

enter as food to plants, as lime, several phosphates and sulphates, all derived from the soil. *Vegetable* matter, either in a green or decomposed state, afford many substances required by the growing crops. Science has of late instructed practice in the use of many substances as manures, which were formerly neglected. Bones and woollen rags are slow in action; but their effects are visible through a series of crops; whereas guano, rape, nitrates of potash and soda, particularly the two latter, are mainly taken up, if the season be favorable to their rapid action by the first crop.

*Question 13.*—What is the best practicable mode of managing and applying farm-yard manure in this country, with special reference to its liquid portion?

*Answer.*—Barn-yard manure should as much as possible be kept from drenching rains, and made into compost heaps, to hasten its decomposition. The liquid portion, which contains so large a quantity of saline matter in solution, should be received into tanks, where it should be allowed to ferment, and afterwards applied to the land, or the manure heap, carefully keeping it from waste. When dung is applied, it should as soon as possible be ploughed in to prevent the loss of the ammonia, a highly fertilizing material.

*Question 14.*—State the *principles of breeding, feeding and housing of Live Stock*, in reference particularly to the climate and wants of Canada; with the names and characteristics of such breeds of horses, cattle, sheep and swine as are best suited thereto.

*Answer.*—The first object to be kept in view in breeding the domestic animals is their general improvement and adaptation to special wants. Hence animals should be chosen for that purpose, on both sides, possessing the desired characteristics suitable to the purpose or end sought for. It requires great skill and judgment, combined with much perseverance.

In rearing it is of the utmost importance to feed young animals particularly, in a regular and liberal manner, to house them warmly, yet care must be taken to have sufficient ventilation. Stock exposed to our severe winter cold, consume a large portion of the food given them in keeping up the heat of their bodies, instead of its being converted into flesh, milk, &c. In fattening, food should be given rich in nitrogenous compounds, containing oily matter: *e. g.* oilcake, Indian corn, &c.

Of the breeds of Horses, strength combined with action is a principal point for Canada. The Suffolk Punch is strong, compact and active, and generally well suited; while the Cleveland Bay, Clyde and crosses are much esteemed. In cattle the Durham or improved short horn, from its early maturity and great size, seems to be the favorite, while others prefer the Devon or Ayrshire, particularly for dairy purposes. In sheep the Leicester has hitherto been the favorite in Canada, possessing a good carcase and producing a heavy fleece; other breeds, as the Cotswolds, are beginning to attract attention. In some suitable localities the Downs are much valued. The breeds of Pigs are various, and the