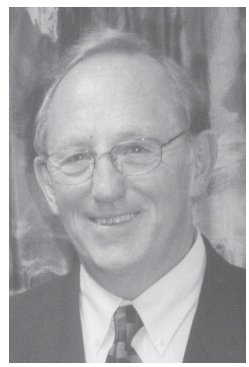
HONORARY LIFE MEMBERSHIP
Marcus John Ulyatt

M Agr Sc, PhD, DSc, FNZIAS, FRSNZ



Dr Marc Ulyatt has, in a long and distinguished career of over 40 years national and international research, contributed impressively toward our current understanding of the nutrition of ruminants. During his career Dr Ulyatt has published over 130 scientific papers in control of rumen digestion, protein digestion and metabolism, pasture plant evaluation, research and decision support models in ruminant nutrition and methane emission from ruminants. Much work was carried out in collaboration with leading international groups in Australia (Waite Institute), Scotland (Hannah Dairy Research Institute and Rowett Research Institute) and the USA (Universities of California and Ohio).

Marc's research career started in 1959 when, as a graduate student at Massey he took part in collaborative experiments between Massey and DSIR known as the Pasture Strain Trials. DSIR employed Marc to undertake a PhD working on the regulation of feed intake in ruminants. After graduation in 1964 Marc won a NZ National Research Fellowship which took him to Scotland, working with Sir Kenneth Blaxter at the Hannah Dairy Research Institute, and the Rowett Research Institute.

Marc returned to New Zealand in 1967 to examine the cause of the large difference in liveweight gain when sheep were fed ryegrass or white clover. In collaboration with leading international scientists, including Ray Bailey, John MacRae, Adrian Egan, Lee Baldwin, Des Walker, and others, pioneering techniques were developed to measure the flow of digesta through the gastro-intestinal tract. In 1979, Marc was invited to Grassland Research Institute, Hurley, where he collaborated with David Thomson and David Beever. It was during this period that it was discovered that certain legumes such as *Lotus* species and sainfoin contain condensed tannins which were shown to spare protein from rumen digestion. This work led to other research to identify the active components of the condensed tannin fraction and to the breeding of tannin-containing plants.

During a period of ground-breaking research in understanding the regulation of rumen digestion, Marc and his fellow researchers demonstrated the physical attributes of the diet in determining feeding value, and that long feed particles are broken down until they reach a threshold size that can be passed out of the rumen. The relative importance of chewing and rumination in reducing particle size was assessed, and the fundamentals of rumination were elucidated and landmark models developed. In the early 1990s Marc developed a programme to research protein utilisation. This was a key theme of pasture plant digestion that Marc continued to develop as earlier work had shown that protein was poorly utilised by ruminants fed fresh pasture and that protein supply to the small intestine was correlated with animal performance. Marc led and grew this programme for most of its lifetime. Overall outputs from the group were impressive.

During the strategic research described above, Marc also looked for opportunities to transfer relevant technology to practical problems in the area of feed evaluation. Most recently, Marc played a major role, along with Julian Lee and others in setting up a commercial feed analysis service, "feedTECH", based on Near Infra-red Reflectance technology to evaluate feeds.

Marc's interests were wider. In the mid 1980s, a project was initiated with Tricia Harris and Winsome Parnell to establish the New Zealand Food Composition Tables. Marc also embraced Biotechnology, and in the early 1990s spent six months as visiting Professor at the Edison Animal Biotechnology Centre, Ohio University.

In the early 1990s, interest in greenhouse gases focused on ruminant methane as the major source of emission in New Zealand. Marc developed the first national inventory for ruminant methane, with a spreadsheet model of ruminant methane emission constructed in 1991 for the Ministry for the Environment for use in policy development. Even in retirement, Marc retains an involvement in this very important area of work working with Dr Harry Clark in refining methodologies for the ruminant methane inventory to meet obligations under the Kyoto protocol.

Marc was also heavily involved in developing and setting research directions in roles such as: Assistant Director of the DSIR Division of Applied Biochemistry and Biotechnology; Science leader of the Establishment Unit of AgResearch and member of national committees such as Primary Production Sciences Standing Committee (1995-7).

Many roles were of national significance. Marc in his role as President of NZIAS chaired "The Crisis in New Zealand Science" in 1988 to raise public awareness of science through the media. Marc continued to be heavily involved in the Royal Society of New Zealand - as Home Secretary from 1991, and subsequently an Interim Board Member and Academy councillor.

Marc served on the committee of the New Zealand Society of Animal Production, was President of the Nutrition Society of New Zealand and the New Zealand Institute of Agricultural Science. More recent honours and awards include: Fellow of the Royal Society of New Zealand (1988); Fellow of the New Zealand Institute of Agricultural Science (1989); presentation of the Muriel Bell Lecture to the Nutrition Society of New Zealand in 1991 and presentation of the Livestock Improvement Corporation Lecture to the New Zealand Society of Animal Production in 1996.

As outlined in this citation Dr Marc Ulyatt's contribution to animal production in New Zealand and to agricultural research in its widest sense has been substantive and influential and in recognition of this service we accord him Honorary Life Membership of the New Zealand Society of Animal Production.

Julian Lee