

**Copying.** This journal is registered with the Copyright Clearance Center, 27 Congress Street, Salem, Mass. 01970. Organizations in the USA who are also registered with C.C.C. may therefore copy material (beyond the limits permitted by sections 107 and 108 of the US copyright law) subject to payment to C.C.C. of the per-copy fee of \$5.00. This consent does not extend to multiple copying for promotional or commercial purposes. Code 0007-1145/89 \$5.00 + .00.

*ISI Tear Sheet Service*, 3501 Market Street, Philadelphia, Pennsylvania 19104, USA, is authorized to supply single copies of separate articles for private use only.

For all other use, permission should be sought from Cambridge or the American Branch of Cambridge University Press.

**The Proceedings of the Nutrition Society**, published by the Cambridge University Press, in part record meetings of the Symposium type, at which experts in a particular field are invited by Council to make contributions on specific parts of it and at which general discussion follows these invited contributions. The contributions will be published *in extenso*; such summaries of the ensuing discussions as circumstances warrant may also be published. The Society also holds scientific meetings at which papers are communicated by members and others on original work carried out by them. It is proposed at present to publish summaries of the papers read at each meeting, each communication being recorded in the Society's *Proceedings* by means of an abstract not exceeding in length 400 words or the equivalent space in print. The *Proceedings* are published three times a year.

The subscription to the *Proceedings* is £75.00 net (US \$165.00 in USA and Canada). Single issues are £27.00 (US \$63.00 in the USA and Canada) each; postage extra.

#### INDEX OF AUTHORS

Adeola, O.	453	Girard, C. L.	595	Neale, R. J.	573
Åman, P.	673, 689	Godfried, S. L.	607		
Aubrey Jones, D. A.	583	Goto, S.	531	Oldigs, H.-D.	559
Auestad, N.	495	Graham, H.	673, 689		
		Gurr, M. I.	429	Parekh, L. J.	601
Baill, R. O.	453			Patterson, B. E.	475
Bates, C. J.	475	Hanis, T.	519		
Bauchart, D.	725	Höhn, A.	559	Rajalakshmi, R.	601
Baumont, R.	699	Horii, M.	545	Roy, G. L.	595
Beardsworth, L. J.	715				
Beardsworth, P. M.	715	Ide, T.	545	Sachova, J.	519
Bender, D. A.	619, 629	Ikeda, I.	531	Saroka, J. M.	607
Bergstrom, J. D.	495			Schaub, J.	559
Bisdec, J. T.	641	James, W. P. T.	641	Schulz-Leff, G.	559
		Jansen, E. H. J. M.	485	Scott, J.	663
Care, A. D.	715	Johcki, N.	741	Scott, P. H.	663
Chan, A. Y. S.	467	Johnson, C. L.	583	Shears, G. E.	573
Chan, E. L. P.	467	Joles, J. A.	485	Sievers, E.	559
Choi, Y.-S.	531			Sin, L. Y.	467
Combs, G. F. Jr	607	King, N. S.	467	Singh, A.	619
		Klir, P.	519	Sugano, M.	531
Deyl, Z.	519	Koomans, H. A.	485	Swaminathan, R.	467
Dillingham, L. A.	607	Korsak, R. A.	495		
Dörner, K.	559	Kortlandt, W.	485	Takahashi, J.	741
Dziadzka, S.	559			Theale, D.	651
		Laan, C. A.	485		
Edmond, J.	495	Ledward, D. A.	573	Wharton, B. A.	663
Emery, P. W.	437, 445	Legay-Carmier, F.	725	Willekes-Koolschijn, N.	485
		Löwgren, W.	673, 689	Williams, C. M.	651
Fujita, H.	741			Woodward, C. J. H.	437, 445
Fun, N. S.	467	McBride, B. W.	453		
		Malbert, C. H.	699	Young, L. G.	453
Garlick, P. J.	641	Malhotra, A.	663		
Gee, H.	663	Matte, J. J.	595	Zalani, S.	601
Ghartey-Sam, K.	619	Maunder, K.	651	Zidek, V.	519

# The British Journal of Nutrition

Volume 61 No. 3 January 1989

## CONTENTS

EDITORIAL. GURR M. I.	429-431
SUBJECT MATTER IN BRIEF	433-436
ENERGY METABOLISM	
WOODWARD CHRISTOPHER J. H. & EMERY PETER W. Energy balance in rats given chronic hormone treatment. 1. Effects of long-acting insulin	437-444
WOODWARD CHRISTOPHER J. H. & EMERY PETER W. Energy balance in rats given chronic hormone treatment. 2. Effects of corticosterone	445-452
ADEOLA O., YOUNG L. G., MCBRIDE B. W. & BALL R. O. In vitro Na <sup>+</sup> ,K <sup>+</sup> -ATPase (EC 3.6.1.3)-dependent respiration and protein synthesis in skeletal muscle of pigs fed at three dietary protein levels	453-465
SWAMINATHAN R., CHAN ELLEN L. P., SIN LIU YUET, KING NG SIU, FUN NG SUI & CHAN AMY Y. S. The effect of ouabain on metabolic rate in guinea-pigs: estimation of energy cost of sodium pump activity	467-473
PATTERSON B. E. & BATES C. J. Riboflavin deficiency, metabolic rate and brown adipose tissue function in sucking and weanling rats	475-483
PROTEIN, GROWTH AND DEVELOPMENT	
JOLES J. A., JANSEN E. H. J. M., LAAN C. A., WILLEKES-KOOLSCHIJN N., KORTLANDT W. & KOOMANS H. A. Plasma proteins in growing analbuminaemic rats fed on a diet of low-protein content	485-494
AUESTAD NANCY, KORSAK ROSE A., BERGSTROM JAMES D. & EDMOND JOHN. Milk-substitutes comparable to rat's milk; their preparation, composition and impact on development and metabolism in the artificially reared rat	495-518
LIPID METABOLISM	
HANIS T., ZIDEK V., SACHOVA J., KLIR P. & DEYL Z. Effects of dietary <i>trans</i> -fatty acids on reproductive performance of Wistar rats	519-529
CHOI YONG-SOON, GOTO SHOICHIRO, IKEDA IKUO & SUGANO MICHIIHIRO. Interaction of dietary protein, cholesterol and age on lipid metabolism of the rat	531-543
IDE T. & HORII M. Predominant conjugation with glycine of biliary and lumen bile acids in rats fed on pectin	545-557
MINERALS	
DÖRNER KLAUS, DZIADZKA STEFAN, HÖHN ANDREAS, SIEVERS ERIKA, OLDIGS HANS-DIETER, SCHULZ-LELL GISELA & SCHAUB JÜRGEN. Longitudinal manganese and copper balances in young infants and preterm infants fed on breast-milk and adapted cow's milk formulas	559-572
SHEARS GILLIAN E., NEALE R. J. & LEDWARD D. A. Effects of dietary iron deficiency and tungsten supplementation on <sup>59</sup> Fe absorption and gastric retention from <sup>59</sup> Fe compounds in rats	573-581
JOHNSON C. L. & AUBREY JONES D. A. Effect of change of diet on the mineral composition of rumen fluid, on magnesium metabolism and on water balance in sheep	583-594

*continued on page facing inside back cover*

© The Nutrition Society 1989

*For Index of Authors see inside back cover*

CAMBRIDGE UNIVERSITY PRESS

The Pitt Building, Trumpington Street, Cambridge CB2 1RP

32 East 57th Street, New York, NY 10022, USA

10 Stamford Road, Oakleigh, Melbourne 3166, Australia

*Printed in Great Britain by the University Press, Cambridge*