muscle *in vitro* (McAllister, A., Allison, S. P. & Randle, P. J.) 1067-1081
- Palmitoyl-L-carnitine, oxidation of, and other acyl compounds by avocado mesocarp mitochondria (Panter, R. A. & Mudd, J. B.) 655-658
- Pancreas, mouse, concentration of adenosine 3':5'-cyclic monophosphate in isolated islets of Langerhans from, measured by a protein-binding radioassay method (Cooper, R. H., Ashcroft, S. J. H. & Randle, P. J.) 599-605
- Pancreas, rat, effects of azaserine and nicotinamide on the release of insulin by and the metabolism of nicotinamide-adenine dinucleotide in islets of Langerhans isolated from (Deery, D. J. & Taylor, K. W.) 557-563
- Pancreas, rat, evidence that agents affecting the release of insulin by isolated islets of Langerhans from, by altering the concentration of adenosine 3':5'-cyclic phosphate exert their effects by altering the activity of an adenosine 3':5'-cyclic monophosphate-dependent protein kinase (Montague, W. & Howell, S. L.) 321-327
- Pancreas, rat, perfused, isolated, biosynthesis of glucagon in (O'Connor, K. J., Gay, A. & Lazarus, N. R.) 473-480
- Pancreas, rat, role of adenosine 3':5'-cyclic monophosphate in the regulation of the release of insulin by islets of Langerhans isolated from, during pregnancy (Green, I. C., Howell, S. L., Montague, W. & Taylor, K. W.) 481-487

- Parathyroid hormone, binding of, to ox kidney-cortex plasma membranes (Sutcliffe, H. S., Martin, T. J., Eisman, J. A. & Pilczyk, R.) 913-921
- Pellagra, effects of a dietary excess of leucine on the activities of enzymes of the metabolic pathway from tryptophan to nicotinate in rat liver and kidney and their relevance to the aetiology of (Ghafoorunissa & Narasinga Rao, B. S.) 425-430
- Pentobarbital hydroxylase, effect of ethanol on the activity of, in rat liver microsomal fraction (Cinti, D. L., Grundin, R. & Orrenius, S.) 367-375
- Peptidases, enzymology of, and other hydrolases in purified preparations of rabbit kidney-cortex brush border (George, S. G. & Kenny, A. J.) 43-57
- Persea americana*, see Avocado
- pH, effect of, on the generation of hydrogen peroxide by pigeon heart mitochondria (Boveris, A. & Chance, B.) 707-716
- Phenobarbital, comparison of the biochemical effects of 2-allyl-2-isopropylacetamide and, in rat liver (Satyanarayana Rao, M. R. & Padmanaban, G.) 859-868
- Phenobarbital, effect of, on the induction by 2-allyl-2-isopropylacetamide of the activity of 5-aminolaevulinate synthetase in rat liver (Padmanaban, G., Satyanarayana Rao, M. R. & Malathi, K.) 847-857
- Phenylalanine, effect of light on the activities of enzymes involved in the pathway for the biosynthesis of hispidin from, in *Polyporus hispidus* (Nambudiri, A. M. D., Vance, C. P. & Towers, G. H. N.) 891-897
- Phenylalanine, incorporation of, into ergotamine by *Claviceps purpurea* (Fr.) Tul. (Bassett, R. A., Chain, E. B. & Corbett, K.) 1-10
- Phenylalanine, incorporation of, into protein *in vitro* in a system from mitochondria of *Vigna sinensis* seeds (Goswami, B. B., Chakrabarti, S., Dube, D. K. & Roy, S. C.) 815-816
- Phenylketonuria, effects of phenylpyruvate on the activities of enzymes involved in the biosynthesis of fatty acids in rat cerebral cortex and their significance in the aetiology of (Land, J. M. & Clark, J. B.) 545-555
- Phenylketonuria, lack of effect of phenylpyruvate on the activity of the pyruvate dehydrogenase system of rat cerebral-cortex mitochondria and its relevance to the aetiology of (Land, J. M. & Clark, J. B.) 539-544
- Phenylpyruvate, effects of, on the activities of enzymes involved in the biosynthesis of fatty acids in rat cerebral cortex (Land, J. M. & Clark, J. B.) 545-555
