

BONES AND PROGRESS.

We had just laid down Jethro Tull's refreshing volume, published in 1732; had been pondering over his condemnation of the use of dung for turnip crops; when a Lancashire subscriber wrote us—"If you would give in your columns the receipt for making superphosphate from bones, it would be most useful to your readers." Strange revolutions these in one century! Jethro Tull in 1730 telling us, "I have made many trials of fine dung, but I have for these several years last past left it off;" while in 1856, chiefly for root crops, the wide world is explored for manures. Startling facts these, for the farmers of the old school; cheering prospects for the modern experimental searchers after truth; and a ground for very useful reflections for all who are over-fond of theorising on agricultural practices. When Tull condemned the use of dung, and when his neighbours raised shouts of derision at his noble efforts, they were all about as wide of the truth as the fen-land farmer, who, at the close of one of Dr. Buckland's eloquent after-dinner addresses, at the Cambridgeshire meeting, exclaimed, with a voice that could have been heard across Bardolph Fen, "Aye, Doctor, it may be all true; but, by Gom, there's nothing like mook."

It has taken a long century to establish the truth of some of Tull's assertions—his drill husbandry—his deep ploughing—his complete cleansings and pulverisations; another, but we feel a much shorter interval, will make other general advances—will effect the still more general use of artificial manures, will bring forth yet more powerful land-cleaning and digging machines. The farmers of 1876 will, perchance, keep fewer farm-horses, raise more food for man; they may, it is more probable, talk with some compassion of the citizens of a past generation, who imported, at a great expense, from the other side of the globe, nitrogenous manures, whilst they poured huge quantities of a similar kind into their own rivers. The chairman of the country meeting of the Royal Agricultural Society in 1956 will, perhaps, talk of these things as of some old tale of the Druids—strange notions, not exactly comprehensible; he may enliven his speech by referring to the correspondent of a contemporary, who gravely denounced the then lately proposed use of oil of vitriol and bones as a wild scheme, only quite certain to "burn up the land."

But we have to answer the question of our subscriber as to the manufacture of superphosphate of lime from bones. The operation, supposing always that it is the farmer who wishes to make his own, is not very difficult (although we much doubt its economy, except the turnip growers despair of finding a trustworthy manufacturer). It consists in finely pulverising the bones, and then thoroughly mixing them in a leaden or earthen vessel with about 44 per cent. of their weight of *previously* diluted (with water) sulphuric acid. The analysis of boiled bones has been given by Professor Way, in the twelfth volume of the "Journal of the Royal Agricultural Society." He found in 100 parts of these—

Moisture.....	10 parts.	Phosphate of Lime.....	60 parts.
Animal Matter.....	16 "	Carbonate of Lime.....	11 "
Sand.....	3 "		
			100

The quantity of oil of vitriol required to convert the phosphate of 100 lbs. into bi-phosphate here will be

For the carbonate, 11 lbs; for the phosphate, 33 lbs.=44 lbs.

There are other impure varieties of phosphate of lime used in the making of bi-phosphate, such as bone charcoal, bone ash, guano, coprolites, &c., few of which are commonly available by the farmer; nor can he fairly hope to compete with even the honest manufacturer, in cheapness, since he neither has the machinery nor the chemical knowledge requisite to ensure purity in his materials; neither does he possess the advantage which the manufacturer possesses, in being the preparer of his own sulphuric acid. If, however, our subscriber wishes to become a manufacturer, he will find in the volume to which we have referred, most of the ordinary processes described.—*Mark Lane Express*.

TO BRAISE CHICKENS.—Bone the chickens, stuff them with forcemeat, place in the stewpan the bones and trimmings, lay the chickens upon them with a braise of fine herbs, onions, mace whole, some thin slices of bacon, about three parts of a pint of stock, or if that is not handy, water, and two glasses of sherry; the bacon should be added last. Cover close, and stew for two hours. Then take out the chickens, strain the braise, remove the fat, and boil the braise rapidly in a glaze; paint it over the chickens with a brush, while the braise is being boiled; brown the chickens before the fire, it adds to their appearance. When glazed, fowls may be braised in the same manner.