

were therefore used with great profit. It is easy to understand why such good results followed their use. These lands had been used for feeding cows for many generations. Any herbage consumed by these cows would be robbed of its **phosphoric acid**, because the animal required a supply of phosphate of lime for the formation of milk, and for the growth of the young calf, and very little would be returned to the soil in the excrements. If we examine the composition of milk we find that there is 1 lb. of phosphate of lime in about 25 or 30 gallons of milk, and it may be fairly calculated that the annual demand upon the land for each cow is equal to 80 lbs. of bone. There was, therefore, a deficiency of phosphate of lime consequent upon this long-continued removal from the soil; and when bone was supplied, lands which had become almost valueless, suddenly became rich and luxuriant.

61. The use of bones was also extended to tillage land, and with equally satisfactory results. Large demands are made upon the soil for **phosphoric acid** (41) by its continued removal in corn crops, and by sheep and other live stock, and as these had caused a deficiency upon ploughed lands, like that we have already noticed upon the dairy pastures, similar benefits were gained by the application of bones. The use of bone thus became a settled practice, and was found to be highly remunerative.

62. The next step in the use of bone was its reduction to a fine condition, and it was in that form sold as **bone dust**, for although it was by no means as fine as dust, it received that name. The chief difference was the additional labour of grinding it smaller, so as to pass through a finer sieve, but the effect upon the land was marked by its more rapid action.

63. With a view of attaining still greater rapidity of action bones were frequently "**fermented.**" This was accomplished by putting half-inch bones into a heap,