

Good Prospects for Beet Sugar.

The report for January of the Department of Agriculture contains some interesting statements in regard to the manufacture of beet sugar. The failure of the first experiments at Chatsworth, Illinois, and the cause of it, are duly noticed. Subsequently, experiments were made on Yellow Creek, near Freeport, with what success the report does not state. At Black Hawk, Wis., 40,000 pounds of sugar were made, in 1871, from the product of 200 acres of beets. But the largest success has been realized at Alvarado, in California, where a large sugar manufactory has been built, with a capacity of handling sixty tons of beets every twenty-four hours. The beets raised in the vicinity contain sufficient saccharine matter to pay the farmer well for raising them, and leave a fair margin of profit to the manufacturer. In 1870, the company manufactured 500,000 pounds of sugar, and the past year, it is expected, the product will be doubled. The high price of labour in California has thus far operated as a serious drawback upon the beet sugar culture, and withal it is clumsy and unskilful. As it is asserted that the cost of sugar to the people of the nation equals the cost of its bread, only a few years will, doubtless, be required to make the manufacture of beet sugar one of our largest and most successful industries. — *Western Rural.*

The great sources of fertility to the farm are the refuse of the crops which they bear, modified by the farm-stock, and preserved and judiciously applied by the husbandman. There is not a vegetable matter grown upon the farm, be it considered ever so useless or obnoxious, but will, after it has served ordinary useful purposes, impart fertility to the soil, and contribute to the growth of a new generation of plants, if it is judiciously husbanded and applied.

PLASTER.—In answer to the enquiry of a "Nichol Farmer," we would say that the surface application of plaster or gypsum ("on the leaves of plants"), is most assuredly beneficial, as experience has amply testified. The benefit is attributable in great measure, though not exclusively, to the power of the plaster to attract moisture from the atmosphere, and thus distribute it to the plants on which it is spread.

A series of geological maps of the country will remind the thoughtful man how wrong and unreasonable it would be to recommend a uniform agricultural treatment, or one unsuitable to the formation, elevation, aspect, and latitude of the greatly varying soils and districts. This consideration suggests the necessity of considering all the conditions before applying any particular treatment, either as regards soil or crop.

"In the sweat of thy face shalt thou eat bread," will be the condition of man until the end of time. No discovery of science, or mechanical invention, or improvement in the breed of animals, will ever do away with the necessity of mental or physical labour. These things may change the character of our work, and give us more of the comforts, necessities and luxuries of life. In fact, now, probably we work harder in this enlightened age than ever before.

Stock Department.

On the Breeding of Cattle.

The following extracts are from a paper read before the Nottingham Chamber of Agriculture by Mr. W. Sanday, a well-known English breeder:—

Shorthorns, on account of their early maturity, having become more popular in this country than any other breed of cattle, I shall (he said) confine my remarks to them. The same observations will, of course, apply with equal force to any other variety. To give you some idea of the increase in the number of short horn breeders within the last 20 years, I may mention that in the year 1850 there were 316 subscribers to *Cotes's Head* B. K., and the pedigrees of 1,127 bulls were entered; to the last volume we find 655 subscribers, with the pedigrees of 2,366 bulls. I would ask whether, in the opinion of this meeting, the number of really first-class animals has increased in proportion? My own opinion is, that the animals bred at the present day are inferior both in size and in quality to those bred 20 or 30 years ago. Now, if this be the case, surely there must be something wrong in the present system of breeding. I am convinced that the cause of this deterioration is the principle on which most herds are raised, viz., the fashion—or rather infatuation—of collecting from certain families without any regard to the qualifications necessary for producing and perpetuating good animals. To follow out this plan, in-breeding must to a very great extent be resorted to, and the number of families on which such an experiment can be tried with the smallest chance of success is so limited, that, in the majority of cases, the consequences cannot fail to be ruinous.

We all know the difficulty of raising and keeping up a good herd or flock, this can only be done by breeding from the very best males or females, but the present system seems to set this rule completely at defiance, if an animal be only of the fashionable strain, it is sure to make a fabulous price, whatever its quality. Only last year two heifers were sold by Captain Gunter to a Canadian gentleman for £2,500, and their produce, two heifer calves, has since been purchased by Lord Dunmore for the same sum (£2,500). Should these calves breed, what price do you think Lord Dunmore will set upon their progeny? Of course it will be a high one, totally irrespective of their quality; should a bull be reared, doubtless he will be used, no matter what he may turn out. I have, of course, put this as an extreme case; but similar ones are constantly occurring, and this servile adoration of pedigree cannot fail to end in disappointment, and ultimately in the permanent deterioration of Short-horns. With many, a long pedigree is all that is considered

necessary; but unless this pedigree be composed of really good animals, the produce will probably be unsatisfactory. A well-descended bull or ram may, although not itself first-rate, produce first-rate stock; numbers of such instances have come within my own knowledge. The case is far different when the sire comes of a line of light-fleshed delicate animals (and these, I am sorry to say, are in the present day only too numerous.) Surely any of us may foresee the end of such an irrational plan; and yet it is pursued, as I have already stated, by numbers of breeders.

There are (he observed) two other causes which, in my opinion, must hasten the deterioration of many of our best herds, viz., first, the artificial manner of rearing calves; and second, the practice of using bulls before they arrive at maturity. First, the artificial manner of rearing calves, especially bull calves: They are confined in small stalls or loose boxes, instead of being allowed to suck upon their mothers in the open pastures where they could take any amount of the exercise so necessary to their muscular development. I am well aware of the difficulty of carrying out this plan to any great extent, but whenever practicable it should be adopted, if really first-class animals are to be produced. Second, the practice of using bulls long before they come to maturity: It will be sufficiently evident to every one that such a practice cannot fail to be injurious, and, though instances to the contrary may be adduced, they are only the exceptions which prove the rule. I am also quite of opinion that over-feeding is another cause of deterioration; but it is not likely to be discontinued at present, as, owing to the extreme difficulty of judging animals when out of condition, there are but few who will purchase them. I am well aware of the scarcity of first-rate sires, and never in the history of Short-horns have they realised such enormous prices; but had the supply increased in proportion with the number of breeders, no such difficulty would have arisen. One advantage, however, has been gained. There is no lack of useful bulls, which may be purchased at moderate prices, and these, I think, we may fairly congratulate ourselves, have much improved the ordinary stock of the country.

I am now (he continued) especially addressing myself to farmers, many of whom keep well-bred bulls, a practice the importance of which cannot be over-rated. Here I may perhaps be allowed to make a few remarks on the selection of this description of stock. In the first place, it should always be remembered that the male has a greater influence on the quality of the stock than the female; consequently, every female put to a good male will probably produce a better animal than herself, this rule applies to all ordinary stock put to a well-bred sire. Therefore, never spare a few pounds in the purchase of a good animal, for you may reason-