Animal Production in Australia

PROCEEDINGS OF THE
AUSTRALIAN SOCIETY
OF
ANIMAL PRODUCTION

VOLUME 15

FIFTEENTH BIENNIAL CONFERENCE

ARMIDALE, NEW SOUTH WALES, FEBRUARY, 1984

PERGAMON PRESS
SYDNEY • OXFORD • NEW YORK • TORONTO • PARIS • FRANKFURT
**OFFICE BEARERS 1982/1984**

<table>
<thead>
<tr>
<th>Position</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>President</td>
<td>Dr. J.L. Corbett</td>
</tr>
<tr>
<td>President-Elect</td>
<td>Dr. W.J. Pryor</td>
</tr>
<tr>
<td>Vice-President</td>
<td>Mr. R.J. Gordon</td>
</tr>
<tr>
<td>Secretary</td>
<td>Dr. C.J. Thwaites</td>
</tr>
<tr>
<td>Treasurer</td>
<td>Mr. J.M. George</td>
</tr>
<tr>
<td>Programme Committee Convener</td>
<td>Dr. J.J. Lynch</td>
</tr>
<tr>
<td>Editor</td>
<td>Dr. W.H. Southcott</td>
</tr>
<tr>
<td>Assistant Editor</td>
<td>Dr. P.J. Vickery</td>
</tr>
<tr>
<td>Secretary</td>
<td>Mrs. C.R. Jones</td>
</tr>
</tbody>
</table>

**Chairmen of Satellite Meetings**
- Sheep — Glen Innes: Mr. T.J. May
- Beef Cattle — Grafton: Dr. P.T. Mears
- Pigs — Gunnedah: Mr. P. Hassab

**Business Address**
C/o Australian Institute of Agricultural Science, 191 Royal Parade, Parkville, Victoria 3052, Australia.
FELLOWS OF THE SOCIETY

Fellows shall be members who, in the opinion of the Council of the Society, have rendered eminent service to Animal Production in general or within Australia in particular.

Charles Euston Young, elected January 25, 1956
Mervin Clarence Franklin, elected February 19, 1962
Hedley Ralph Marston, elected February 19, 1962
Phillip Gurner Schinckel, elected posthumously August 11, 1964
Helen Newton Turner, elected February 23, 1966
Keith Valentine Leighton Kesteven, elected February 21, 1968
Archibald James Vasey, elected February 21, 1968
Rodger Henry Watson, elected February 21, 1968
Eric John Underwood, elected August 17, 1970
David Sutcliffe Wishart, elected August 17, 1970
Hector John Lee, elected February 17, 1972
George Russell Moule, elected February 17, 1972
Frederick Harold William Morley, elected February 20, 1974
Alan Charles Hassall, elected February 11, 1976
Lancelot Hamilton Lines, elected February 11, 1976
Ian Wilbur McDonald, elected February 11, 1976
Patrick Reginald McMahon, elected February 11, 1976
Albert Henry Bishop, elected February 22, 1978
Victor Gordon Cole, elected February 22, 1978
Leslie Alfred Downey, elected February 22, 1978
Reginald John Moor, elected February 22, 1978
Robert Lover Reid, elected February 22, 1978
Wallace Carl Skelsey, elected February 22, 1978
Percival James Skerman, elected February 22, 1978
Dudley Martin Smith, elected February 22, 1978
Neil Tolmie McRae Yeates, elected February 22, 1978
Graham Ian Alexander, elected August 20, 1980
Gordon Lee McClymont, elected August 20, 1980
Terence James Robinson, elected August 20, 1980
Derek Edward Tribe, elected August 20, 1980
Sydney John Miller, elected May 12, 1982
Norman McCall Tulloch, elected May 12, 1982
Henry Greg Turner, elected May 12, 1982
William Maxwell Willoughby, elected May 12, 1982
William George Aldden, elected February 15, 1984
Robert Henry Hayman, elected February 15, 1984
James Irwin Faithful Maple-Brown, elected February 15, 1984
Jim Harcourt Shepherd, elected February 15, 1984

* Deceased

HONORARY MEMBERS OF THE SOCIETY

Honorary members shall be members who, in the opinion of the Council of the Society, have made outstanding and continued contributions to the welfare and purpose of a Branch or of the Society as a whole.