- Phenylpyruvate, lack of effect of, on the activity of the pyruvate dehydrogenase system of rat cerebral-cortex mitochondria (Land, J. M. & Clark, J. B.) 539-544
- Phlorrhizin, inhibitory effect of, on the stimulation by insulin of the biosynthesis of growth hormone in rat anterior pituitary gland *in vitro* (Betteridge, A. & Wallis, M.) 1103-1113
- Phosphatases, application of a cytochemical technique for the study of membrane fractions containing a heterogeneous distribution of (Lewis, J. A. & Tata, J. R.) 69-78
- Phosphatases, enzymology of, and other hydrolases in purified preparations of rabbit kidney-cortex brush border (George, S. G. & Kenny, A. J.) 43-57
- Phosphate, inorganic, transport of, by the dicarboxylate carrier in rat liver mitochondria (Johnson, R. N. & Chappell, J. B.) 769-774
- Phosphatidate phosphohydrolase, activities of, and other enzymes involved in the biosynthesis of glycerolipids in rat liver after subtotal hepatectomy (Mangiapani, E. H., Lloyd-Davies, K. A. & Brindley, D. N.) 103-112
- Phosphatidylcholine, inhibition by 2-chloroethyltrimethylammonium chloride of the biosynthesis of, in mammary-gland tissue from the lactating cow (Infante, J. P. & Kinsella, J. E.) 825-827
- Phosphatidylethanolamine, formation of ceramide phosphorylethanolamine from, in the rumen protozoon *Entodinium caudatum* (Broad, T. E. & Dawson, R. M. C.) 659-662
- Phosphodiesterase, changes in the concentration of adenosine 3':5'-cyclic monophosphate and the activity of, during axenic growth and differentiation of cells of the slime mould *Dictyostelium discoideum* (Malkinson, A. M. & Ashworth, J. M.) 311-319
- Phosphodiesterase I, properties and location of, and other phosphodiesterases in mammalian kidney cortex (Dawson, R. M. C. & Clarke, N. G.) 59-67
- Phosphoenolpyruvate, requirement for, in the uptake of glucose by *Escherichia coli* K12 (Kornberg, H. L. & Soutar, A. K.) 489-498
- Phosphoenolpyruvate carboxylase, changes during a starvation-re-feeding cycle in the biosynthesis and degradation of, in rat liver and epididymal adipose tissue (Hopgood, M. F., Ballard, F. J., Reshef, L. & Hanson, R. W.) 445-453
- Phosphofructokinase, estimation of the substrate cycling of fructose 6-phosphate through reactions catalysed by fructose diphosphatase and, in flight muscle of the bumble-bee *Bombus affinis* *in vivo* (Clark, M. G., Bloxham, D. P., Holland, P. C. & Lardy, H. A.) 589-597
- Phosphofructokinase, model constructed *in vitro* for the substrate cycling of fructose 6-phosphate through the reactions catalysed by fructose diphosphatase and (Bloxham, D. P., Clark, M. G., Holland, P. C. & Lardy, H. A.) 581-586
- Phosphofructokinase, theoretical estimation of the substrate cycling of fructose 6-phosphate *in vivo* through the reactions catalysed by fructose diphosphatase and (Bloxham, D. P., Clark, M. G., Goldberg, D. M., Holland, P. C. & Lardy, H. A.) 586-587
- 6-Phosphogluconate dehydratase, induction of the activities of gluconate kinase and, in *Escherichia coli* K12 during growth on gluconate (Kornberg, H. L. & Soutar, A. K.) 489-498
- 3-Phosphoglycerate kinase, thermal stability of, in human lens during aging (Harding, J. J.) 995-1000
- Phosphopyruvate carboxylase, relationship between the activity of, and the de-repression of exo- β -N-acetylglucosaminidase in *Bacillus subtilis* B (Brewer, S. J. & Berkeley, R. C. W.) 271-281
- Phosphorylase, activity of, in neonatal rat liver (Schwartz, A. L. & Rall, T. W.) 985-993
- Phosphorylase *a*, dependence on the activity of, of the rate and extent of phosphorylation of creatine by anaerobic glycolysis in a reconstituted mixture of glycolytic enzymes from skeletal muscle (Scopes, R. K.) 197-208

