

may produce only one lamb or none. Only under proper feeding and management can she produce the two lambs. Further, feeding affects the fertility of sheep—*i.e.*, their ability to produce living, healthy offspring, which, alas, often differs substantially from their fecundity. The number of lambs to be produced is determined at the time of mating, and subsequent feeding does not affect this number, but it may greatly affect how many of the total lambs produced are live and healthy lambs.

Apart altogether from diseases and disorders of sheep, feeding may influence the production of fat lambs and of wool. That the direct influence of feeding in fat-lamb production may be substantial has been indicated strikingly by work of Canterbury Agricultural College. In this work it was found that a difference in feeding not especially great was correlated with a difference in the weights of lambs at birth. The lambs of one mob averaged 9.7 lb. whereas those of another mob not fed so well averaged 7.7 lb. The true significance of this difference is shown from the relationship between the weight at birth of lambs and their subsequent development. In the work under consideration, lambs 6 lb. to 7 lb. weight at birth made an average increase in live-weight equivalent to 20 lb. in fifty days, while lambs of 9 lb. to 10 lb. and lambs of over 13 lb. live-weight at birth made increases of 26 lb. and 32 lb. respectively. Expressed in another way the largest lambs grew 60 per cent. more rapidly and the lambs intermediate in size 30 per cent. more rapidly than the smallest at birth of the lambs being considered. In conjunction with this should be taken into account the further fact that increased rapidity in growth begets economy in the quantity of feed consumed. This is rather well illustrated by the following data which make clear the contrast between the position relative to lambs light at birth and that relative to lambs heavy at birth: only two out of every five of the light lambs were fattened by 1st March, and only one out of ten was fattened off the mother, while all the lambs heavy at birth were fattened by 1st March, and two out of every three of them were fattened off the mother.

The foregoing statements form a serious indictment of inadequate feeding in sheep-farming; in short, an attempt has been made to indicate that poor feeding frequently is connected causally with diseases and disorders in the flocks, and that, apart from this, parsimony in feeding brings about readily a low standard of efficiency in the conversion of feed into flesh.

All this leads up to the matter of outstanding importance: in sheep-farming a weakness that is both widespread and grave generally rather than slight is poor feeding of the flocks in winter and early spring. The weakness probably would be lessened rapidly if it were more spectacular. But it does not altogether "strike the eye"; it is an insidious rather than an open weakness; typically it results in a somewhat heavier mortality in ewes, a decrease in twin births, an increase in lambs dead at or shortly after birth, a heavier consumption of feed to reach slaughter stage of lambs, and a bigger "tail-end" of lambs requiring feeding on rape or other special crop. Possibly no one of these by itself is really serious, but, taken together, they may have an influence great enough to make the difference between success and failure.

#### **Current Measures to strengthen Feed Position in Winter and Spring.**

The practical question of current importance is what may now be done towards remedying the common weakness. Foremost of the measures suitable for this purpose is phosphatic top-dressing in late summer or autumn.

*Top-dressing.*—Phosphatic top-dressing has been found to give results financially attractive on sheep-farms over a wide range of conditions of