Joseph Phillip Kahler, elected February 11, 1976
Clarence James Daley, elected August 20, 1980
Ian Neville Southey, elected May 12, 1982
W.G. (Bill) Allden, M.A., M.Agr.Sc., Ph.D., FAIAS, was born in England. He served for six years in the Royal Air Force and completed his M.A. at Cambridge in 1949. In 1950 he joined the South Australian Department of Agriculture as an adviser in Animal Production working on the nutrition of pigs and poultry, and on beef cattle and sheep production. In 1953 he was appointed as Officer-in-Charge of the Kybybolite Research Centre and its two outstations. There, he initiated studies on the problem of poor growth in weaner sheep, a comparison of dam and sire breeds for prime lamb production and demonstrated the effect of time of mating on fertility and fecundity in the Border Leicester x Merino ewe. He also developed the Struan outstation to expand work on beef cattle.

On appointment as lecturer at the University of Adelaide in 1956 he began studies at the Waite Agricultural Research Institute on the role of protein and energy supplements in the diet of growing sheep. For this he was awarded the degree of Master of Agricultural Science in 1960. Further work on the under-nutrition of young sheep and its lifetime consequences led to the award of a Ph.D. in 1965, and he became Reader in 1968. Allden broke new and difficult ground as he studied summer nutrition of sheep in the field and initiated studies which defined the factors associated with 

hebrage intake by the grazing ruminant.

Appointed as Mortlock Research Fellow in 1961, he planned and worked for the establishment in 1965 of the Mortlock Experiment Station at Mintaro. There, his studies on the deficiencies of summer pastures were extended to include cattle. He examined the influence of stocking rate on reproduction in ewe flocks and the maintenance of flock numbers. In recent years his studies have included assessment of the nutritional value of a wide range of grain legumes and their integration into animal production systems.

As a lecturer his influence has spread over many years to a large number of graduate and postgraduate students. Author of more than forty scientific papers, reviews and contributions to books he has shown a critical appreciation of the challenging environment of southern Australia.

A foundation member of the Australian Society of Animal Production (S.A. Branch) he has served as committee member, on editorial committees and as President in 1957 and again in 1963. He has been a regular contributor to the Society’s Biennial Conferences. In 1969 Dr Allden was President of the South Australian Branch of the Australian Institute of Agricultural Science and was made a Fellow of the Institute in 1980.

For his contributions to the livestock industries in the areas of research and education the Australian Society of Animal Production is pleased to enrol him as a Fellow of the Society.
Bob Hayman, M.Agr.Sc., was a member of the small group in Sydney which initiated serious discussion on the formation of an Australian Society of Animal Production. With the vision of a substantial continuing Australia-wide society, he played a leading role in the initial drafting of an appropriate Constitution. As Secretary-Convener of the three-man Steering Committee appointed at the First Interstate Meeting in May 1951, he maintained that role in gaining interstate agreement on the Constitution which was submitted to the Inaugural meeting of the Society in Canberra in January 1954 and was adopted with only minor modification.

Bob Hayman’s interest in the formation of the Society arose from his research at the CSIR (later CSIRO) F.D. McMaster Field Station at Badgery’s Creek, New South Wales, in the late 1940s. First with Dr R.B. Kelley and later as Officer-in-Charge of the Field Station he collaborated in many studies of sheep and cattle in the field including the identification of characters important to production, study of their physiology and heritability, and application of the information gained to improve production. The early studies on the physical definition of sheep and their fleece, and on survival and growth of lambs were accompanied by Hayman’s penetrating observations on fleece rot which are still much quoted.

When working with Dr Kelley in the CSIRO Division of Animal Health and Production, Bob Hayman was involved in the decision to import Sahiwal and Red Sindhi cattle from Pakistan to develop a breed of dairy cattle for use in the Australian tropics. On the formation of the Division of Animal Genetics he collaborated with Dr J.M. Rendel in the development of the Australian Milking Zebu (AMZ) and was in charge of the cross-breeding programme at Badgery’s Creek and later of the progeny testing on the North Coast of New South Wales and Queensland. He was responsible for the mating and selection of cattle in the early years of the project and he contributed to the test design for heat tolerance and tick resistance incorporated into the selection procedures. If Drs Kelley and Rendel could be called the parents of the breed which evolved, Bob Hayman must be said to be the midwife. He communicated his enthusiasm to all who were involved in the development of the AMZ, and before his retirement in 1977, devoted much time and effort to its promotion in Australia, and overseas.

