

In continuation of our remarks on the subject of the Use of Bone Manure, and in the hope of stimulating our farmers into the increased use of this and other valuable fertilisers, we now give condensed extracts from a work by Mr. Alfred Gibson, First Assistant in the Laboratory of the Royal Agricultural College at Cirencester, England. The book is entitled Agricultural Chemistry, and is simple and easily understood, and we would strongly recommend it to our readers as a valuable hand-book.

The author points out that farm-yard manure depends chiefly for its value on the presence of three or four essential materials, and that these are distributed through a bulk of comparatively useless substance, and that it is rendered additionally cumbrous by the large quantity of water it contains, amounting, in round numbers, to two-thirds. The question naturally occurs to us, why cannot we prepare these essential materials in a separate or concentrated form. For instance, we learn that the most valuable constituent of farm-yard manure is ammonia, but to get one pound of this substance we must take 137 lbs. of well rotted farm-yard manure. Again, phosphate of lime is a valuable constituent of dung, but 100 lbs. of dung contain only about 1 lb. of this substance. [Farm-yard manure as it is usually made in this country contains a much smaller proportion. It is only fattening cattle fed on what we would here consider very rich food that can possibly give the proportion of phosphate stated by Mr. Gibson.] Why cannot ammonia or phosphate of lime at once be taken and added to the soil? In reply to these questions it may be said that there is no reason whatever why we should not do this if we can do it economically; in fact this is exactly what we endeavour to do by making use of artificial manures. These substances may be regarded as the essential constituents of farm-yard manure in a concentrated form. At the same time it must be remembered that the less essential materials of farm-yard manure as soluble silica, magnesia, lime, &c., although less precious than the rarer substances above named, are yet necessary for the healthy growth of plants, and it is doubtful whether any artificial substance we could prepare in imitation of barn-yard manure, would answer as well in the soil since both the peculiar organic combination of its constituents and the mechanical form of barn-yard manure would be deficient. It was, however, in seeking replies to the above very natural questions that the value of so-called artificial manuring substances was discovered. As soon as scientific men had clearly made out what materials are required by plants for their growth, and in tracing the sources of these materials, had pointed out what were the more valuable constituents of manure, the no-

tion of adding these substances artificially, was readily conceived. The practice indeed was, to some extent, adopted before the principles on which they acted was understood. It was found in certain cases that the addition of some one substance to the land produced a better effect in certain cases than could be obtained from a farm-yard manure—a striking example of the power of a special manure, and the unconscious adoption of a scientific principle may be instanced in the pastures of certain parts of Cheshire.

As is well known, these meadows originally remarkable for their fertility and the richness of the cheese produced in this district, by continued pasturing became impaired and began to show symptoms of exhaustion, which could not be removed by the manure usually applied. It was found that the addition of bones to the soil produced the desired effect; the grass regained its accustomed sweetness and cheese-producing qualities. This restoration of the weakened pasture by the use of bones can now be easily explained, and will be adverted to in describing the composition of bone-dust.

In the same way other substances have been found in practice to benefit certain crops in a manner that could not be satisfactorily explained some years ago.

Whilst barn-yard manure contains all the fertilising elements required in the growth of plants, artificial manures on the contrary commonly contain but a few; often but one or two of these elements.

It follows, therefore, that those who have easy access to stable manure should avail themselves of it to the utmost, it is specially those to whom the cost of carriage comes heavy, or the saving of time and labour at seed time becomes specially important, that the artificial manures are of value. The two most important classes of artificial manures are respectively, the ammoniacal or nitrogenous, and the phosphatic. The first-class consists of those in which ammonia, or what is nearly the same thing, combined nitrogen, is the prevailing constituent; by means of these we can supply to plants any quantity of ammonia that seems desirable; they are chiefly used as top-dressings for urging the growth of corn crops in Spring. The second class, the phosphatic, are those in which phosphoric acid is the chief ingredient—to this class bone-dust and its product, superphosphate, belong, and to the composition of this substance we propose to devote another article.

#### EASTER BEEF.

On the 9th instant we weighed two pair of fine cattle—equally fat—but one larger than the other. The largest, fed by Mr. Longworth, turned the scales at 8464 lbs, and the other, by Messieurs Wm. & F. Sutherland, at 8284 lbs. The

heaviest ox of the former pair weighed 1750 lbs, and of the latter 1674 lbs. The first pair have gained 624 lbs since 18th July last—284 days. On the 12th Dec.—87 days ago—they weighed 3290 lbs, the subsequent gain being 174 lbs. On the 4th Dec.—8 days previously—the second pair weighed 3060 lbs, and in the meantime have also put on 174 lbs. Both pairs have done remarkably well, and would not make bad emigration agents for Nova Scotia at Smithfield.

While writing upon this subject, we may mention that our old friend Geo. C. Phillips, Esq., either believing that Truro will be surfeited with prime meat at Easter, or that some beef is too fat for this climate, has sold his celebrated, first prize ox for the Miramichi market. When we last saw the animal, he did not look much like tripping the light fantastic toe, so we hope the lucky purchaser, to get him home, will not follow the mode a Canadian Backwoods Farmer took to get his fat ox from Riviere du Loup to Quebec—tie him to the iron rail on the back of a railway car. In order to fill the vacuum produced in our meat market consequent on the departure of so much beef from the place, our enterprising townsman, James A. Leaman, has purchased the celebrated MARGESON HEIFER, said to be the fattest and finest animal in Nova Scotia. She will be exhibited at his stables between the 18th and 23rd of the month. In a future number we hope to be able to give both the live and dead weight of this extraordinary creature.—*Truro Sun*.

#### PRIZE POTATO RAISING.

In response to numerous inquiries for data regarding the ways and means adopted by the successful competitors for the Bliss Potato Premiums, we have taken the pains to carefully extract the pith of their sworn statements as transmitted to the Committee, and kindly placed at our service in advance of publication elsewhere. The yields were, in all cases very remarkable, and as these have been already noted for readers of *The Tribune*, there seems no occasion for repeating them. The particulars mainly sought by our correspondents are of character and condition of soil, kind and quantity of fertilizers employed, time of planting, tillage given and date of harvest, all of which will appear in the condensations subjoined, and which we endeavour to present as nearly as may be in the respective writers' own words. The facts which will be seen to stand out most prominently are, (1) significant economy of seed, (2) almost uniform dependence upon barnyard manure and ashes—and the great liberality of the application of the same—and (3) the thoroughness of the cultivation.