

Contributions by veterinarians in developing the Mules operation for control of breech flystrike in sheep

JWH Mules was an Australian stockman, who had been an overseer at Clare in South Australia, A cattle stockman at Cooper Creek, Queensland, a property owner in central New South Wales then in Queensland where he was victim of the 1914 drought. He returned to South Australia as a property manager and was able eventually to acquire a small property where he reared Peppin Merinos for stud. He experimented with a method of strike control that involve surgically removing excess wrinkles from the crutch. Essentially, he clamped Burdizzo[®] castrating pincers over the breech wrinkles and cut off the clamped wrinkles with a knife so that urine 'scalding' is avoided. In 1931, HR Seddon, HG Belschner and CR Mulhearn of the Glenfield Veterinary Research Station in New South Wales published on work on a long-term approach to control of flystrike based on selection of plain-bodied sheep. This publication caused Mules to write to the *Adelaide Advertiser* on 16 June 1931, saying that he had discovered a solution to the problem of flystrike in ewes and offered to treat susceptible ewes.

Sir Charles Martin, Head of the Division of Animal Nutrition of the Council for Scientific and Industrial Research in Adelaide, and LB Bull of the Laboratory of Pathology and Bacteriology at Adelaide Hospital, visited Mules who demonstrated his method and showed the visitors some sheep that had been operated upon some time previously. In a report published later that year, Bull described the demonstration and his observations on dermatitis of the excised folds of skin, and discussed the work of Seddon and his colleagues in relation to factors attracting blowflies. He concluded that Mules had shown the effectiveness of his method on his own flock and that those who hesitated to alter their breeding methods to eliminate wrinkles may adopt the method.

Few graziers adopted the method. many were repelled by the apparent cruelty and the crudity of the surgery. Others considered that it would militate against breeding for plain-bodied sheep. Mules' method appeared impracticable on stations marking many thousands of lambs in a period of 2–3 weeks. Moreover, evidence of the value of mulesing and its place in flock management was lacking, and jetting seemed a more promising method of control.

In 1933, Seddon and his colleagues operated on 100 lambs and reported that during the first and second years after the operation, about 75% and 50% less strike occurred in the treated sheep than in untreated sheep. In 1934, WIB Beveridge was seconded by CSIR to the Australian Pastoral Company, Noondoo, Queensland, and prevailed upon the manager of the company to invite Mules to demonstrate his operation. In 1935 at lamb marking at Noondoo, Mules and other operators treated 6844 lambs with Rolcut[®] secateurs, which made the operation as rapid as castration of male lambs. A similar number of lambs were untreated. Beveridge reported that the operation provided a cheap and practical method of removing wrinkles, that loss of blood was very small, well-being of the lambs was not noticed to be affected, and the wounds healed well. Wrinkles were not seen to have developed again in the treated sheep when examined six months later. However, ten months after the operation, NPH Graham examined a sample of the total and found that 20% of the treated sheep had been

struck, compared with 25% of untreated sheep. Beveridge urged CSIR to give the operation the attention it deserved and IM Mackerras, who was in charge of CSIR research on blowfly strike, promptly visited Noondoo. Consequently several trials were arranged including further trials by Seddon, Belschner and WL Hindmarsh, and later by FHW Morley. While, for various reasons, including lack of strikes or of records, some trials were not satisfactory from an experimental point of view, the operation was shown to be practicable and effective and was gradually adopted.

A trial in 1937 by DA Gill and Graham showed the need for a more extensive operation – the Modified Mules Operation – that removed all breech folds that could become stained with urine. This trial also showed the importance of the length of the docked tail. About the same time, Graham visited South Australia and found that most graziers who mulesed sheep were using short-bladed "dagging" shears. Graham publicised the change, which was widely adopted.

About 1940, LL Manchester of Charleville, Queensland, patented an alternative method that he claimed was as successful as mulesing in preventing breech strike. A caustic preparation that was applied in the crutch area destroyed the wool-producing follicles in the treated area. While the result was similar to the Mules operation, the operation was drastic and time-consuming, caustic seeped and damaged adjacent areas, and the period of healing was extended. This chemical treatment was discarded for practical reasons.

Throughout the 1940s, hundreds of demonstrations of the modified Mules operation, selection of plain-bodied sheep and improved jetting techniques were conducted in New South Wales and in Queensland. That the operation was adopted more widely in Queensland was due to the work of GR Moule.

Although the Mules operation was taken up by graziers, the sheep studs were reluctant to do so as they felt it might disguise wrinkly sheep for selection purposes. Mr Bill Sutton at Bundemar stud, who was one of the first to adopt it, began using the modified mules operation plus a tail operation, but a low rate of strike persisted. Sutton then removed more skin over the tail and also the skin between the tail and crutch operations. The Radical Mules Operation, as this method became known, gave almost complete protection against strike and has been widely adopted despite being a longer operation with slower healing. However, despite abundant information, and the attempts by extension workers to inform, train and aid farmers in applying a technique that could scarcely be more simple, cheap or effective, levels of adoption remained below potential.

While contribution by veterinarians in developing the Mules operation were considerable, full credit should be given to the originator of the operation and to the unknown grazier who thought of using short-bladed "dagging" shears. Beveridge has pointed out that he has received that rare honour of having his name adopted into the language as a word written without a capital letter.

References

Beveridge WIB Prevention of blowfly strike by surgical measures. *Aust Vet J* 1935;11:97-104.

Bull LB Some observations on dermatitis of the folds in the breech of sheep and its possible relationship to blowfly strike. *Aust Vet J* 1931;7:143-148.

Morley FHW & Johnstone IL. Mules operation, a review of development and adoption.

Department of Agriculture of NSW, Second National Symposium on Sheep Blowfly and Flystrike in sheep. 1983. pp 3-24.

Schedvin CB *Shaping science and industry, a history of Australia's Council for CSIR 1926-1949*. Allen & Unwin, Sydney. 1989. pp 157-158.

AN Sinclair

March 2002