

able products ; and, secondly, to produce manures for the land.

49. There are two ways in which this vegetable matter is added to the land as manure. When sheep and other stock are fed with it upon the land, the excrement of these animals conveys to the soil those portions of their food which have not been added to their bodies, or used in the support of their warmth. This excrement **returns to the soil** very valuable **inorganic and organic matter** which the plant had **originally drawn from the soil**, and so far as these matters are restored to the land, so far its exhaustion is checked. In the table already given (41) you have seen how largely crops of turnips—which are usually fed on the land—draw upon the soil in their growth ; if therefore you return this matter to the soil, from a chemical point of view, you render it almost as capable of producing another growth as it had previously been.

50. In the form of **farm-yard manure** another large portion of this vegetable matter finds its way back to the land. The course of operation is not as simple in this case, for whilst in the former instance the manure became quickly intermingled with the soil, in this case it has to be preserved until it can be carted to the land. In the necessary treatment which this manure has to undergo there is a great **liability to loss**.

51. The production and management of farm-yard manure are based upon certain principles which are easily understood, and with these you will readily become familiar. This manure consists of the straw, or other litter or bedding for the stock, and of the excrements the stock may produce. It is well known that the excrement of the different kinds of stock kept upon a farm varies very considerably. That from horses ferments rapidly and gets very hot, that from cattle is slow to ferment and is consequently a cool