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Contents Volume 44 Number 3 1993

- Quantitative animal nutrition and metabolism: a general review.
D. G. Armstrong 333
- Ruminant nutrition: reminiscences of Australian research.
Ian W. McDonald 347
- Quantitative ruminant nutrition—a green science. *R. A. Leng* 363
- Nitrogen metabolism of the ruminant liver. *J. G. van der Walt* 381
- The role of wheat non-starch polysaccharides in broiler nutrition.
Geoffrey Annison 405
- Nutrient balance in the diet of grazing dairy cows. *R. C. Kellaway,
R. J. Tassell, E. Havilah, N. Sriskandarajah and A. Andrews* 423
- Carbohydrate and lipid oxidation during exercise. *D. W. Pethick* 431
- Catabolism and synthesis of amino acids in skeletal muscle: their significance in
monogastric mammals and ruminants. *E. Teleni* 443
- Epidermal growth factor and fluid balance; a review. *C. B. Gow and
G. P. M. Moore* 463
- Hormonal regulation of hepatic glycine oxidation. *Markandeya Jois and
John T. Brosnan* 473
- Making the sums add up—the importance of quantification in nutrition.
D. B. Lindsay 479
- Dietary lipids for ruminants: protection, utilization and effects on remodelling
of skeletal muscle phospholipids. *T. W. Scott and J. R. Ashes* 495
- The development of ideas on the role of glucose in regulating milk
secretion. *T. B. Mepham* 509
- Regulation of nutrient partitioning in growth and lactation.
R. Bickerstaffe 523
- Role of computer simulation in the application of knowledge to animal
industries. *J. L. Black, G. T. Davies and J. F. Fleming* 541

Continued over leaf

The development of oyster diets. *John A. Nell* 557

Modification of animal growth with growth hormone and insulin-like growth factors. *F. John Ballard, Geoffrey L. Francis, Paul E. Walton, Spencer E. Knowles, Phillip C. Owens, Leanna C. Read and Frank M. Tomas* 567

Increasing annual growth rates of cattle by reducing maintenance energy requirements. *R. A. Hunter, M. N. Sillence, C. Gazzola and W. G. Spiers* 579

Whither animal nutrition. *E. F. Annison* 597

Author Index

Andrews, A. 423
Annison E. F. 597
Annison, G. 405
Armstrong, D. G. 333
Ashes, J. R. 495
Ballard, F. J. 567
Black, J. L. 541
Bickerstaffe, R. 523
Brosnan, J. T. 473
Davies, G. T. 541
Fleming, J. F. 541
Francis, G. L. 567
Gazzola, C. 579
Gow, C. B. 463
Havilah, E. 423
Hunter, R. A. 579
Jois, M. 473
Kellaway, R. C. 423
Knowles, S. E. 567

Leng, R. A. 363
Lindsay, D. B. 479
McDonald, I. W. 347
Mepham, T. B. 509
Moore, G. P. M. 463
Nell, J. A. 557
Owens, P. C. 567
Pethick, D. W. 431
Read, L. C. 567
Scott, T. W. 495
Sillence, M. N. 579
Spiers, W. G. 579
Sriskandarajah, N. 423
Tassell, R. J. 423
Teleni, E. 443
Tomas, F. M. 567
van der Walt, J. G. 381
Walton, P. E. 567

Australian Bibliography of Agriculture

Beginning with the issue of May 1975 (Volume 26, Number 3), every article published in the *Australian Journal of Agricultural Research* has been indexed and its bibliographic details entered in a computerised database entitled the *Australian Bibliography of Agriculture*. The *Bibliography* also contains details of many other Australian publications in the broad field of primary production and processing, with emphasis on those emanating from CSIRO and State Departments. The database is made available online through CSIRO AUSTRALIS, and searches may be performed on a wide range of criteria including author names, article titles, subject headings and classification codes. For further information contact CSIRO AUSTRALIS, (03) 418 7307, or P.O. Box 89, East Melbourne, Victoria 3002, Australia.

Guest Editorial

This special issue of the Australian Journal of Agricultural Research contains papers presented at a Festschrift Symposium in July 1992 at the University of Sydney to honour Professor E. F. Annison and Professor D. B. Lindsay. An overview of their distinguished careers is given in the accompanying biographical sketches.

