

expensive work, but there is no farm operation that pays better in the long run. Wherever needed and funds permit, our farmers have been urged to put in drains.

TILLAGE.—The soil of our fields naturally settles down and runs together into a more or less compact mass, due largely to rains, and it is thus rendered unfavourable for seed germination and the easy extension of the root system of the crop. This condition must be ameliorated by ploughing, sub-soiling, the use of the disc, spring tooth and smoothing harrows and the roller. By these implements the soil is opened up and reduced again to a fine condition; it is aerated and warmed and made capable of holding moisture in a form available for the crop nutrition, known technically as film water. A "fine" seed bed is half the battle and therefore the preparation of the soil is of paramount importance; as the crop grows it needs a due supply of moisture—for all the food that it takes in from the soil must be in the form of a solution—and it is good tillage and subsequent surface cultivation that conserves this necessary moisture.

These observations will have made it clear that the soil, in addition to supplying plant food, must form a comfortable means for the support of the plant, a comfortable home in which the crop can live and thrive. It must be well aerated, moist and warm. Tillage is a generic term to include all those mechanical operations that bring about this comfortable condition, commonly known as good tilth. We are fortunate in this country in having many excellent farm implements for the tilling of the soil, implements specially adapted for their particular work. In this connection we look hopefully in the near future to the perfection of the motor plough, which will enable the farmer not only to cheapen, extend and improve his tillage but to take better advantage of those short periods, altogether too short in some seasons, when the heavier soils are in the right condition for working, neither too wet nor too dry.

Drainage and good tillage mean time, labour and expense, but they are indispensable for maximum crop production; there is nothing we can add to the soil that can take the place of its thorough preparation.

FARM MANURES.

In the whole economy of farming there is no subject of greater, of more vital importance than that of manure and manuring. To-night we can only touch upon some of its more salient features.

Obviously the amount of plant food in the soil which is present in a more or less available form is a prime factor in determining crop yields; therefore in this campaign we are urging our farmers to take every rational, economic means to increase its store. To this end farm manures