

FACE COVER AND FERTILITY

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Summary

A regression of face cover on lambs born was calculated in 2 groups each of 400 aged Merino and Corriedale ewes. There was a slight trend ($P < 0.1$) towards fewer lambs born per ewe mated with increasing face cover in the Corriedales where face cover was high, but no relationship in the Merinos with relatively open faces. There were 139 per cent. lambs born in the Corriedales compared to 129 per cent. in the Merinos.

I. INTRODUCTION

Fertility, or number of lambs born and marked, is an essential feature in the genetic improvement of a flock of sheep. High fertility is necessary to achieve adequate selection, with a short generation interval to give rapid genetic change (Turner 1955).

Open-faced Rambouillets produced 9 lb more lamb per year (Terrill and Hazel 1955), and superior lambs were obtained from open-faced Shropshires (Carman and Williams 1957). From open-faced Corriedale, Romney Marsh, and Southdown ewes 10 to 30 per cent. more lambs were dropped and 23 per cent. higher production was obtained (Coop 1956; Inkster 1955; Cockram 1960).

Peppin Merinos with high face cover had a lowering of body weight and vigour (Fail and Dun 1959), but they reported Morley as recommending only moderate culling against face cover because of a possible lowering in rate of improvement in fleece weight.

The effect of face cover must be considered first within a flock (Inkster 1959). Covered-face ewes with high fertility reared more lambs than open-faced ewes in a low fertility flock. Schinckel (personal communication) has confirmed this in Havilah fine-woolled covered-face Merinos.

The heritability of face cover is high (0.39 to 0.56) in Rambouillet, Corriedale, Targhee, and Columbia ewes (Terrill and Hazel 1945).

II. EXPERIMENTAL

Observations have been made on sheep currently involved in a Hybrid Vigour experiment. This is being conducted at "Beaufront," Ross, in Tasmania, and has been planned by Miss Turner of the C.S.I.R.O. Four hundred Merinos and 400 Corriedale ewes are run together, except at mating. These ewes, being $5\frac{1}{2}$ years of age, should be at the peak of their fertility (Turner 1955).

Face cover scores have been recorded and related to number of lambs born in the first year of the experiment. The regressions between number of lambs born and face cover have been weighted according to the number of observations in each of the classes.

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III. RESULTS AND DISCUSSION

Frequency distribution of face cover scores are shown in Fig. 1. For Merinos the distribution is bell-shaped with characteristic low frequencies in the extreme

