

## SIR ARTHUR WARD AWARD

### Associate Professor Colin W. Holmes

Following the completion of his PhD degree in 1966 at Queen's University, Belfast, Colin Holmes was employed at Massey University in the Department of Dairy Husbandry. His sustained contribution to teaching, research and extension led to his progressing through the academic hierarchy to the grade of Reader (the highest grade at Massey University for non-professorial staff) in 1982.

Professor Holmes has been given this Award on the basis of an outstanding contribution to the uptake of dairy production research knowledge by dairy farmers in New Zealand.

While not recognised as part of the Award, it should be acknowledged that Professor Holmes' work is internationally recognised. Between 1993 and 1996, Professor Holmes has been invited to talk at a variety of international conferences/speaking tours including Australia (1993), Argentina (1993 and 1994), Ireland (1994), Brazil (1995) and Ecuador (1996). A further address is planned for later this year in England (November), and invitations to speak again in Argentina and Chile in 1997 have already been received. In addition to these achievements, pressures of other work have prevented Professor Holmes from accepting invitations to speak at conferences in Mexico (1994), Argentina (1996), Brazil (1996) and Chile (1996). Finally, Professor Holmes has also hosted many farmer and/or government groups at Massey University from a variety of countries.

#### Contribution to Pastoral-Based Dairy Production in New Zealand

Professor Holmes has made a substantial and ongoing contribution to the education of people participating in the New Zealand dairy industry. This contribution can be subdivided into four main components.

#### *Tertiary education*

Each year since 1966, Professor Holmes has contributed to dairy production teaching in all degree and sub-degree programmes offered through the Department of Dairy Husbandry and subsequently, the Department of Animal Science, at Massey University. At a conservative estimate, there will be some 3000 people who have been exposed to the teaching style of Professor Holmes. While several staff can claim to have had this impact in a numerical sense, few would equal the ability with which Professor Holmes delivers his subject. Dairy production courses are now taught with an emphasis on understanding first, how aspects of animal science such as nutrition, reproduction, genetics and lactation, contribute to animal production. Then secondly, how aspects of pasture management, animal management and farm management must be integrated to achieve the objective of enhanced profitability of dairy farming systems. This integration requires visits to farms, that the students work in groups and that they each submit reports. This approach to teaching is expensive in terms of staff time, and it is to the credit of Professor Holmes that he

has persevered when greater personal recognition might have been achieved through redirecting these efforts in the pursuit of research. That said, Professor Holmes has published 10 papers in refereed journals since 1990, in addition to the large number of conference papers mentioned below.

This style of teaching has also been transferred into the dairy production post-graduate paper which is under the control of Professor Holmes. The high esteem with which this course is held amongst students can be judged by the regularly high numbers that enrol in this paper.

The direct influence of Professor Holmes' philosophy regarding pastoral dairy production is now being multiplied many-fold through the work of his graduate and post-graduate students.

In addition to the direct student contact mentioned above, Professor Holmes also played a major role in coordinating the publication of the standard text "Milk Production from Pasture". Apart from contributing significantly to the writing of material contained in the book, Professor Holmes was also the senior editor. This text has been widely used by consultants and farmers as well as students; it has been translated into Spanish and is currently being revised.

#### *Massey Dairy Farmers Conferences*

Professor Holmes has been responsible for the organisation of the Massey Dairy Farmers Conference since 1984. These conferences have earned an outstanding reputation amongst those involved in the dairying sector. In 1989, a decision was made to hold meetings away from the Massey University Campus to encourage greater farmer participation. While Professor Holmes continues to "drive" the conferences, he encourages local organising committees, comprising mainly of farmers, to assume the major responsibility for the programme, venue, social and publicity aspects of the conference. This management by local teams of farmers helps to ensure that the programme and activities are focussed on topics which are relevant to all local farmers. Centres such as Hawera, Dannevirke, New Plymouth, Takaka, Methven, Feilding and Masterton have been visited, in addition to Palmerston North. This change to a "road-show" style of conferencing has proved to be a great success, with conferences typically being "sold-out" and attendances ranging between 300 and 450. Furthermore, farmer groups now approach Professor Holmes in an attempt to get "their town" on the conference circuit.

#### *Conferences, seminars and the like*

Professor Holmes is a regular contributor to the Annual Conference of the New Zealand Society of Animal Production. Indeed, since 1990, he has contributed 17 papers. Furthermore, he is a major contributor to the above-mentioned Massey Dairy Farmers Conference, having provided 15 papers since 1990.

Apart from the regular conferences mentioned previously, Professor Holmes has been involved in a wide range

of one-off field days via the University farms, consultancy firms and the Dairy Board Consultancy Officers.

#### **Application of specific research results**

*The Massey Grass Meter:* This was invented in 1974, and Professor Holmes advocated its use in quantitatively planning the use of pasture. While the original design was developed into a commercial pasture meter in Australia (in 1979), the meter has found great favour amongst New Zealand advisors and farmers to assist with pasture budgeting.

*Somatic Cell Counts (SCC) and Mastitis Control:* In 1975, a Palmerston North group, including Mr I. Hooke of LIC, local winter milk producers and Professor Holmes, investigated the use of SCC as a means of indirectly detecting the presence of mastitis. This was the first service of its kind in New Zealand. Additional work by a PhD student in 1990 supervised by Professor Holmes, has led to SCC becoming an essential management tool for farmers and factories alike. The provision of SCC data has grown into a nation-wide service provided by LIC. Professor Holmes has also been a member of the Mastitis Advisory Committee since its inception.

*Town Milk/Winter Milk Supply:* Professor Holmes has had a long involvement with the "out of season" production of milk to service local needs for liquid milk. He has served on the Town Milk Research Committee and has had a long involvement with Massey University's No.1 dairy farm, which has been devoted to town milk supply. Professor Holmes has led a number of critical studies to improve the efficiency of winter milk production. Two of note are the use of nitrogen to enhance pasture

growth, undertaken between 1970 and 1974, and the current TBG-funded farmllet study examining the effect of winter milk production on farm productivity.

*Cow Size and Efficiency:* Professor Holmes has been contributing to the debate regarding the optimal size of dairy cows for the efficient production of milk solids for some 10 years. In 1989, he established a trial in conjunction with LIC to select for large and small cow size within the Massey University Research herd. This trial has direct relevance to the new Animal Evaluation Scheme in which cow size is explicitly included for the first time in the national selection objective and genetic evaluations are made across breeds of disparate body size.

#### **Research**

While the basis of this Award is focused on education, it would be an oversight to ignore the contribution that Professor Holmes makes to research. This impacts in two ways. First, Professor Holmes is internationally recognised for his research in efficiency issues regarding grazing dairy cows. Secondly, an active research career requires that Professor Holmes must allocate his working hours between the two demanding tasks of education and research. It can be difficult to arrive at an appropriate balance.

Professor Colin Holmes is a worthy recipient of the Sir Arthur Ward Award for 1996/97 based on the significant contribution he has made to pastoral dairy production in New Zealand.

*Professor Robert D. Anderson  
Professor Hugh T. Blair*