

PRELIMINARY OBSERVATIONS ON SEASONAL CHANGES IN THE FLEECES OF UNSHORN MERINO SHEEP

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Summary

Fibre shedding is being studied in monthly skin samples from two sheep shorn annually, and two sheep left unshorn. The incidence of shedding is very low, but may possibly be greatest in spring. Twenty monthly samples have been examined, and the unshorn sheep have missed shearing twice, but these have not shed more, nor reduced their wool growth rate.

I. INTRODUCTION

This investigation was designed first to show the effect of leaving Merino sheep unshorn, in particular to determine whether the extra length of wool grown will act as a stimulus for fibre shedding; and, second, to gain information (from the shorn control sheep) of the normal incidence of fibre shedding in the Merino. The investigation follows previous work on the incidence of shedding in British breeds (Ryder 1957), and on moulting in the wild Mouflon sheep (Ryder 1960). Since the investigation commenced, Lyne (1961) has published observations on the incidence of shedding in the Merino, and Margolena (1960) has failed to find any shedding in spring and autumn samples from the Rambouillet.

II. METHODS

Four fine-woolled ewes were selected in March 1960. Sheep 4 (5 years old) and sheep 10 (4 years old) have been kept as controls and shorn annually. Two more ewes, 69 and 92, two years old, were obtained with about six months growth of wool. These have been left unshorn as the experimental sheep. All the ewes, except 92, have borne a lamb in the springs of 1960 and 1961.

Monthly skin and wool samples are being taken, and the approximate staple length is being measured each month. The skin samples are being sectioned both horizontally and vertically, and examined for follicles showing fibre shedding.

III. RESULTS AND DISCUSSION

Table 1 shows the length of wool grown before, and since, the observations began. It is clear that the sheep were initially producing wool at different rates, and they have continued at the same individual rates. Sheep 10 seems to be the greatest producer; sheep 4 and 69 seem to be comparable, and unshorn sheep 69 has not shown any reduction in rate of growth. However, the rate of growth in sheep 92, the other unshorn sheep, seems to be slowing slightly, in that there were negligible increments during the four months ending with October 1961, the last sample before the time of writing.

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TABLE 1

STAPLE LENGTH (MM)

	April 1960	February 1961	October 1961	Total
Sheep 4	80	70	50	120
Sheep 10	97	80	65	145
Sheep 69	40	110 — 40 = 70	160 — 110 = 50	120
Sheep 92	35	95 — 35 = 60	130 — 95 = 35	95

(100 mm = approximately 4 in)

TABLE 2

INCIDENCE OF SHEDDING

	Shorn		Unshorn	
	Sheep 4	Sheep 10	Sheep 69	Sheep 92
March 1960	—	+	+	+
April	—			
May	—	+	+	
June			—	
July		—	—	—
August	+	+		+
September	+	—	+	+
October	+	—	+	+
November		+	+	+
December	+	+	+	+
January 1961	—	+	+	—
February		+	—	—
March	+	+	+	
April				—
May		—		—
June		+	+	+
July	+	—	—	—
August			—	
September				—
October	+	+	+	—
No. of months with shedding:	8	10	10	7

Table 2 shows the times at which fibre shedding occurred. Owing to the difficulty of determining the incidence of shedding, which is extremely low, as found by Lyne (1961), only the presence or absence of shedding has so far been recorded. Lyne (1961) apparently noted only empty follicles, but in the present study, brush ends, empty follicles (distinguished by their collapsed lumen, and changes in the sheaths), and regrowing fibres, i.e., any stage of shedding, have

been recorded. Even so, the incidence is apparently lower than that found by Lyne. In no sample were more than a few shedding follicles found, i.e., an incidence of far less than 1 per cent. This makes it difficult to give an exact figure for the incidence, compared with that in British breeds, in which a definite proportion, usually greater than 1 per cent. of follicles shedding, is found. It is intended to adopt Lyne's scoring system as the investigation proceeds. A monthly shedding incidence of less than 1 per cent. indicates that each individual follicle has a growing phase greater than eight years.

Although Lyne claims to have found no seasonal trends, his graphs show peaks in spring and autumn. So far, in the present study, the greatest amount of shedding has occurred from late winter (August) to early autumn (March), with some variation between sheep in the months that shedding occurred. British breeds and the wild sheep shed most in late winter, with a smaller peak in late summer. The present work suggests a similar pattern. The shedding that took place in other months was also observed in British breeds, and in the Mouflon, in which quantitative work showed it to be insignificant.

IV. REFERENCES

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