McMEEKAN MEMORIAL AWARD FOR OUTSTANDING SERVICES TO AGRICULTURE

George Davis

It's with very great pleasure that I introduce George Henry Davis as the recipient of the McMeekan Memorial Award for outstanding services to agriculture.

George was a student at Waitaki Boys College, and later a graduate of Lincoln College with a B.Ag.Science and M.Ag.Science with Honours. He is currently Leader of the AgResearch Genes Programme at the Invermay Research Centre. Over the years George has received many fellowships or scholarships for studies in agriculture such as Department of Agriculture Study Award, NZ Wool Board Scholarship, Trimble Fellowship on two occasions and awards also from the NZ Booroola Sheep Society, CRT and Underwood Trust. He is a member of the NZ Society of Animal Production, NZ Institute of Agriculture Science, the US Society for the Study of Reproduction and the Australian Association of Animal Breeding and Genetics.

George is a regular contributor to the annual meeting of the NZ Society of Animal Production and has a publication list which now exceeds 100 papers. I think he would describe his interests to include stud sheep breeding, cricket, photography, current affairs and the church.

Most of you will know George but I regard him as an extremely modest person, a person of great integrity and with a devastating sense of humour. He is also an extremely helpful person. On many occasions he has gone out of his way to fully assist our research programme wherever possible and I owe him a great deal for that. I'm sure he will be greatly embarrassed by these remarks.

In my opinion, history will judge George Davis as one of the pioneers of the currently emerging new technologies in agriculture where animals will be selected for subsequent productivity traits from a laboratory-based genetic diagnosis. As you are aware, George is the discoverer of the Inverdale X-linked fecundity gene and that he has contributed more than anyone else to the breeding, international supply and pioneering research on the Booroola fecundity gene. His work on Booroola was a motivating force which led to the formation of the AgResearch Molecular Biology Unit in Dunedin and his work has been the basis for the physiology and gene expression research on major genes by the Reproductive Biology Unit at Wallaceville. The recent publication in Nature by Grant Montgomery and his colleagues of microsatellite markers with linkage to the Booroola phenotype is a major step forward in demonstrating the value and power of molecular genetics to animal production. NZ has a significant international profile in this research and we are acknowledging George's contribution which has been responsible for this.

The history of the discovery of the Inverdale gene is a remarkable story and will be included as part of a publication sponsored by this Society. The finding of an X-chromosome-linked mutation in Romney sheep which can either cause increased prolificacy or infertility is an extraordinary one. Inverdales with two copies of the X-linked mutation are infertile and some animals appear to develop ovarian tumours. These animals are now of great value in the search for sterility agents to inhibit reproduction in wild-life pests (e.g. possum) and also for ovarian cancer research. Inverdales with one copy of the X-linked mutation are unique in that these animals produce more growing ovarian follicles than other sheep breeds and this is the reason why they are more prolific. Collectively these animals have enormous value for better understanding the control of fecundity.

Before I finish I want to briefly describe the occasion when George discovered the Inverdale gene as seen through the eyes of Doug Lang. I think it's a great story - because it shows how the inventiveness of an individual can triumph using very primitive facilities.

The 'Inverdale' gene was discovered in a woolshed in Tuatapere. The woolshed can best be described as a hybrid between a dog kennel and a whare. For some reason it had survived the continual onslaught of south westerlies which swoop through the bay and which force the trees to turn at right angles from the ground the day they reach 20ft high.

Using the laparoscope to determine ovulation rate, we worked randomly through the mobs of sheep and filled in the data sheets in a kind of slow motion lotto. By lunch-time jaws were grimly set as the numbers appeared to be screw-balled. Too many double ovulations in the controls and not enough in the other mobs - it looked like mother nature or Murphy was in full control.

For the rest of the day we worked through the remaining mobs filling in the squares and then we handed the results to George. He took out his calculator and perched on the edge of the shearing board while the rest of us cleaned up.

After a while and without much noise or body language, George raised his bent and weary body, took 5 or was it 7, steps over to us and said "I think we got something" - and Inverdale was born. This quiet beginning has led us collectively on an amazing voyage of discovery and we are still on the journey.

I believe if George were to stop his research tomorrow – the impact of his contributions will continue to impact on the agricultural industry for many decades to come.

George Davis you are a worthy recipient of this award and on behalf of us all — congratulations.

K.P. McNatty