to that used in separating would have been less. If we neglect the energy consumed in speeding-up, the consumption of electricity per 100 gallons of whey separated works out at 0·431 unit, or, including the energy consumed in speeding-up, 0·578 unit.

In a second test 200 gallons of whey were pumped into the separator-vat, and it was found that the time occupied in separating this quantity was 18 minutes, and the consumption of electricity 0·72 unit, or 0·36 unit per 100 gallons. This does not include energy used in speeding-up.

In a third test two separators were driven by steam and one by electricity. It is assumed that the one driven electrically separated one-third of the day's total quantity of whey, which was 2,850 gallons. The total consumption of electricity, including speeding-up, was 5·08 units, or 0·53 unit per 100 gallons of whey separated. From the foregoing test the average consumption of electricity for 100 gallons of whey separated, including speeding-up, works out at 0·554 unit. Taking the last season's whey at 722,188 gallons, the consumption of electricity for separating during the nine and a half months that the factory was open would have been 4,000 units, which would have cost £33 15s. The consumption of coal chargeable to separating for that period was not less than 60·18 tons, costing £93 5s. 6d. The saving in favour of electricity is thus £59 10s. 6d., or 63·8 per cent.

ADDENDA.

On 30th May, towards the close of the season, when the supply of milk had reduced sufficiently to allow all the whey to be skimmed by one separator, the following results were obtained in a steam test using Mataura lignite (which is delivered into the bunker for 14s. 9d. per ton) for fuel.

Whey separated, 793 gallons; fuel consumed, 3½ cwt.; cost, 2s. 7d. Cost per 100 gallons of whey separated, 3·9d.

In an electric test made on 2nd June, when all the whey was skimmed by the same single separator but driven by electricity, the following results were obtained: Whey separated, 922 gallons; electricity consumed, 4·38 units; cost (estimated on probable season's consumption), 8·88d. Consumption per 100 gallons of whey separated, 0·475 unit. Estimated cost per 100 gallons of whey separated, 1d.

It will be seen that the consumption of electricity in this test is 0·079 unit per 100 gallons of whey separated less than in previous tests. This is probably due to better adjustment of the driving-apparatus. It will also be seen that the cost by steam was 0·8d. higher per 100 gallons of whey separated than in the previous test. This is due to the inherent inefficiency of collective driving, which becomes more apparent when a factory is working at part capacity. In this case only one out of three separators was in operation. The higher cost also suggests that, although the fuel being used was less than half the price of that used in the earlier test, the increased amount required renders it less economical.

It must be remembered that this is the saving in the fuel bill alone if only the separators were driven electrically. If the rest of the machinery were driven electrically the percentage of saving would