plant food, but contain varying quantities of organic matter. The simple manures supply only one plant food substance and constitute what are generally known as the mineral fertilizers.

FARMYARD MANURE.

Farmyard manure is the most popular manure on the farm. Its action is three-fold: First, it supplies plant food: second, it supplies organic matter. The importance of which has been referred to in a previous paragraph: and, third, it possibly serves as the main source of supply for the re-seeding of the soil with those desirable organisms which bring about decay in the soil. The composition of farmyard manure will vary according to the kind of animals contributing to it, the quality of the food, and the nature and proportion of the material used as bedding.

In the ease of a full grown animal neither gaining nor losing in weight, a working horse for instance, the quantity of uitrogen and ash constituents voided in the manure will be nearly the same as that in the food consumed. In cases where the animal is increasing in size, is producing young, or furnishing wool or milk, the amount of nitrogen and ash constituents in the manure will be less than that in the food; that is, it will be in direct proportion to the quantity of these substances which has been converted into animal increase. Thus, with fattening cattle, sheep and with work horses more than 95 per cent. of the nitrogen and ash constituents in the food are voided in the manure. The pig retains a larger proportion of the nitrogen, but no more of the ash constituents. A milking eow retains a still larger proportion of the nitrogen and ash, but the best (yield) in animal increase is obtained in the case of a young calf, when 70 per cent. of the nitrogen eonsumed is built into new tissues of the body and only 30 per cent. exereted as manure.

The amount of nitrogen voided in the urine is always greater than the quantity contained in the solid excrement, and in the case of the fattening animals it may be three or four times as much. This will vary according to the diet. If the food is nitrogenous and easily digested a large proportion of the nitrogen will occur in the urine. If, on the other hand, the food is one imperfectly digested the nitrogen in the solid excrement may form a larger quantity. When horses are fed on poor hay the nitrogen in the solid excrement will somewhat exceed that eontained in the urine, but when grains or other eoncentrates are fed there will be a large excess of nitrogen in the urine.

The ash constituents are quite differently distributed in the solid excrement and urine. In the former is frequently found nearly all the phosphorie acid and a greater part of the lime and magnesia, while the urine contains a greater part of the potash. Horse urine is the exception to the above rule as it contains a rather notable amount of lime.

It is evident, then, that if the urine carries such a large proportion of the nitrogen and potash it should be carefully preserved. The simplest and easiest way to accomplish this is to use plenty of bedding in the stall. In city stables sawdust and other woody materials are frequently used, and if dried are good absorbents. In the country, straw is still the most common absorbent, but on many farms where peaty materials are plentiful it might be well to use some of these dried substances to aid in the absorption, and increase the amount of nitrogen in the manure.