# LIFE MEMBER

## Colin W. Holmes

### B.Agr. (Hons) (Queens), Ph.D. (Queens)

Professor Colin William Holmes was born in Ceylon. His father was in the Colonial Services and his mother was the daughter of a tea planter. The family returned to Northern Ireland when Colin was 12. He graduated from Queens University with a Bachelor of Agriculture followed by his PhD in 1966. Dr Holmes accepted a five-year lectureship in the then Department of Dairy Husbandry at Massey University in 1966.

In 1975, Colin initiated investigations into the use of somatic cell counts (SCC) as a means of indirectly detecting the presence of mastitis. Additional work in the late 1980s led to SCC becoming an essential management tool for farmers and dairy factories alike. As a consequence of this research, Colin was a member of the National Mastitis Committee.

Colin had a long involvement with the out-of-season production of milk to service local needs for liquid milk, and served on the Town Milk Research Committee. He led a number of critical studies to improve the efficiency of winter milk production on the Massey University No 1 Dairy Farm. During the 1980s, Colin became involved in a dairy industry funded project run at the Massey University No. 3 Dairy Farm to compare the performance of high and low Breeding Index cows.

Colin has had an integral role in the debate regarding the optimal size of dairy cows for efficient production of milk solids. In 1989, he established a trial in conjunction with the Livestock Improvement Corporation to select for large and small cow sizes within the Massey University Research herd. This trial had direct relevance to the Animal Evaluation System which was introduced in 1996.

Colin was chairman of the New Zealand project group for an international study comparing Holstein-Friesian (HF) cows from different genetic strains - High Breeding Worth Overseas HF, High Breeding Worth New Zealand HF and Low Breeding Worth New Zealand HF which were the daughters of 1970s NZ proven bulls. The study represented a co-ordinated multidisciplinary approach to determine the "ideal" animal for pasture-based dairy systems. The New Zealand results were coordinated and integrated with results from a similar trial undertaken during the same period at Moorepark Research Station, Ireland.

After 40 years of teaching diploma and degree classes, it is clear that Colin has had a significant impact on the thinking and actions of a generation of dairy industry people. Due to Colin's emphasis on the whole farm system, he gained a large following of students who progressed into postgraduate education in Dairy Production. The last decade has also seen increasing interest in New Zealand's style of dairy production by several overseas countries. This has led to an increase in the number of international students studying dairy production from pasture.

Colin has always had an interest in improving farmer knowledge. In 1984, he took on the role of organising the Massey Dairy Farmers Conference. These conferences earned an outstanding reputation amongst those involved in the dairying sector. Colin also played a major role in writing and editing the textbook "Milk production from pasture". This text has been widely used by consultants and farmers as well as students.

Professor Holmes is widely known throughout the New Zealand dairy industry as a clear and effective communicator with a passionate commitment to the dairy farming community. He is a firm believer in the necessity to maintain profitable pastoral systems based on a sound understanding of the underlying scientific principles.

Colin Holmes is a long standing member of the New Zealand Society of Animal Production, and a regular contributor, being an author of 66 papers. He is the only member of the society to receive both the Sir Arthur Ward Award, in 1997, and the McMeekan Memorial Award, in 2004. Colin is respected, not only by his university colleagues, but also by those in agricultural research and extension, and by many dairy farmers who have benefited from his wisdom and deep felt empathy with the issues they face.

We believe these abovementioned qualities make Professor Holmes a worthy nominee for Honorary Life Membership of the New Zealand Society of Animal Production.

*Stephen Morris and Hugh Blair*

# LIFE MEMBER
## Patrick Shannon
### B.Sc. (Hons), D.Sc., Q.S.O.

Honorary Life Members of New Zealand Society of Animal Production are "persons who have rendered significant service to the cause of animal production".

Pat Shannon received the inaugural C.P. McMeekan Memorial Award from this Society in 1975. The oration supporting the Award highlighted his research in semen diluents. The results of that research have subsequently become the cornerstone of the field service provided to the New Zealand dairy artificial breeding industry. The oration also mentioned that Pat had been a member of the Society's Management Committee in 1966-67, Vice-President in 1969-70 and President in 1970-71.

Subsequent forms of recognition that Pat has received since 1975 have included a D.Sc. from the University of Waikato in 1985, the New Zealand Science and Technology Medal from the Royal Society of New Zealand in 1996, election as a Companion of the Queen's Service Order of New Zealand in 1999 and the inaugural Fonterra Dairy Excellence Lifetime Achievement Award in 2003.

It has been a personal privilege and my good fortune to receive the benefit of Pat's scientific wisdom since conducting my first research trial at the New Zealand Dairy Board's Awahuri Artifical Breeding Centre in 1962 as part of my M.Agr.Sc.degree. Subsequently, Pat was my Senior Research Officer while I was employed by the New Zealand Dairy Board from 1967 to 1977.

Reflecting on the scientific significance of Pat's career can provide an insight into how things have changed in the process of research becoming 'managed' rather than 'spontaneous'. Pat commenced his semen research in 1954. Whereas every other research laboratory was focussing on the preservation of bull's sperm by freezing, Pat was encouraged to back his confidence in developing a chilled semen diluent in the first instance. Results from elsewhere indicated that it was impossible to dilute semen beyond a critical point because of 'the dilution effect'. Pat conducted a series of studies to test this hypothesis. The first involved adding seminal plasma obtained from vasectomised bulls to diluted semen; the second adding 'freshly' killed dead sperm to diluted semen. Both 'additives' proved to be toxic to motile sperm. Pat then proceeded to develop diluents that minimised the negative effects of these two 'toxins'. The final outcome represented about 15 years of research to create a scientifically based semen diluent called 'Caprogen'.

The financial return from this research to New Zealand's dairy industry continues to this day. It involved Pat spending the first hours of most work days checking the motility of sperm in experimental diluents and using a novel scoring system. It also involved a commitment by the New Zealand Dairy Board to a long-term research program that successfully proved that 'current wisdom' was wrong. Pat's contributions were scientifically unique through his ability to conduct research of a biochemical nature to enhance sire utilisation. He also conducted research to improve the statistical methodology for sire selection. While some may have made significant contributions to one of these two fields of research, none has contributed at the highest level to both.

In the course of a research career, some contributions may fail to find favour or are not adopted. In Pat's case, two particular examples will suffice. In 1962, Pat developed a novel statistical approach to minimise the effects of binomial variation when calculating the heritability of conception rate among sires. The reported heritability was 0.55. This study deserves to be repeated. The second example involves the concept of re-diluting deep frozen semen with Caprogen to allow inseminations to be made for at least the following 24 hours.

The single sad note in not recognising the deserving nature of Pat's election to Honorary Life Membership is that an earlier date could have allowed the occasion to be shared with Pat's wife, Anne. They certainly shared in the previous success that has been a continuing part of Pat's career. This Society can feel proud in recognising this success by electing Dr Pat Shannon to Honorary Life Membership.

*Jock Macmillan and Chris Burke*