For the vision, sense of purpose and persistence in leading the initial Steering Committee to the formation of the Society, and for his personal contribution to the development of information on characters important to production in sheep and cattle the Australian Society of Animal Production is pleased to enrol him as a Fellow of the Society.
Jim Maple-Brown, a Merino stud-breeder from Goulburn, owns the long-standing stud ‘Springfield’ and the more recently developed ‘Fonthill’. He has collaborated with research workers in sheep-breeding over a long period, and for decades has applied the results of research to his own operations in the field, particularly in relation to the use of measurement instead of visual appraisal.

He was an early believer in the use of measurement in selling wool as well as in selecting sheep, and the first sales of wool by measured sample were made by an organisation which he developed, namely Economic Wool Producers. He was later a member of the Australian Wool Corporation’s Objective Measurement Policy Committee, whose 1973 recommendations led to the establishment of sale on measurement, by which method over 90% of auctioned wool was sold in Australia in 1982/83.

Jim Maple-Brown has constantly spoken out in favour of the use of measurement in selection, and in May 1982 stimulated the formation of the Performance Merino Breeders’ Association, membership of which is open to all who employ measurement in their selection procedures. Appropriately, he was elected the Association’s first President, and was re-elected in May 1983.

To parallel the foreshadowed sale of wool by description the Association has been working on a computerised system of ram-selling by description; this again was stimulated by Jim Maple-Brown. Some years ago he bought his own home computer, and grades his rams for sale on measurements.

For his consistent application of research results in the field, and for his campaigning for such application to be more widespread, the Australian Society of Animal Production is pleased to enrol him as a Fellow of the Society.
Jim Shepherd grew up at Bruce Rock in the wheat-sheep zone of Western Australia. His love of farming and his concern for the environment led him to study both forestry and agriculture. He graduated from the University of Western Australia in 1952 with degrees of B.Sc. (Agric) and B.Sc. (For).

Part of the degree in forestry involved two years of study at the Australian National University and, while based in Canberra, Jim rekindled his interest in sheep breeding. He studied the sheep industry in New South Wales and followed the history of many of the well-known Merino studs. He made his own assessment of their achievements and evaluated the possible advantages of selecting animals by objective measures of performance.

Two years after graduation Jim returned to the family property near Bruce Rock where he applied some of his ideas on sheep breeding to the family’s stud of Bungaree Merinos by selecting rams and ewes on fleece weight. In 1959 he sought help from Professor T.J. Robinson in an artificial insemination programme to improve the value of individual rams of outstanding merit.

Jim soon recognised the limitations of selecting within his own flock and realised that large gains might be had if he extended the genetic base. He began coaxing breeders with commercial and stud flocks to join him in a cooperative breeding programme, a goal aided by Dr Helen Newton Turner who gave a series of lectures in Western Australia during 1963 on the scientific principles of breeding. Thirty-two farmers in Western Australia were persuaded to join him in selecting animals on fleece weight and fibre diameter. These farmers, with others, founded the Australian Merino Society (AMS) in 1969 with Jim Shepherd as their President. The growth of the AMS was slow in the early years but soon flourished under Jim’s drive and enthusiasm. During the 1970s the AMS grew rapidly and extended into other states beginning with South Australia in 1970, New South Wales in 1973, Queensland in 1975, and Victoria in 1976. By 1982 the AMS had 900 farmers with 3 million breeding ewes in five states.

Jim has travelled widely throughout the major sheep-raising and wool-manufacturing countries of the world. He is well known for his achievements in animal breeding. His enthusiasm, and often controversial approach, has won him national and international renown amongst scientists and farmers alike. He was Federal President of the Australian Society of Animal Production in 1979 and 1980, and he has played an influential role for many years as a member of the Western Australian State Advisory Committee to CSIRO.

For his contributions to animal production the Australian Society of Animal Production is pleased to enrol him as a Fellow of the Society.
ACKNOWLEDGEMENTS

The Australian Society of Animal Production gratefully acknowledges the support and financial contributions received from the following donors:

- Australian Meat Research Committee
- Australian Pig Industry Research Committee
- Australian Wool Corporation
- ANZ Bank Limited
- CSIRO Division of Animal Production
- East West Airlines
- Smith Kline French Limited
- Wellcome Australia Limited

The willing assistance of authors, referees, typists and secretarial staff in the preparation of these Proceedings is also greatly appreciated.

CITATION OF PAPERS

Papers in this publication should be cited as appearing in the Proceedings of the Australian Society of Animal Production.

It is suggested that individual contributions to Contract Reviews should be referenced in the following way:
