

Partly to determine the usefulness of twins for experimental purposes, and partly to measure the heritability of various characters, the variability of the twins when reared under the same environmental conditions is being measured for all characters likely to be of importance in cattle work.

To this end changes in weight and body measurements are being noted at frequent intervals; colour pattern, whorls, hair colour, escutcheon shape, and other external characters are being recorded; physiological measurements, such as rate of respiration, body temperature, red cell count, red cell volume, hæmoglobin content, red cell size, blood mineral, and sugar and ketone status, are being made. Very promising results are being obtained, but conclusions must await full statistical analysis. During the coming season as much data as possible on milk secretion will be similarly collected and analysed. In particular, it is aimed to measure milk yield, milk composition and fat yield, rate of milking, ease of milking, milk ejection curve, stripping, length of lactation, and shape of lactation curve as data of major interest in production experiments. Reproductive data on female twins have also been accumulated.

A pair of thirteen-year-old Shorthorn cross identical twin cows has been slaughtered and measurements of all internal organs recorded. The carcasses are being held in cold store for dissection and examination of the muscle, bone, and fat situation.

DAIRY COW NUTRITION

Nutrition of Calves.—The experiments on the grazing management of calves in relation to growth and thrift have now reached the stage where they can be discontinued in their present form. Six years' results of rotational versus set grazing techniques now available leave no doubt as to the superiority of the rotational system. The final checked figures for live-weight for comparable groups are as follows :—

Year.			Rotational.		Set-stocked.		Difference.
			Number.	Weight.	Number.	Weight.	
				lb.		lb.	lb.
1940-41	..	..	16	416	16	354	62
1941-42	..	..	16	423	16	360	63
1942-43	..	..	11	439	10	374	65
1943-44	..	..	25	385	26	334	51
1944-45	..	..	28	405	33	279	126
1945-46	..	..	21	332	22	262	70

All weights as at 31st March.

For the first four years the grazing differences were introduced at weaning-time. For the last two years they became effective one month from birth. This accounts for the increased difference in 1944-45. The drought conditions were undoubtedly responsible for the lower weights during the present season. It is of interest to note, however, that, despite this, the difference between the two groups was considerable.

Nutrition of Yearlings.—While previous work has indicated that the better growth obtained by rotational grazing of calves prior to the winter results in better-grown yearlings and two-year-olds and eliminates the death-rate during the winter, the normal practice in the past has been to winter both lots of calves from May onward under a rotational system. A preliminary experiment during 1944-45 continued the two treatments right throughout the winter. Set-stocked calves suffered a mortality of 50 per cent. and the