ELECTION OF HONORARY LIFE MEMBER

ALEXANDER LINDSAY RAE
M.Agr.Sc.(N.Z.), Ph.D.(Iowa), FRSNZ, FNZIAS.

Alexander Lindsay Rae is a man of high achievement as a scholar, with a profound association with the development of agricultural education at Massey, a man with close involvement in the development of practical animal production in New Zealand and with a world-renowned reputation in genetics and sheep production. These are the components of a distinguished and most worthy nominee for honorary life membership of the Society.

Al Rae was born at Eltham in 1923. He was educated in Taranaki at Mangamingi and New Plymouth Boys' High School. The intermediate year of his Bachelor of Agricultural Science degree was completed at Auckland University College. Massey then became the base for his work and continuing achievements where he completed his M.Agr.Sc. with First Class Honours in 1946. His professional association with Massey began as a junior lecturer in 1944. His academic achievements continued, taking him to Iowa State University, where at this leading institution in the emerging field of animal breeding he completed his Ph.D. in 1950. His school and university studies were chequered throughout with awards, scholarships and bursaries. Al Rae returned in 1951 to occupy the foundation chair in Sheep Husbandry at (then) Massey Agricultural College. He relinquished the role as Head of Department in 1980 to accept a Personal Chair at Massey University, which he now holds.

Distinctions continued from those received in his student days and were in ever-broadening areas of expertise. He has served on a very large number of committees where his participation is sought because of his specialised knowledge and wide agricultural understanding.

He has played a full role with professional societies: President of this Society, foundation member of the New Zealand Institute of Agricultural Science, President of N.Z. Genetical Society and of the N.Z. Branch World Poultry Science Association. These activities have displayed his masterly ability to present to members a concise picture of the *status quo* and a remarkable insight into likely future developments.

Professor Rae's scientific eminence has been recognised by various bodies. He was elected a Fellow of the NZIAS in 1970, and of the Royal Society of New Zealand in 1973. The McMeekan Memorial award was conferred on him in 1977 by this Society in recognition of his outstanding contribution to animal production in New Zealand. In 1980 he was awarded the Sir Ernest

Marsden Medal for his outstanding service to science.

The oration made in the presentation of the McMeekan Memorial award in Massey's 50th Jubilee Year said it well—

> "few have contributed more to the development and reputation of Massey as an institution of agricultural learning than Professor Rae"

In the fields of genetics, animal breeding, biometrics and sheep production Professor Rae has a soundness, a breadth of knowledge and an unrivalled ability to communicate complex and abstract ideas. These abilities have enthused his students, many of whom have proceeded to higher qualifications in these subjects. He has supervised and advised a large number of post-graduate students, all of whom would testify to his rare ability to simplify difficult concepts and to his wise and sympathetic guidance in scientific matters. His post-graduate students came to know him especially well, particularly for the effort he made to assist them their individual problems—often his own

time. Through his students Professor Rae achieved one of the maxims of applied quantitative genetics:

> "an ever-widening dissemination of knowledge like genes through the multiplying tier from the nucleus of the breeding scheme"

He has also played an active role in the administration of research and education through his membership of the Massey Professorial Board, the University Grants Committee Research Committee and the Primary Production Committee of the National Research Advisory Council and has contributed to many ad hoc committees and as an informal sounding board being able to readily transfer his full attention to any task or question, treating all as a personal challenge rather than another's problem.

Professor Rae's major scientific contributions have been through application of the principle of population genetics to the improvement of animals. His main research has been concerned with the inheritance of productive traits in sheep and in development of selection plans for sheep improvement. A feature of his approach has always been one of not only assimilating biological and genetic principles, but also of incorporating them into practical breeding programmes. The early example was his M.Agr.Sc. thesis on progeny testing of Romney sheep. His Ph.D. thesis considered the statistical problems of visual scores so prevalent in industry evaluation of animal merit for breeding. This research into variation and covariation in the Romney was regarded by his supervisors, Drs Lush and Hazel, as outstanding work in which new techniques of analysis were developed.

His personal research and his collaboration with others has always led to a better appreciation of genetic principles, often providing the basic framework for important practical applications. The national sheep improvement programme known as Sheeplan is based on Professor Rae's research and advocacy and is designed to improve the genetic merit of flocks through careful analysis of their performance. Research he presented as recently as 1980 at the World Congress of Sheep and Beef Cattle Breeding is a likely next step in the development of Sheeplan using the "best linear unbiased prediction" technology.

Through his acceptance by the animal industry at large, Al Rae has been most successful in developing scientific findings which benefit the New Zealand economy. He has had a major impact on raising production levels in the poultry, dairy, beef and sheep industries. In poultry production, Professor Rae assisted a group of cooperating breeders to raise substantially the number of eggs produced per bird. Assistance to the dairy industry comes through his long association with the New Zealand Dairy Board. As a member of the Board's Herd Improvement Council Standing Advisory Committee for over 30 years, Professor Rae has contributed through identification of genetically superior dairy sires and widespread dissemination of this genetic merit through artificial insemination. The push for genetic improvement in the beef industry has received support from Professor Rae's research, from his work as a member of Livestock Improvement Technical Advisory Committee (a national Committee on sheep and beef cattle improvement set up to advise the Minister of Agriculture) and from his role on the Combined Beef Breeders Research Committee. It was Professor Rae's efforts and leadership that resulted in the New Zealand carpet wool industry adopting the Drysdale breed as its main source of wool. Earlier Mendelian studies of the late Dr Dry at Massey had paved the way for this development which came to fruition under the technical and scientific guidance of Professor Rae.

His other interests in national improvement programmes for sheep also led to important industry liaison such as that with Producer Boards and Government policy makers. His liaison with traditional breed societies was maintained both on a formal and informal basis and was successful in the initiation of group breeding schemes for sheep and beef cattle here which have become models for the similar schemes overseas. Al's vital role in the initiation and development of the national flock recording scheme and his continuing contributions on the Sheeplan Technical Group has given the New Zealand sheep industry a selection tool unrivalled anywhere in the world.

Professor Rae's present activities are concentrated on developing the genetic understanding of lean lamb production, including selection and crossbreeding and the importation of new breeds, hence his membership of the Maximum Security Quarantine Advisory Committee.

Professor Rae's career is noteworthy for his collaborative involvements with researchers and workers from other organisations and disciplines. Collaborative research with DSIR has encompassed aspects of plant chemistry and meat quality. Currently this involves lamb grading methods and selection techniques in association with the New Zealand Meat Board, MAF and Lands and Survey personnel. For MAF, Al is a sounding board for many animal breeding matters and he has contributed greatly to lean lamb research and the training of extension staff in animal breeding.

Professor Rae has served on numerous international committees and organisations. He is sought after as a world authority in his field; renowned for his innovative approach but selective in choosing from among his opportunities to participate in overseas ventures and conferences by identifying those most relevant to the situation at home. He is New Zealand's greatest ambassador in animal breeding.

Al has a kindness, wisdom and keen intellect that makes him equally at home talking to scientists,