The idea for this meeting came from a number of colleagues of Frank Annison and Derek Lindsay who felt that it was timely to recognise the important contribution that they had both made to animal nutrition and biochemistry, especially that of the ruminant. Anyone reviewing the literature in this wide field will encounter the names of Annison and Lindsay with great frequency. Their research findings have been extensively applied in the practical feeding of animals for meat, milk and wool production. Their influence can also be seen in the number of their former PhD students who can be found in research institutions and universities throughout the world.

The Committee which devised the programme for the Festschrift Symposium agreed that invited papers should be given by those who had had a close connection with Frank Annison and Derek Lindsay, either as former students or long-term collaborators. The final programme covered most aspects of the research activities of these two distinguished scientists. All participants were asked to review the literature and to anticipate future developments in their fields of interest. Over the last forty years both Frank and Derek have collaborated scientifically either in joint research projects, sometimes working within the same laboratory, or by exchanging scientific ideas and information. Both have always welcomed robust debate and discussion on all topics related to their areas of scientific research, and their achievements have contributed significantly to a highly productive era in the advancement of knowledge of nutritional biochemistry.

The Festschrift Symposium was attended by one hundred and fifty scientists including some from the United Kingdom, New Zealand, North America and South Africa. This was most gratifying especially considering the relatively short notice that was given for the meeting.

A meeting of this scope would not have been possible without sponsorship, and the organisers and the participants thank the following companies and research organisations for their generous support: Australian International Development Assistance Bureau; Australian Society of Animal Production; Chicken Meat Research and Development Council; Dairy Research and Development Corporation; Egg Industry Research and Development Council; Meat Research Corporation; Nutrition Society of Australia (Sydney Group); Pig Research and Development Corporation; Rhone Poulenc Animal Nutrition Pty Ltd; Ricegrowers' Co-operative

Ltd; University of Sydney Dairy Research Foundation; University of Sydney Faculty of Veterinary Science; University of Sydney Poultry Research Foundation.

We wish to thank all participants and chairpersons for their enthusiastic and valuable contributions to the meeting. We gratefully acknowledge the support of the Editor and Editorial Board of the Australian Journal of Agricultural Research who have made the publication of the Festschrift such an easy task.

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Ernest Frank Annison PhD, DSc, FRSCChem

Frank Annison studied chemistry at the University of London, graduating with First Class Honours in 1946. He became a research student under W. T. J. Morgan FRS at the Lister Institute of Preventive Medicine and was awarded a PhD from the University of London in 1951. He then moved, as a Scientific Officer, to the Institute of Animal Physiology at Babraham, Cambridge where he began basic biochemical studies on rumen fermentation. For one year he was seconded to the Rowett Research Institute in Aberdeen where he worked with R. L. M. Synge FRS and A. T. Phillipson. During this time Frank Annison helped to establish the concept of degradable and non-degradable protein in the rumen which is the basis for current systems of protein evaluation in ruminants.

In 1958 Frank Annison took up a position as Senior Lecturer in the Department of Biochemistry and Nutrition at the University of New England. He was promoted to Associate Professor in 1962. While at the University of New England he pioneered the use of isotopically-labelled compounds for measuring metabolite turnover and utilisation in ruminants. For this work he was awarded the degree of Doctor of Science from the University of London in 1967. He returned to the U.K. in 1964 and for 9 years he directed a research team investigating ruminant and monogastric nutrition at the Unilever Research Laboratory at Colworth House, Sharnbrook. There he collaborated with the late J. L. Linzell at the Institute of Animal Physiology, Babraham in a series of innovative studies on the metabolism of the mammary gland. By combining the techniques of arterio-venous difference measurements and isotope dilution they were able to obtain the first quantitative data on glucose and acetate utilisation by the lactating mammary gland and elucidated the mechanism of triacylglycerol uptake by mammary tissues.

While at Colworth House, he was appointed Special Professor in the Department of Nutrition and Biochemistry, University of Nottingham, and enjoyed a similar position in the Department of Agricultural Biochemistry, University of Newcastle-upon-Tyne.

Frank Annison was appointed to a Chair of Animal Husbandry (later Animal Science) at the University of Sydney in 1974. He has been Head of that Department and Director of both the Poultry and Dairy Research Foundations for the periods 1978–82 and 1985–92. At various times he has served as Pro-Dean both of the Faculty of Veterinary Science and also of the Faculty of Agriculture. Frank Annison has been active in promoting and advising on animal science research in Australia. He has been a member and Chairman of the Scientific Advisory Committee of the NSW Public Service Board, the Editorial Board of the Australian Journal of Biological Sciences, the Sydney Group of the Nutrition Society of Australia and the Rural Credits Development Fund of the Reserve Bank and a member of the former Dairy Research Council.

Despite these commitments Frank Annison has continued to be directly involved in research. His research achievements were recognised in 1990 by the award in Switzerland of the prestigious International Roche Research Prize for Animal Nutrition. In 1991 the Nutrition Society of Australia awarded Frank Annison a Fellowship of the Society in recognition of his outstanding contribution to research on nutritional biochemistry and physiology and to education.

Derek Barber Lindsay MA, MSc, DPhil

Derek Lindsay was an undergraduate at Trinity College, University of Oxford from where he graduated with honours in Chemistry in 1950. He subsequently took another honours degree in Physiology and graduated with First Class Honours in 1952. He then switched subjects again and obtained a DPhil from research in the Biochemistry Department at Oxford. The work was of some significance because it was one of the earliest to demonstrate that the insulin concentration range that increased glucose utilisation in isolated rat heart muscle was also the range that stimulated the transport of galactose and glucose across the cell membrane. This was an important finding both in terms of hormone action as well as in the control of metabolic processes.

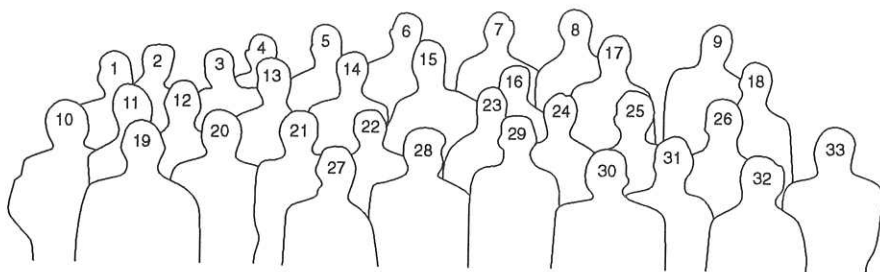
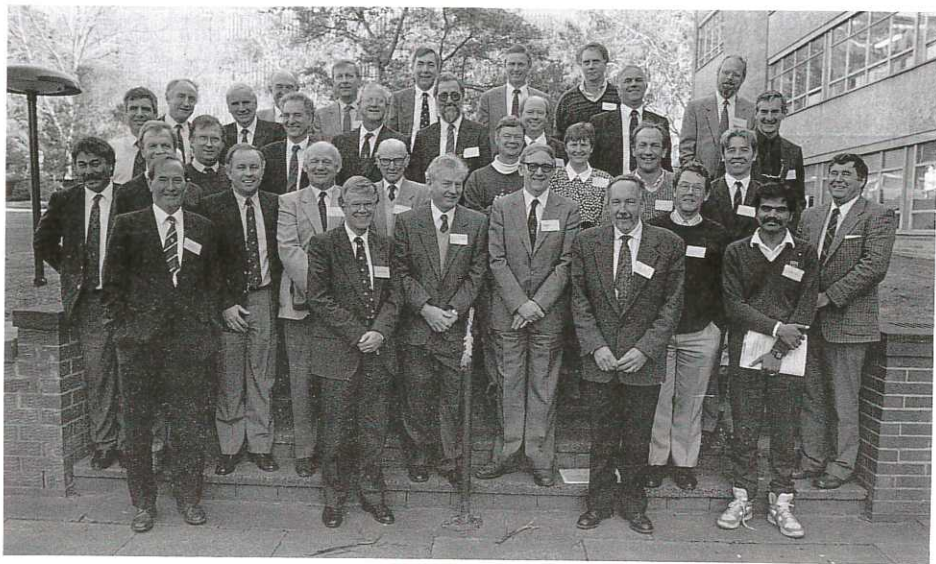
When Sir Rudolph Peters retired from the Chair of Biochemistry at Oxford and moved to head the Biochemistry Department of the Institute of Animal Physiology at Babraham, he took with him several people from Oxford, including Derek Lindsay. At Babraham, Frank Annison and Dyfed Lewis introduced him to rumen physiology and biochemistry and they pointed out the large gaps in understanding that existed at the time. The particular uncertainties concerning the relative importance of glucose and acetate as energy-yielding nutrients led Derek and Frank to use radioactively labelled acetate to determine its biokinetics in the sheep. This approach was then extended to the biokinetics of glucose and other metabolites when in 1960 Derek Lindsay took up a position at the University of New England and continued this collaborative research with Frank Annison who had moved to Australia two years earlier. At about this time Derek Lindsay wrote the first of several reviews on carbohydrate metabolism in ruminants which were instrumental in stimulating much further productive research.

Derek Lindsay was heavily involved in the development of undergraduate and postgraduate teaching of biochemistry at the University of New England. In 1965 he was awarded a Senior Fulbright Fellowship, and spent a year in the Department of Dairy Science, University of Illinois, as a Visiting Professor. In 1966 he was promoted to Associate Professor, and became head of the Department of Biochemistry and Nutrition which, in terms of research support, expanded to become the largest department in the University.

In 1968 Derek Lindsay returned to the U.K. to the Institute of Animal Physiology. One of the significant fields of research which he then developed, in collaboration with Brian Setchell, was the quantitation of nutrient utilization by the sheep brain. A particularly striking finding was the observation that the sheep brain, unlike that of the human, could not utilize ketone bodies. Derek Lindsay and Brian Setchell were also able to develop a hindlimb muscle preparation that has been effectively exploited by David Pethick and Hutton Oddy. While still at Babraham, Derek Lindsay was appointed a Special Professor of Animal Biochemistry at the University of Nottingham in 1975.

Derek Lindsay served on the Programme Committee and Council of the (U.K.) Nutrition Society and also as an Editor of the British Journal of Nutrition from 1972–1977; as an Editor of Placenta from 1985–1990; and as an Editor of the Journal of Agricultural Science from 1977–1990 when he became an International Consultant.

After a further brief period in Australia in 1982, as a Research Fellow at the University of Sydney, where he renewed collaboration with Frank Annison, Derek Lindsay returned again to Australia in 1985 to join the CSIRO at Rockhampton. There he leads a research team devoted to improving the growth of tropically adapted animals. He continues his interest in tertiary education and is the Deputy Chancellor and an Honorary Professor of the University of Central Queensland.



Caption for Group Photograph

Chairpersons and speakers: (1) Dr J. A. Nell; (2) Dr F. J. Ballard; (3) Dr T. W. Scott; (4) Professor R. B. Cumming; (5) Associate Professor R. C. Kellaway; (6) Dr V. H. Oddy; (7) Dr J. L. Black; (8) Associate Professor F. W. Nicholas; (9) Dr T. B. Mephram; (10) Dr E. Teleni; (11) Dr P. C. Wynn; (12) Dr L. R. Giles; (13) Associate Professor R. Bickerstaffe; (14) Professor J. G. van der Walt; (15) Associate Professor J. V. Nolan; (16) Dr R. A. Hunter; (17) Professor P. J. Buttery; (18) Professor D. J. Farrell; (19) Professor D.G. Armstrong; (20) Dr W. L. Bryden; (21) Professor R. A. Leng; (22) Dr I. W. McDonald; (23) Dr M. I. Gurr; (24) Dr C. B. Gow; (25) Dr D. W. Pethick; (26) Dr G. Annison; (27) Professor D. R. Fraser; (28) Professor E. F. Annison; (29) Professor D. B. Lindsay; (30) Associate Professor C. E. West; (31) Dr J. M. Gooden; (32) Dr M. Jois; (33) Professor G. H. McDowell.

Absent: Professor M. Peaker.