

Australian Journal of Biological Sciences

Volume 39

Melbourne 1986

Australian Journal of Biological Sciences

A journal for the publication of papers in biochemistry, molecular and cell biology, microbiology and genetics, and also in reproductive biology, endocrinology and physiology.

This journal is one of the Australian Journals of Scientific Research published by the Commonwealth Scientific and Industrial Research Organization with the cooperation of the Australian Academy of Science. Editorial policy for the journal series is developed by a Board appointed jointly by CSIRO and the Australian Academy of Science.

Advisory Committee

Acceptance of papers for this journal is in the hands of an Advisory Committee appointed after consultation with the Board. All papers are refereed externally. Committee members advise editors on the selection of referees and adjudicate in the case of conflicting or adverse reports.

Chairman D. M. de Kretser, Monash University

Members J. K. Findlay, Prince Henry's Hospital, Melbourne
J. M. Graves, La Trobe University
G. W. Grigg, Division of Molecular Biology, CSIRO
I. H. Holmes, University of Melbourne
E. O. P. Thompson, University of New South Wales
D. A. Titchen, University of Sydney
B. J. Walby, Editor-in-Chief, CSIRO

Editor

L. A. Bennett

Issued four times a year

Annual subscription
\$A100 (surface)
\$A115 (airmail)
\$A35 (microfiche)

ISSN 0004-9417

The Notice to Authors is published in the first issue of each volume. Copies are available on request.

All inquiries and manuscripts should be forwarded to:
The Editor-in-Chief
Australian Journal of Biological Sciences
314 Albert Street
East Melbourne, Victoria 3002

© CSIRO Australia 1986. Printed by CSIRO, Melbourne

Permission to photocopy items from this journal is granted by CSIRO to libraries and other users registered with the Copyright Clearance Center (CCC), provided that the stated fee for each copy is paid directly to the CCC, 27 Congress Street, Salem, MA 01970, U.S.A. Special requests should be addressed to the Editor-in-Chief, CSIRO, 314 Albert Street, East Melbourne, Victoria 3002.

Australian Journal of Biological Sciences

Contents Volume 39 Number 1 1986

Editorial Report for 1985 xi

Biochemistry, Molecular Biology, Genetics

Metabolism of fluoroacetate in the skink (*Tiliqua rugosa*) and the rat (*Rattus norvegicus*). L. E. Twigg, R. J. Mead and D. R. King 1

Biological half-life, organ distribution and excretion of ¹²⁵I-labelled toxic peptide from the blue-green alga *Microcystis aeruginosa*. Ian R. Falconer, Tom Buckley and Maria T. C. Runnegar 17

Use of neomycin for preferential selection against *Rhizobium trifolii* in symbiosis with white clover (*Trifolium repens*). Brant J. Bassam and Peter M. Gresshoff 23

Biochemical characterization for identification of ovine sarcosporidia. G. E. Ford 31

Lack of correlation between *Gpd* expression and X chromosome late replication in cultured fibroblasts of the kangaroo *Macropus robustus*. P. G. Johnston and E. S. Robinson 37

Allozyme genotypes of *Drosophila buzzatii*: feeding and oviposition preferences for microbial species, and habitat selection. J. S. F. Barker, D. C. Vacek, P. D. East and W. T. Starmer 47

Associations between alcohol tolerance and the quantity of alcohol dehydrogenase in *Drosophila melanogaster* isolated from a winery population. L. H. Schmitt, S. W. McKechnie and J. A. McKenzie 59

Adaptations of *Drosophila* and yeasts: their interactions with the volatile 2-propanol in the cactus-microorganism-*Drosophila* model system. William T. Starmer, J. S. F. Barker, Herman J. Phaff and James C. Fogleman 69

Physiology, Reproductive Biology

Effect of hypoxia on the initiation of secondary wool follicles in the fetus. R. Jacobs, J. Falconer, J. S. Robinson and M. E. D. Webster 79

Effects of mild heat exposure and suppression of prolactin secretion on gastro-intestinal tract function and temperature regulation in sheep. G. J. Faichney and T. N. Barry 85

Use of a styrene-maleic anhydride copolymer as an adjuvant with testosterone-serum albumin immunogens and its application to increasing ovulation rate in the ewe. M. S. F. Wong, R. M. Hoskinson, R. I. Cox, D. G. Hawthorne, D. H. Solomon, N. T. Hinks and J. B. Donnelly 99

Volume 38, Number 4, was published on 2 January 1986

Australian Journal of Biological Sciences

Contents Volume 39 Number 2 1986

Biochemistry, Cell Biology, Genetics

Genetic variation of the dimeric haemoglobin of the bivalve mollusc *Anadara trapezia*. R. G. Mann, W. K. Fisher, A. T. Gilbert and E. O. P. Thompson 109

Solubilization of native actin monomers from human erythrocyte membranes. Leann Tilley, Margaret Dwyer and G. B. Ralston 117

Pigmented spots in the wool-bearing skin of white Merino sheep induced by ultraviolet light. J. W. Forrest and M. R. Fleet 125

Effects of the sheep-chewing louse (*Damalinia ovis*) on the epidermis of the Australian Merino. A. G. Britt, C. L. Cotton, I. H. Pitman and A. N. Sinclair 137

Fluctuating asymmetry: a technique for measuring developmental stress caused by inbreeding. G. M. Clarke, G. W. Brand and M. J. Whitten 145

Effect of selection on oviposition site preference in *Drosophila melanogaster*. Gladys Ruiz Dubreuil and Eduardo del Solar 155

Reproductive Biology, Physiology

Transfer of magnesium across the perfused choroid plexus of sheep. T. F. Allsop 161

Changes in prolactin in peripheral plasma during lactation in the brushtail possum *Trichosurus vulpecula*. L. A. Hinds and P. A. Janssens 171

Plasma prolactin concentrations throughout lactation in the eastern quoll, *Dasyurus viverrinus* (Marsupialia : Dasyuridae). L. A. Hinds and J. C. Merchant 179

Antifertility activity and toxicity of α -chlorohydrin aromatic ketal analogues in male rats. P. D. C. Brown-Woodman, I. G. White and D. D. Ridley 187

Goding Lecture: The movement of fluids and substances in the testis. B. P. Setchell 193

Volume 39, Number 1, was published on 30 April 1986

Australian Journal of Biological Sciences

Contents Volume 39 Number 3 1986

Biochemistry, Cell Biology, Microbiology, Genetics

Effects of methoxinine, an analogue of methionine, on the growth and morphology of wool fibres. *P. J. Reis, D. A. Tunks, R. D. G. Rigby, S. G. Munro and R. W. Edols* 209

Isolation of a new rhabdovirus in Australia related to Tibrogargan virus. *D. H. Cybinski and G. P. Gard* 225

Oxygen and morphological changes in *Allomyces macrogynus*. *Jean Youatt* 233

Hyphal emergence and outgrowth of *Allomyces macrogynus* in aerated cultures. *Ann Cleary, Jean Youatt and T. P. O'Brien* 241

Genetic structure of natural populations of wild sunflowers (*Helianthus annuus* L.) in Australia. *P. J. Dry and J. J. Burdon* 255

Physiology, Reproductive Biology,

Development of a sheep hind-limb muscle preparation for metabolic studies. *E. Teleni and E. F. Annison* 271

Production of steroids and release of prostaglandins by spherical pig blastocysts *in vitro*. *B. A. Stone, R. F. Seamark, R. W. Kelly, and S. Deam* 283

Pattern of loss of spermatozoa from the vagina of the ewe. *A. J. Tilbrook and D. T. Pearce* 295

Time required for spermatozoa to remain in the vagina of the ewe to ensure conception. *A. J. Tilbrook and D. T. Pearce* 305

Effect of suppressing prolactin in the mouse on liveweight, food intake and ovulation rate. *F. D. Brien* 311

Volume 39, Number 2, was published on 4 August 1986

Australian Journal of Biological Sciences

Contents Volume 39 Number 4 1986

Biochemistry, Molecular and Cell Biology, Microbiology, Genetics

Osmotic pressure measurements on insulin: anomalous results indicate that the monomer is preferentially adsorbed. *Peter D. Jeffrey* 319

Mitotic activity in cells of the wool follicle bulb. *P. I. Hynd, A. C. Schlink, P. M. Phillips and D. R. Scobie* 329

Monoclonal antibodies to a subfraction of Merino wool high-tyrosine proteins. *D. R. Hewish and P. W. French* 341

Abiotic transmission of southern bean mosaic virus in soil. *D. S. Teakle* 353

Bacteria associated with some *Dacus* species (Diptera : Tephritidae) and their host fruit in Queensland. *A. C. Lloyd, R. A. I. Drew, D. S. Teakle and A. C. Hayward* 361

Population genetics of *Echium plantagineum* L.—target weed for biological control. *J. J. Burdon and A. H. D. Brown* 369

Physiology, Reproductive Biology

Metabolism of valine and the exchange of amino acids across the hind-limb muscles of fed and starved sheep. *E. Teleni, E. F. Annison and D. B. Lindsay* 379

Inhibition of fructolytic enzymes in boar spermatozoa by (S)- α -chlorohydrin and 1-chloro-3-hydroxypropanone. *A. R. Jones, W. A. Bubb, S. R. Murdoch and D. A. Stevenson* 395

Luteolysis and thrombus formation in ovaries of immature superstimulated golden hamsters. *K. Spaniel-Borowski and Ch. Heiss* 407

Response of pre-pubertally castrated rams and ewes to artificial photoperiod—changes in plasma LH and prolactin. *A. L. Poulton* 417

Prolactin response in Border-Leicester \times Merino ewes to administration of melatonin, melatonin analogues, a melatonin metabolite and 6-methoxybenzoxazolinone. *D. J. Kennaway, P. Royles, E. A. Dunstan and H. M. Hugel* 427

Corrigendum 434

Index to Volume 39 435

Volume 39, Number 3, was published on 11 November 1986