- Phosphorylase *a*, liver, mouse, inhibitory effect of the administration of fructose on the activity of, and its relevance to the unresponsiveness to glucagon of human patients with hereditary fructose intolerance (Van den Berghe, G., Hue, L. & Hers, H. G.) 637-645
- Phosphorylation, oxidative, reconstitution of adenosine triphosphate-dependent nicotinamide-adenine dinucleotide (phosphate) transhydrogenase activity and, by a combination of membrane fragments from *uncA⁻* and *uncB⁻* mutant strains of *Escherichia coli* K12 (Cox, G. B., Gibson, F. & McCann, L.) 1015-1021
- Phosphorylation, oxidative, respiration-driven translocation of protons by mitochondria with differing efficiencies of, from *Candida utilis* N.C.Y.C. 193 and *Saccharomyces carlsbergensis* N.C.Y.C. 745 (Downie, J. A. & Garland, P. B.) 1045-1049
- Photosynthesis, site of inhibition by 2-amino-1,1,3-tricyanopropene of the evolution of oxygen during, by isolated spinach leaf chloroplasts (Burden, E. M. & Horton, A. A.) 663-665
- Physarum polycephalum*, see Slime mould
- Phytoene, stereochemistry of hydrogen elimination in the desaturation of, to lycopene, rubixanthin and zeaxanthin in a *Flavobacterium* sp. (McDermott, J. C. B., Britton, G. & Goodwin, T. W.) 1115-1117
- Pituitary gland, anterior, stimulation by insulin of the biosynthesis of growth hormone in, *in vitro* (Betteridge, A. & Wallis, M.) 1103-1113
- Plasma, foetal, mouse, role of sialyltransferase in the regulation of the microheterogeneity of α -foetoprotein in, and amniotic fluid during development (Zimmerman, E. F. & Madappally, M. M.) 807-810
- Plasma membrane, see Membrane, plasma
- Plasma, rabbit, transport of exogenous (dietary) cholesterol as cholesteryl ester of plasma lipoproteins in (Rudel, L. L., Felts, J. M. & Morris, M. D.) 531-537
- Plasma, relationship between the concentrations of ketone bodies and non-esterified fatty acids in skeletal muscle and, in fed, starved and alloxan-diabetic rats (Owen, O. E., Markus, H., Sarshik, S. & Mozzoli, M.) 499-506
- Poly-3-hydroxybutyrate, regulation of the metabolism of, in *Azotobacter beijerinckii* N.C.I.B. 9067 (Senior, P. J. & Dawes, E. A.) 225-238
- Poly-3-hydroxybutyrate, role of β -ketothiolase in the regulation of the metabolism of, in *Hydrogenomonas eutropha* H16 (A.T.C.C. 17699) (Oeding, V. & Schlegel, H. G.) 239-248
- Polyoma virus, cell-surface mucosubstances from trypsin disaggregation of normal baby-hamster kidney cells and of the same line transformed by (Minnikin, S. M. & Allen, A.) 1123-1126
- Polypeptide-chain elongation, presence of *N*-terminal methionine in nascent chains of proteins and its cleavage during, in cell-free preparations of rat liver and rabbit reticulocytes (Koffer-Gutmann, A. & Arnstein, H. R. V.) 969-983
- Polyporus hispidus*, effect of light on the activities of enzymes involved in the pathway for the biosynthesis of hispidin from phenylalanine and tyrosine in (Nambudiri, A. M. D., Vance, C. P. & Towers, G. H. N.) 891-897
- Polyprenyl pyrophosphate-*p*-hydroxybenzoate polyprenyltransferase, activity of, in mitochondria of broad-bean seeds and yeast (Thomas, G. & Threlfall, D. R.) 811-814
- Polyribosomes, control by testosterone of the formation of, in rat ventral prostate gland (Mainwaring, W. I. P. & Wilce, P. A.) 795-805
- Polyribosomes, effect of starvation on the relative proportions of ribosome monomers and, in mouse liver (Norman, M., Gamulin, S. & Clark, K.) 387-398
- Polyribosomes, thermal stability of, and of ribosomes and biologically active ribosomal subparticles from rabbit reticulocytes (Cox, R. A., Pratt, H., Huvos, P., Higginson, B. & Hirst, W.) 775-793
- Polyosomes, see Polyribosomes
- Porphobilinogen, decreased excretion of, and increased excretion of 5-aminolaevulinate in urine of the iron-deficient anaemic rat (Sharma, D. C.) 821-823
- Porphyria, hepatic, decreased activity of porphyrin-metal chelatase in rat and mouse liver in, induced by treatment with 3,5-dietoxycarbonyl-1,4-dihydrocollidine (De Matteis, F., Abbritti, G. & Gibbs, A. H.) 717-727
- Porphyrin, aberration in the metabolism of, in the iron-deficient anaemic rat (Sharma, D. C.) 821-823
- Porphyrin-metal chelatase, decreased activity of, in rat and mouse liver in hepatic porphyria induced by treatment with 3,5-dietoxycarbonyl-1,4-dihydrocollidine (De Matteis, F., Abbritti, G. & Gibbs, A. H.) 717-727
- Potassium ions, effects of altered composition of membrane lipids on the transport of, by *Saccharomyces cerevisiae* mitochondria (Haslam, J. M., Spithill, T. W., Linnane, A. W. & Chappell, J. B.) 949-957
- Pregnancy, role of adenosine 3':5'-cyclic monophosphate in the regulation of the release of insulin by isolated rat pancreas islets of Langerhans during (Green, I. C., Howell, S. L., Montague, W. & Taylor, K. W.) 481-487
- Pregnenolone (3 β -hydroxypregn-5-en-20-one), biosynthesis of progesterone and, by mouse Leydig-cell-tumour mitochondria (Moyle, W. R., Jungas, R. L. & Greep, R. O.) 415-424
- Proalbumin, evidence for the existence of, as a precursor in the biosynthesis of serum albumin in rat liver (Judah, J. D., Gamble, M. & Steadman, J. H.) 1083-1091
- Progesterone, biosynthesis of pregnenolone and, by mouse Leydig-cell-tumour mitochondria (Moyle, W. R., Jungas, R. L. & Greep, R. O.) 415-424
- Progesterone-receptor protein, guinea-pig, use of deoxyribonucleic acid-cellulose chromatography and isoelectric focusing for the characterization and partial purification of the 7S complex of progesterone and (Mainwaring, W. I. P. & Irving, R.) 113-127
- Proline, incorporation of, into ergotamine by *Claviceps purpurea* (Fr.) Tul. (Bassett, R. A., Chain, E. B. & Corbett, K.) 1-10
- Promitochondrial structures, significance of, for the biogenesis of mitochondria in rat liver (Satav, J. G., Rajwade, M. S., Katyare, S. S., Netrawali, M. S., Fatterpaker, P. & Sreenivasan, A.) 687-695
- Propionaldehyde, metabolism of 1-aminopropan-2-ol via, in *Pseudomonas* sp. P6 (N.C.I.B. 10431) (Jones, A. & Turner, J. M.) 167-182
- Propionaldehyde, roles of amino alcohol kinase and amino alcohol *O*-phosphate phospho-lyase in the formation of,

