

## THE McMEEKAN MEMORIAL AWARD

### K.P. McNatty

Dr Kenneth Patrick McNatty is an unassuming scientist who has made an outstanding research and leadership contribution to animal science and to the further development of animal production in New Zealand over the last 5 years. While he has led a very productive research team at Wallaceville, he has been sought out by numerous other researchers and science administrators for assistance in assessing research approaches and directions. He has an ongoing role in this work as National Science Area Leader for MAF Technology's Animal Physiology Research Programme. His contributions are well thought out and considered, and his underlying philosophy of understanding why and how something happens is always of major concern. Through all this, the person whose work is being analysed and challenged is never threatened. This part of his character is one of the features that has made Ken McNatty an outstanding research leader. Ken is also a particularly gifted teacher with the ability to explain complex physiological mechanisms in easily understood terms without ever being condescending. His presentations at seminars and conferences are always of the highest standard.

Ken McNatty's background explains his drive to understand the basic mechanisms which operate to make an animal productive in the farming sense. While doing his PhD on the maturation of the ovarian follicle in the human with Roger Short at Edinburgh in the early 1970s, Ken realised that progress in the understanding of animal reproduction was a hit-and-miss affair. In contrast, the very limited amount of human research material meant that experiments with human tissue were far better planned. Ken, on his return to Wallaceville in 1975, sought to bring this discipline into his work on reproductive physiology of the domestic species. However, his direct contribution to NZ research was delayed by 18 months on a Harkness Fellowship at Harvard working on culture of human ova, and by a year in the Netherlands, where he held the highly prestigious Boerhaave Chair of Reproductive Biology at the University of Lieden. There he studied follicle development in women during the luteal phase of the oestrous cycle.

Since 1981, Ken McNatty's Reproductive Physiology Group has focused on seeking a better understanding of the control of ovulation and ovulation rate in domestic species. Much of this work uses the Booroola, with its major gene for ovulation rate as a model. He sees the Booroola as a superb experimental model to answer the question of why sheep ovulate one, three or five eggs. Ken has also been concerned with the question of why a ewe ovulates one or two eggs - interestingly the hypotheses for this work arose from his studies in Lieden. It is this broad background knowledge and experience which has contributed greatly to Ken's success. During the past year Ken's research interest has extended to the development of the foetal gonad, where he has made steady progress in explaining the mechanism causing the streak ovary condition in homozygous Inverdale sheep. His recent foetal studies have also produced new evidence that the effect of the Booroola gene on ovulation rate may be a consequence of a more general effect on growth and development.

Ken McNatty has an outstanding international reputation which is reflected in invitations to address numerous international conferences over the past few years and in his position as

advisor to the World Health Organisation on reproduction research programmes. His impressive list of awards and speaking invitations, his publication record and membership on editorial boards of international journals provide ample testimony to the extent and quality of his work on basic mammalian reproductive physiology. The practical implications of this work are now being realised, and in the next decade, are likely to have a considerable impact on practical animal production in New Zealand. In this respect, the commercial success of Ovagen, the purified ovine pituitary FSH following its launch in early 1988, is due to a very effective partnership between Ken's research group and the commercial company, ICP. Ken has been closely involved at all stages from the development of novel *in vitro* bioassay systems through to field evaluation.

Throughout the turmoil during recent years in the funding and management of science there has been no doubt where Ken McNatty stood. He has always recognised and supported excellence in science, and has been quick to point out where MAF's commercial interests have been directly counter-productive to its strategic research programme. Ken has also made valuable contributions to a number of MAF committees looking at specific research areas and approaches to research.

He has recognised the important role of the NZ Animal Production Society as a forum representing many different interests in animal production, and has supported it through his contributions in 7 papers over the last 6 conferences. Dr Ken McNatty is truly a worthy recipient of the McMeekan Memorial Award on the strength of his outstanding contribution to animal research in NZ.

G.H. Davis  
P.F. Fennessy

*In reply to this citation Ken McNatty acknowledged three people who had a major impact on his scientific career by creating opportunities and influencing the way he undertook and resolved scientific problems. The first person he acknowledged was a former Director of the Wallaceville Animal Research Centre, Dr Wally TePunga, who encouraged and supported Ken to pursue his PhD and postdoctoral studies in Edinburgh and Boston respectively. On Ken's return to Wallaceville, Wally continued to strongly support his research in reproductive biology. He also acknowledged the help, encouragement and collaboration of Dr Hannah Peters, formerly of the Finsen Institute, Copenhagen, Denmark. Ken met Hannah at an ovarian workshop in Glasgow in 1975. Her concepts of ovarian function and her interest in combining her knowledge of ovarian morphology with Ken's interest in the functional aspects of ovarian activity led to co-authorship of a textbook on the ovary in 1980. This collaboration was important to Ken because it made him realise that it was possible to undertake basic research in New Zealand and remain internationally competitive. Hannah Peters this year at the age of 80 years receives the Marshall medal, the highest award granted by the Society for the Study of Reproduction and Fertility in the United Kingdom. Finally, Ken acknowledged the help and inspiration of the late Dr Griff Ross, former Clinical Director and Assistant Chief of Reproduction Research at the National Institute of Child Health and Human Development, Bethesda USA. Griff became excited about Ken's research in the mid 1970's which showed that despite all ovarian follicles receiving the same hormonal signals from the bloodstream, the*

*microenvironment of individual follicles was unique at any moment in time. Griff encouraged Ken to visit and work in the USA and nominated him for state-of-the-art lectures on ovarian function to the American Endocrine Society and ovarian workshop meetings in 1978 and 1979. He also encouraged him to write review articles. In 1980 when Griff's health deteriorated to the point where he was unable to travel, Ken was nominated*

*to replace him as the visiting Boerhaave Professor to the University of Leiden, The Netherlands; the place where Regnier de Graaf first discovered the ovarian follicle. In ending these acknowledgements Ken also expressed his sincere gratitude to George Davis for his kind works preceding the McMeekan Award.*