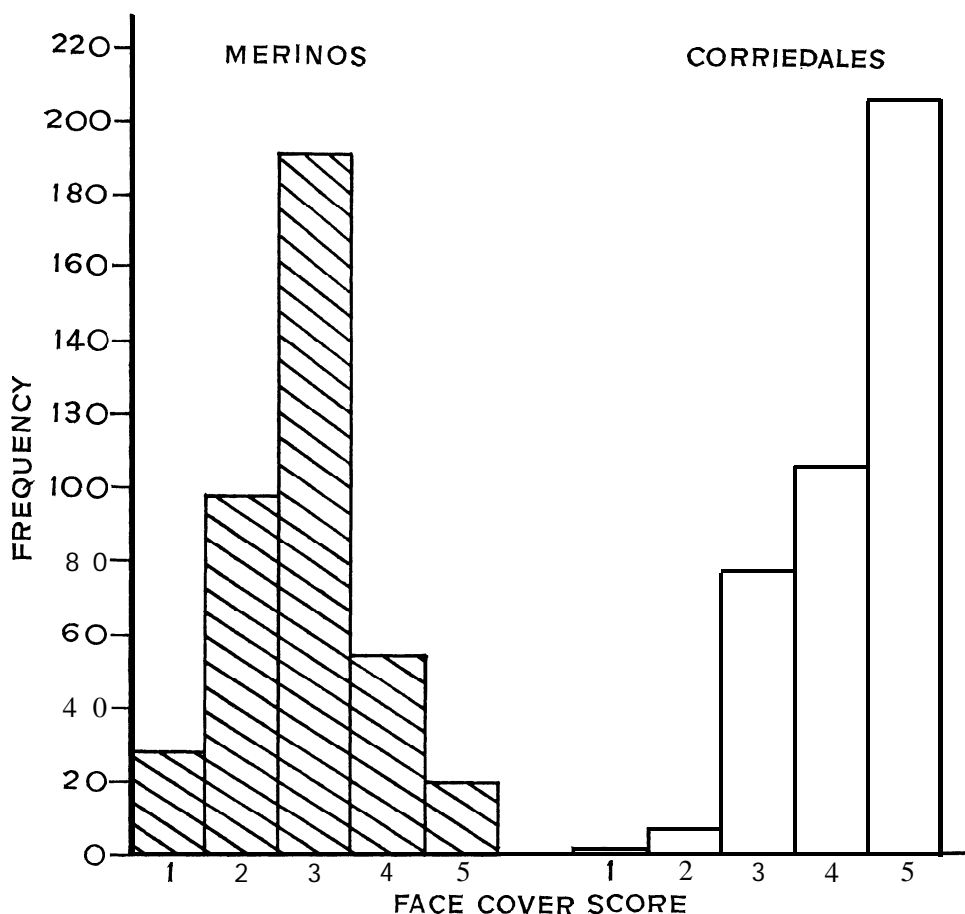


Fig. 1—Frequency distribution of face cover in Merinos and Corriedales.

classes. For Corriedales, however, the highest frequency is the mode, using this system of classification. Thus among the Merinos there were very few ewes with a face cover score of 4 or 5 (covered faces), whereas among the Corriedales few ewes indeed had face scores of 1 or 2 (open faces).

Fig. 2 shows the mean number of lambs born for each face cover class in the two breeds represented. Analysis showed that the negative relationship between face cover scores and numbers of lambs born was not significant. However, the trend ($P < 0.1$) in the Corriedales towards fewer lambs as faces became more covered was interesting, ewes with scores of 4 and 5 producing 11 per cent. fewer lambs than those with open faces (scores of 2 and 3). Furthermore, Corriedale ewes produced more lambs than did Merino ewes; the percentage even for Corriedales with a score of 5 was 139 as compared with 129 for the relatively open-faced Merinos.

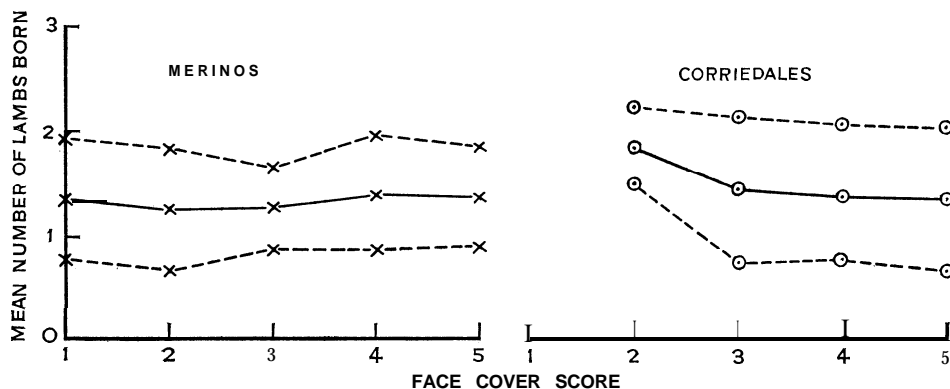


Fig. 2.—Relationship between numbers of lambs born and face cover in Merinos and Corriedales. Solid lines represent the mean numbers of lambs for each face cover score, dotted lines represent the 95 per cent. fiducial limits.

The ewes were all near the peak of their fertility (lambling percentages of 139 and 129 for the Corriedales and Merinos respectively), and both groups were mated in March, near the peak of the breeding season; the two factors could have masked the effects of face cover.

IV. ACKNOWLEDGEMENT

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