- during the metabolism of 1-aminopropan-2-ol by *Erwinia* spp. (Jones, A., Faulkner, A. & Turner, J. M.) 959-968
- Prostate gland, rat, reappraisal of the effects of adenosine 3':5'-cyclic monophosphate on the function and morphology of (Mangan, F. R., Pegg, A. E. & Mainwaring, W. I. P.) 129-142
- Prostate gland, rat, use of deoxyribonucleic acid-cellulose chromatography and isoelectric focusing for the characterization and partial purification of the 8S androgen-receptor complex from (Mainwaring, W. I. P. & Irving, R.) 113-127
- Prostate gland, ventral, rat, control by testosterone of the form and function of ribosomes in (Mainwaring, W. I. P. & Wilce, P. A.) 795-805
- Protein, biosynthesis of, by heavy, light and fluffy mitochondrial fractions obtained from rat liver (Satav, J. G., Rajwade, M. S., Katyare, S. S., Netrawali, M. S., Fatterpaker, P. & Sreenivasan, A.) 687-695
- Protein, biosynthesis of, *in vitro* in a system from mitochondria of *Vigna sinensis* seeds (Goswami, B. B., Chakrabarti, S., Dube, D. K. & Roy, S. C.) 815-816
- Protein, effect of starvation on the distribution of ribosomes between different functional states in mouse liver and its role in the regulation of the biosynthesis of (Norman, M., Gamulin, S. & Clark, K.) 387-398
- Protein, effects of inhibitors of the biosynthesis of, on the biosynthesis of cytochromes in rat liver (Druryan, R., Jakovcic, S. & Rabinowitz, M.) 377-385
- Protein kinase, adenosine 3':5'-cyclic monophosphate-dependent, evidence that agents affecting the release of insulin by isolated rat pancreas islets of Langerhans by altering the concentration of adenosine 3':5'-cyclic monophosphate exert their effects by altering the activity of (Montague, W. & Howell, S. L.) 321-327
- Protein, requirement for mitochondrial biosynthesis of, for the formation of the normal adenine nucleotide transporter in *Saccharomyces cerevisiae* mitochondria (Haslam, J. M., Perkins, M. & Linnane, A. W.) 935-947
- Protein, specific radioactivity of the precursor pool for estimates of the rate of biosynthesis of, in the rat (Fern, E. B. & Garlick, P. J.) 1127-1130
- Proteins, presence of N-terminal methionine in nascent chains of, and its cleavage during polypeptide-chain elongation in cell-free preparations of rat liver and rabbit reticulocytes (Koffer-Gutmann, A. & Arnstein, H. R. V.) 969-983
- Proteolysis, apparent stimulation by adenosine triphosphate of, in homogenates of various rat tissues (Goldspink, D. F. & Goldberg, A. L.) 829-832
- Protons, absorption of, with specific amino acids and carbohydrates by *Saccharomyces* spp. (Seaston, A., Inkson, C. & Eddy, A. A.) 1031-1043
- Protons, effects of altered composition of membrane lipids on the transport of, by *Saccharomyces cerevisiae* mitochondria (Haslam, J. M., Spithill, T. W., Linnane, A. W. & Chappell, J. B.) 949-957
- Protons, respiration-driven translocation of, by mitochondria with differing efficiencies of oxidative phosphorylation from *Candida utilis* N.C.Y.C. 193 and *Saccharomyces carlsbergensis* N.C.Y.C. 745 (Downie, J. A. & Garland, P. B.) 1045-1049
- Protoporphyrin, role of light, oxygen, electron transfer and energy transfer in the control of the pathway for the biosynthesis of bacteriochlorophyll from, in *Rhodopseudomonas sphaeroides* (Gorchein, A.) 833-845
- Pseudomonas putida*, identification of 2-hydroxy-6-oxo-6-phenylhexa-2,4-dienoate as the *meta*-cleavage product formed from 2,3-dihydroxybiphenyl by (Catelani, D., Colombi, A., Sorlini, C. & Treccani, V.) 1063-1066
- Pseudomonas* sp. P6 (N.C.I.B. 10431), metabolism of 1-aminopropan-2-ol and ethanalamine via propionaldehyde and acetaldehyde respectively in (Jones, A. & Turner, J. M.) 167-182
- Purines, regulation of the uptake of amino acids, pyrimidines and, by *Candida utilis* N.C.Y.C. 321 (Jones, R. W. & Wild, D. G.) 617-627
- Pyridoxine, effects of deficiency of, and of DL-p-chlorophenylalanine administration on 5-hydroxytryptamine and noradrenaline concentrations in brain and 5-hydroxytryptamine concentration in blood of the rat (Bhagavan, H. N. & Coursin, D. B.) 763-767
- Pyrimidines, regulation of the uptake of amino acids, purines and, by *Candida utilis* N.C.Y.C. 321 (Jones, R. W. & Wild, D. G.) 617-627
- Pyruvate dehydrogenase, activation by dichloroacetate of, in perfused rat heart (Whitehouse, S. & Randle, P. J.) 651-653
- Pyruvate dehydrogenase, effect of insulin on the activity of, in rat epididymal adipose tissue (Berman, B. G. & Halperin, M. L.) 885-889
- Pyruvate dehydrogenase system, lack of effect of phenylpyruvate on the activity of, of rat cerebral-cortex mitochondria (Land, J. M. & Clark, J. B.) 539-544
- Pyruvate, effect of insulin on the metabolism of, in rat epididymal adipose tissue (Berman, B. G. & Halperin, M. L.) 885-889
- Pyruvate, effects of dichloroacetate on the extraction of glucose, lactate, free fatty acids and, by dog heart *in vivo* (McAllister, A., Allison, S. P. & Randle, P. J.) 1067-1081
- Pyruvate, effects of dichloroacetate on the metabolism of glucose, acetate, 3-hydroxybutyrate, palmitate and, in rat diaphragm and heart muscle *in vitro* (McAllister, A., Allison, S. P. & Randle, P. J.) 1067-1081
- Reticulocytes, rabbit, presence of N-terminal methionine in nascent chains of globin and its cleavage during polypeptide-chain elongation in cell-free preparations of (Koffer-Gutmann, A. & Arnstein, H. R. V.) 969-983
- Reticulocytes, rabbit, thermal stability of ribosomes and biologically active ribosomal subparticles from (Cox, R. A., Pratt, H., Huvos, P., Higginson, B. & Hirst, W.) 775-793
- Retinol, enhancement by cytochalasin B of the selective release of lysosomal acid hydrolases by rabbit polymorphonuclear leucocytes induced by (Davies, P., Allison, A. C. & Haswell, A. D.) 33-41
- Rhodopseudomonas sphaeroides*, role of light, oxygen, electron transfer and energy transfer in the control of the activity of magnesium-protoporphyrin chelatase in (Gorchein, A.) 833-845
- Ribonucleic acid, messenger, detection of, for guinea-pig milk α -lactalbumin (Campbell, P. N., McIlreavy, D. & Tarin, D.) 345-347

- Ribonucleic acid, messenger, lethal effect of rifampicin in *Bacillus subtilis* 168 as a complicating factor in the assessment of the lifetime of (Coote, J. G., Wood, D. A. & Mandelstam, J.) 263-270
- Ribonucleic acid, messenger, regulation of the biosynthesis of nitrate reductase at the level of gene transcription and translation of, in *Neurospora crassa* (Sorger, G. J. & Davies, J.) 673-685
- Ribonucleic acid, ribosomal, biosynthesis of, by isolated spinach leaf chloroplasts (Hartley, M. R. & Ellis, R. J.) 249-262
- Ribonucleic acid, ribosomal, effects of infection with *Diplococcus pneumoniae* on the biosynthesis of, in rat liver (Thompson, W. L. & Wannemacher, R. W., Jr.) 79-87
- Ribonucleic acids, biosynthesis of, by isolated spinach leaf chloroplasts (Hartley, M. R. & Ellis, R. J.) 249-262
- Ribonucleic acids, effects of infection with *Diplococcus pneumoniae* on the biosynthesis of, in rat liver (Thompson, W. L. & Wannemacher, R. W., Jr.) 79-87
- Ribonucleic acids, ribosomal, comparison of the thermal stabilities and other properties of, from prokaryotes and eukaryotes (Cox, R. A., Pratt, H., Huvos, P., Higginson, B. & Hirst, W.) 775-793
- Ribosomal ribonucleic acid, see Ribonucleic acid, ribosomal
- Ribosomal subparticles, biologically active, thermal stability of ribosomes and, from prokaryotes and eukaryotes (Cox, R. A., Pratt, H., Huvos, P., Higginson, B. & Hirst, W.) 775-793
- Ribosomes, control by testosterone of the form and function of, in androgen-dependent tissues (Mainwaring, W. I. P. & Wilce, P. A.) 795-805
- Ribosomes, effect of starvation on the distribution of, between different functional states in mouse liver (Norman, M., Gamulin, S. & Clark, K.) 387-398
- Ribosomes, mitochondrial, biosynthesis of protein *in vitro* in a system containing, from *Vigna sinensis* seeds (Goswami, B. B., Chakrabarti, S., Dube, D. K. & Roy, S. C.) 815-816
- Ribosomes, thermal stability of, and biologically active ribosomal subparticles from prokaryotes and eukaryotes (Cox, R. A., Pratt, H., Huvos, P., Higginson, B. & Hirst, W.) 775-793
- Rifampicin, lethal effect of, in *Bacillus subtilis* 168 as a complicating factor in the assessment of the lifetime of messenger ribonucleic acid (Coote, J. G., Wood, D. A. & Mandelstam, J.) 263-270
- Rubber, formation of, from malonyl-coenzyme A by *Hevea brasiliensis* latex (Higgins, M. J. P. & Kekwick, R. G. O.) 295-310
- Rubixanthin, stereochemistry of hydrogen elimination in the desaturation of phytoene to, and other unsaturated carotenoids in a *Flavobacterium* sp. (McDermott, J. C. B., Britton, G. & Goodwin, T. W.) 1115-1117
- Rumen, formation of ceramide phosphorylethanolamine from phosphatidylethanolamine in the protozoan *Entodinium caudatum* from (Broad, T. E. & Dawson, R. M. C.) 659-662
- Saccharomyces carlsbergensis* I.M.I. 80178, activity of polyprenyl pyrophosphate-*p*-hydroxybenzoate poly-
- prenyltransferase in mitochondria of (Thomas, G. & Threlfall, D. R.) 811-814
- Saccharomyces carlsbergensis* N.C.Y.C. 74, absorption of protons with specific amino acids and carbohydrates by (Seaston, A., Inkson, C. & Eddy, A. A.) 1031-1043
- Saccharomyces carlsbergensis* N.C.Y.C. 745, respiration-driven translocation of protons by mitochondria with differing efficiencies of oxidative phosphorylation from *Candida utilis* N.C.Y.C. 193 and (Downie, J. A. & Garland, P. B.) 1045-1049
- Saccharomyces cerevisiae*, absorption of protons with specific amino acids and carbohydrates by (Seaston, A., Inkson, C. & Eddy, A. A.) 1031-1043
- Saccharomyces cerevisiae*, effects of altered composition of membrane lipids on the transport of cations by mitochondria from (Haslam, J. M., Spithill, T. W., Linnane, A. W. & Chappell, J. B.) 949-957
- Saccharomyces cerevisiae*, effects of physiological and genetic manipulations on the transport systems for anions of tricarboxylic acid-cycle intermediates in mitochondria from (Perkins, M., Haslam, J. M. & Linnane, A. W.) 923-934
- Saccharomyces cerevisiae*, requirement for mitochondrial biosynthesis of protein for the formation of the normal adenine nucleotide transporter in mitochondria from (Haslam, J. M., Perkins, M. & Linnane, A. W.) 935-947
- Saccharomyces fragilis* N.C.Y.C. 179, absorption of protons with specific amino acids and carbohydrates by (Seaston, A., Inkson, C. & Eddy, A. A.) 1031-1043
- Seeds, broad-bean, activity of polyprenyl pyrophosphate-*p*-hydroxybenzoate polyprenyltransferase in mitochondria of (Thomas, G. & Threlfall, D. R.) 811-814
- Seeds, *Vigna sinensis*, biosynthesis of protein *in vitro* in a system from mitochondria of (Goswami, B. B., Chakrabarti, S., Dube, D. K. & Roy, S. C.) 815-816
- Selenide, evidence for the identification of acid-volatile selenium in male rat liver as hydrogen selenide formed from, during acidification (Diplock, A. T., Caygill, C. P. J., Jeffery, E. H. & Thomas, C.) 283-293
- Selenium, acid-volatile, evidence for the identification of, in male rat liver as hydrogen selenide formed from selenide during acidification (Diplock, A. T., Caygill, C. P. J., Jeffery, E. H. & Thomas, C.) 283-293
- Serine, specific radioactivity of the precursor pool of glycine and, for estimates of the rate of protein biosynthesis in the rat (Fern, E. B. & Garlick, P. J.) 1127-1130
- L-Serine-pyruvate aminotransferase, increased activity of, under gluconeogenic conditions in rat liver (Rowse, E. V., Al-Tai, A. H., Carnie, J. A. & Rowse, K. V.) 349-351
- Serotonin, see 5-Hydroxytryptamine
- Serum albumin, see Albumin, serum
- Sialic acid, content of, in cell-surface mucosubstances from trypsin disaggregation of normal and polyoma-virus-transformed lines of baby-hamster kidney cells (Minnikin, S. M. & Allen, A.) 1123-1126
- Sialyltransferase, role of, in the regulation of the microheterogeneity of α -foetoprotein in mouse foetal plasma and amniotic fluid during development (Zimmerman, E. F. & Madappally, M. M.) 807-810
- Silver ions, evidence for the identification of acid-

- volatile selenium in rat liver as hydrogen selenide formed from selenide during acidification and its relevance to the toxicity of, in vitamin E-deficient rats (Diplock, A. T., Caygill, C. P. J., Jeffery, E. H. & Thomas, C.) 283-293
- Skeletal muscle, *see* Muscle, skeletal
- Slime mould (*Dictyostelium discoideum*), changes in the concentration of adenosine 3':5'-cyclic monophosphate and the activity of phosphodiesterase during axenic growth and differentiation of cells of (Malkinson, A. M. & Ashworth, J. M.) 311-319
- Slime mould (*Physarum polycephalum*), biosynthesis of cytochrome c by (Colleran, E. M. & Jones, O. T. G.) 89-96
- Slime mould (*Physarum polycephaleum*), properties of the electron-transport system of mitochondria from (Barnes, R., Colleran, E. M. & Jones, O. T. G.) 745-751
- Small intestine, *see* Intestine, small
- Sodium pump, increased activity of, in rat liver produced by the chronic administration of ethanol (Bernstein, J., Videla, J. & Israel, Y.) 515-521
- Somatotrophin, *see* Growth hormone
- Spinacea oleracea*, *see* Spinach
- Spinach (*Spinacea oleracea*) leaves activity of adenosine 5'-sulphatophosphate kinase in chloroplasts isolated from (Burnell, J. N. & Anderson, J. W.) 565-579
- Spinach (*Spinacea oleracea*), leaves, biosynthesis of ribonucleic acids in isolated chloroplasts from (Hartley, M. R. & Ellis, R. J.) 249-262
- Spinach (*Spinacea oleracea*) leaves, site of inhibition by 2-amino-1,1,3-tricyanopropene of photosynthetic oxygen evolution by chloroplasts isolated from (Burden, E. M. & Horton, A. A.) 663-665
- Spinal cord, chick-embryo, uptake of 4-aminobutyrate by organotypic cultures of (Tunnicliff, G., Cho, Y. D., Blackwell, N., Martin, R. O. & Wood, J. D.) 27-32
- Sporulation, de-repression of exo- β -N-acetylglucosaminidase during gluconeogenesis and the initial stages of, in *Bacillus subtilis* B (Brewer, S. J. & Berkeley, R. C. W.) 271-281
- Starvation, changes during a cycle of, and re-feeding in the biosynthesis and degradation of phosphoenol-pyruvate carboxylase in rat liver and epididymal adipose tissue (Hopgood, M. F., Ballard, F. J., Reshef, L. & Hanson, R. W.) 445-453
- Starvation, effect of, on the distribution of ribosomes between different functional states in mouse liver (Norman, M., Gamulin, S. & Clark, K.) 387-398
- Starvation, effect of, on the relationship between the concentrations of ketone bodies and non-esterified fatty acids in rat plasma and skeletal muscle (Owen, O. E., Markus, H., Sarshik, S. & Mozzoli, M.) 499-506
- Steroidogenesis by mouse Leydig-cell-tumour mitochondria (Moyle, W. R., Jungas, R. L. & Greep, R. O.) 415-424
- Steroidogenesis, effects of luteinizing hormone and adenosine 3':5'-cyclic monophosphate on, in mouse Leydig-cell tumour (Moyle, W. R., Jungas, R. L. & Greep, R. O.) 407-413
- Steroid-receptor proteins, use of deoxyribonucleic acid-cellulose chromatography and isoelectric focusing for the characterization and partial purification of complexes between steroids and, from various mammalian tissues (Mainwaring, W. I. P. & Irving, R.) 113-127
- Steroids, androgenic, control by testosterone of the form and function of ribosomes in tissues dependent on (Mainwaring, W. I. P. & Wilce, P. A.) 795-805
- Steroids, androgenic, evidence that adenosine 3':5'-cyclic monophosphate and, are not interchangeable in their effects on the function and morphology of rat prostate gland (Mangan, F. R., Pegg, A. E. & Mainwaring, W. I. P.) 129-142
- Steroids, mineralocorticoid, early effects of, on the specific acetylation of histone F2a1 in rat kidney (Libby, P. R.) 907-912
- Steroids, use of deoxyribonucleic acid-cellulose chromatography and isoelectric focusing for the characterization and partial purification of complexes between, and steroid-receptor proteins from various mammalian tissues (Mainwaring, W. I. P. & Irving, R.) 113-127
- Sterols, inhibition by phenyl and phenolic compounds of the biosynthesis of, by rat liver preparations (Ranganathan, S. & Ramasarma, T.) 737-743
- Sulphatases, lysosomal, problems associated with the assay of the activities of, of rat liver and other tissues (Worwood, M., Dodgson, K. S., Hook, G. E. R. & Rose, F. A.) 183-190
- Sulphatases, lysosomal, relative distribution of, in rat liver parenchymal and other cells (Hook, G. E. R., Dodgson, K. S., Rose, F. A. & Worwood, M.) 191-195
- Sulphate, degradation of thiophen-2-carboxylate to 2-oxoglutarate and, by an unidentified micro-organism (Cripps, R. E.) 353-366
- Sulphate, inorganic, degradation of intravenously injected chondroitin sulphate to, in the rat (Wood, K. M., Wusteman, F. S. & Curtis, C. G.) 1009-1013
- Sulphate, role of adenosine 5'-sulphatophosphate kinase in the biosynthesis of cyst(e)ine from, in isolated spinach leaf chloroplasts (Burnell, J. N. & Anderson, J. W.) 565-579
- Supernatant fraction, *see* Cytosol
- Taurine, production of, in isolated rat liver mitochondria (Ferdinand, W., Bartley, W. & Broomhead, V.) 431-436
- Temperature, ambient, effect of, on the substrate cycling of fructose 6-phosphate through reactions catalysed by fructose diphosphatase and phosphofructokinase in resting flight muscle of the bumble-bee *Bombus affinis* *in vivo* (Clark, M. G., Bloxham, D. P., Holland, P. C. & Lardy, H. A.) 589-597
- Temperature, effect of, on the biosynthesis of insulin by islet tissue from the brown bullhead (Moule, M. L. & Yip, C. C.) 753-761
- Testosterone, control by, of the form and function of ribosomes in androgen-dependent tissues (Mainwaring, W. I. P. & Wilce, P. A.) 795-805
- Testosterone, evidence that adenosine 3':5'-cyclic monophosphate and, its metabolites are not interchangeable in their effects on the function and morphology of rat prostate gland (Mangan, F. R., Pegg, A. E. & Mainwaring, W. I. P.) 129-142
- Thiophen-2-carboxylate, metabolism of, by an unidentified micro-organism (Cripps, R. E.) 353-366

- Thyroxine, comparison between the effects in rat liver produced by the chronic administration of ethanol and by (Israel, Y., Videla, L., Macdonald, A. & Bernstein, J.) 523-529
- Tracer kinetics, normalization in the fitting of data by iterative methods and its application to (Ottaway, J. H.) 729-736
- Transcription, gene, regulation of the biosynthesis of nitrate reductase at the level of, and translation of messenger ribonucleic acid in *Neurospora crassa* (Sorger, G. J. & Davies, J.) 673-685
- Translation, regulation of the biosynthesis of nitrate reductase at the level of gene transcription and, of messenger ribonucleic acid in *Neurospora crassa* (Sorger, G. J. & Davies, J.) 673-685
- Tricarboxylic acid cycle, effects of physiological and genetic manipulations on the transport of anions of intermediates of, in *Saccharomyces cerevisiae* mitochondria (Perkins, M., Haslam, J. M. & Linnane, A. W.) 923-934
- Tricarboxylic acid cycle, intracellular localization of enzymes involved in gluconeogenesis, the glyoxyllic acid cycle and, in *Astasia longa* and *Euglena gracilis* (Bégin-Heick, N.) 607-616
- Tricarboxylic acids, inhibition by fluorocitrate of aconitate hydratase activity and the carrier for the transport of, in isolated rat liver mitochondria (Brand, M. D., Evans, S. M., Mendes-Mourão, J. & Chappell, J. B.) 217-224
- Triglyceride, accumulation of, in rat liver after subtotal hepatectomy (Mangiapane, E. H., Lloyd-Davies, K. A. & Brindley, D. N.) 103-112
- 3,3',5'-Tri-iodothyronine, effect of previous treatment of the animals with, on the biosynthesis of protein by heavy, light and fluffy mitochondrial fractions obtained from rat liver (Satav, J. G., Rajwade, M. S., Katyare, S. S., Netrawali, M. S., Fatterpaker, P. & Sreenivasan, A.) 687-695
- Tryptophan, effects of a dietary excess of leucine on the activities of enzymes of the metabolic pathway from, to nicotinate in rat liver and kidney (Ghafoorunissa & Narasinga Rao, B. S.) 425-430
- Tryptophan, incorporation of, into ergotamine by *Claviceps purpurea* (Fr.) Tul. (Bassett, R. A., Chain, E. B. & Corbett, K.) 1-10
- Tryptophan, incorporation of, into glucagon in isolated perfused rat pancreas (O'Connor, K. J., Gay, A. & Lazarus, N. R.) 473-480
- Tumour cells, ascites, mouse, absorption of amino acids by, depleted of both endogenous amino acids and adenosine triphosphate (Morville, M., Reid, M. & Eddy, A. A.) 11-26
- Tumour, Leydig-cell, mouse, effects of luteinizing hormone and adenosine 3':5'-cyclic monophosphate on the metabolism of free and esterified cholesterol in (Moyle, W. R., Jungas, R. L. & Greep, R. O.) 407-413
- Tumour, Leydig-cell, mouse, metabolism of free and esterified cholesterol by mitochondria from (Moyle, W. R., Jungas, R. L. & Greep, R. O.) 415-424
- Tyrosine, effect of light on the activities of enzymes involved in the pathway for the biosynthesis of hispidin from, in *Polyporus hispidus* (Nambudiri, A. M. D., Vance, C. P. & Towers, G. H. N.) 891-897
- L-Tyrosine O-sulphate, determination and significance of, and its deaminated metabolites in normal human and mouse urine (Hext, P. M., Thomas, S., Rose, F. A. & Dodgson, K. S.) 629-635
- Ubiquinone, importance of, in the generation of hydrogen peroxide by pigeon heart mitochondria (Boveris, A. & Chance, B.) 707-716
- Uracil, regulation of the uptake of, and other nitrogen-containing compounds by *Candida utilis* N.C.Y.C. 321 (Jones, R. W. & Wild, D. G.) 617-627
- Uridine, incorporation of, into ribonucleic acids by isolated spinach leaf chloroplasts (Hartley, M. R. & Ellis, R. J.) 249-262
- Urine, determination and significance of L-tyrosine O-sulphate and its deaminated metabolites in, of the normal human and mouse (Hext, P. M., Thomas, S., Rose, F. A. & Dodgson, K. S.) 629-635
- Urine, excretion of degradation products of intravenously injected chondroitin 4-sulphate in, in the rat (Wood, K. M., Wusteman, F. S. & Curtis, C. G.) 1009-1013
- Urine, identification of mercapturic acids as metabolites of allyl alcohol, allyl esters and acrolein in, in the rat (Kaye, C. M.) 1093-1101
- Urine, identification of metabolites of 2-acetamido-4-chloromethylthiazole in, in the rat (Chatfield, D. H. & Hunter, W. H.) 879-884
- Urine, identification of metabolites of 2-acetamido-thiazole, 2-acetamido-4-methylthiazole and 2-acetamido-4-phenylthiazole in, in the rat (Chatfield, D. H. & Hunter, W. H.) 869-878
- Urine, increased excretion of 5-aminolaevulinate and decreased excretion of porphobilinogen in, of the iron-deficient anaemic rat (Sharma, D. C.) 821-823
- Uterus, guinea-pig, use of deoxyribonucleic acid-cellulose chromatography and isoelectric focusing for the characterization and partial purification of the 8S oestrogen-receptor complex from (Mainwaring, W. I. P. & Irving, R.) 113-127
- Uterus, rat, use of deoxyribonucleic acid-cellulose chromatography and isoelectric focusing for the characterization and partial purification of the 7S progesterone-receptor complex from (Mainwaring, W. I. P. & Irving, R.) 113-127
- Valine, incorporation of, into protein *in vitro* in a system from mitochondria of *Vigna sinensis* seeds (Goswami, B. B., Chakrabarti, S., Dube, D. K. & Roy, S. C.) 815-816
- Vicia faba*, see Bean, broad
- Vigna sinensis*, seeds, biosynthesis of protein *in vitro* in a system from mitochondria of (Goswami, B. B., Chakrabarti, S., Dube, D. K. & Roy, S. C.) 815-816
- Virus, polyoma, see Polyoma virus
- Vitamin A alcohol, see Retinol
- Vitamin B₆, effects of deficiency of, and of DL-p-chlorophenylalanine administration on 5-hydroxytryptamine and noradrenaline concentrations in brain and 5-hydroxytryptamine concentration in blood of the rat (Bhagavan, H. N. & Coursin, D. B.) 763-767
- Vitamin D₃, see Cholecalciferol
- Vitamin E, evidence for the identification of acid-volatile selenium in rat liver as hydrogen selenide formed from selenide during acidification and its relevance to the toxicity of silver ions in rats deficient in (Diplock, A. T., Caygill, C. P. J., Jeffery, E. H. & Thomas, C.) 283-293

Xenopus laevis, thermal stability of biologically active ribosomal subparticles from oocytes of (Cox, R. A., Pratt, H., Huvos, P., Higginson, B. & Hirst, W.) 775-793

Xylitol, metabolism of, in isolated perfused rat liver (Woods, H. F. & Krebs, H. A.) 437-443

Yeast (*Candida utilis* N.C.Y.C. 193), properties of an antimycin A- and cyanide-resistant variant arising during growth of, in copper-deficient medium (Downie, J. A. & Garland, P. B.) 1051-1061

Yeast (*Candida utilis* N.C.Y.C. 321), regulation of the uptake of purines, pyrimidines and amino acids by (Jones, R. W. & Wild, D. G.) 617-627

Yeast (*Saccharomyces carlsbergensis* I.M.I. 80178), activity of polyprenyl pyrophosphate-*p*-hydroxybenzoate polyprenyltransferase in mitochondria of (Thomas, G. & Threlfall, D. R.) 811-814

Yeast (*Saccharomyces cerevisiae*), effects of altered composition of membrane lipids on the transport of cations by mitochondria from (Haslam, J. M., Spithill, T. W., Linnane, A. W. & Chappell, J. B.) 949-957

Yeast (*Saccharomyces cerevisiae*), effects of physiological and genetic manipulations on the transport systems for anions of tricarboxylic acid-cycle intermediates in mitochondria from (Perkins, M., Haslam, J. M. & Linnane, A. W.) 923-934

Yeast (*Saccharomyces cerevisiae*), requirement for mitochondrial biosynthesis of protein for the formation of the normal adenine nucleotide transporter in mitochondria from (Haslam, J. M., Perkins, M. & Linnane, A. W.) 935-947

Yeasts (*Candida utilis* N.C.Y.C. 193 and *Saccharomyces carlsbergensis* N.C.Y.C. 745), respiration-driven translocation of protons by mitochondria with differing efficiencies of oxidative phosphorylation from (Downie, J. A. & Garland, P. B.) 1045-1049

Yeasts (*Saccharomyces* spp.), absorption of protons with specific amino acids and carbohydrates by (Seaston, A., Inkson, C. & Eddy, A. A.) 1031-1043

Zeaxanthin, stereochemistry of hydrogen elimination in the desaturation of phytoene to, and other unsaturated carotenoids in a *Flavobacterium* sp. (McDermott, J. C. B., Britton, G. & Goodwin, T. W.) 1115-1117

The BIOCHEMICAL JOURNAL

Cellular Aspects

Volume 134

1973

EDITORIAL BOARD

Chairman
D. G. Walker

Deputy Chairmen
C. A. Pasternak
H. B. F. Dixon
K. M. Jones
J. E. Cremer

Editorial Secretary
J. D. Killip

Assistant Editorial Secretary
E. N. Maltby

J. W. Bradbeer
R. B. Cain
M. Cannon
R. A. Cox
R. R. Dils
J. T. Dingle
G. H. Dixon
D. C. Ellwood
P. B. Garland
N. M. Green*
J. J. Holbrook
M. R. Hollaway
R. C. Hughes
J. D. Judah
A. E. Kellie
U. E. Loening
J. A. Lucy
R. D. Marshall

P. A. Mayes
K. Murray
A. C. T. North*
R. E. Offord
D. V. Parke
A. E. Pegg
R. N. Perham
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

Overseas Advisory Panel

F. J. Ballard (Australia), S. Bergström (Sweden), B. Chance (U.S.A.), J.-P. Changeux (France), P. W. Choppin (U.S.A.), W. H. Elliott (Australia), D. Garfinkel (U.S.A.), F. W. E. Gibson (Australia), A. A. Hadjolov (Bulgaria), H. G. Hers (Belgium), W. D. Stein (Israel), H. G. Wittmann (Germany), I. G. Wool (U.S.A.)



London: The Biochemical Society © 1973

THE BIOCHEMICAL SOCIETY, 7 WARWICK COURT, LONDON WC1R 5DP

*Printed in Great Britain by William Clowes & Sons Limited,
London, Colchester and Beccles*