

extending to all domesticated animals, the horse, the sheep, the hog, the dog, and the rabbit.

In breeding, always observe the following rules:

1. Breeding from sound and healthy animals.

2. Breed from the most perfect in form, and take a special care that a tendency to the same defect does not exist in both parents.

3. Breed animals of a distinct and positive character, to insure a certain description of offspring.

4. Select the very best males; for the produce inherit much more of the qualities of the male, whether good or bad, than they do from the female.

5. In crossing, the true system is to take one cross, and then return and adhere to the original breed.

It is a common practice, in the rearing of blood-stock intended for exhibition, to place the young animals, shortly after they are weaned, in a narrow stall, or box and to feed them with milk and meal—sometimes sugar and molasses are added—and afterwards with grass, hay, carrots, &c.; the animals look fat and plump, and their owner is satisfied. Now, the effect of this is without doubt to lessen the size of the lungs and other organs concerned in nutrition, and produce a breed that will carry an immense mass of fat, come quickly to maturity, and also, when they breed, produce the same qualities in their offspring.

By breeding from animals having a great tendency to fatten, or from those kept constantly fat, function must react on organization, and at last these qualities become not only increased, but fixed, in the race. By functions reacting on organization, is meant, when an organ—the lungs for instance—becomes diseased in consequence of not performing their natural functions, the diminished structure is likely to be reproduced in the progeny of an animal so affected; hence the reaction. The great secret of rearing animals for profit, is to obtain the fat kind, and supply them with all the food they desire, from their birth to maturity.

But, however, desirable these qualities may be in animals intended for the butcher, others of an opposite character must be attended to; these are, weight of muscle, constitution, and capabilities of propagating their species; to produce all which, quite a different system must be adopted. The proper development and growth of muscles depend in a great measure upon the use that is made of them; as a set of muscles in active exercise increase in size and vigor, while those that are but little used, lose their firmness and diminish in bulk. Cattle require not such exercise as would harden the muscular fibre, but just so much as would tend to keep them in health, and prevent their getting too fat.

By merely feeding an adult animal, we have not the power of increasing its muscular substance, but we have great power over

the increase of fatty matter, which, along with the fleshy fibre, forms food.

Daily experience fully proves the folly and impolicy of neglecting young stock of any kind; but especially is such neglect injurious in the case of those animals whose value depends on their size, symmetry, and constitution, which are mainly promoted by a careful provision shelter, and a liberal supply of food during the first two years; as nearly the whole of the fleshy parts (muscle) of an animal, which afford most profit, are assimilated during the period of its growth.

AGRICULTURAL EDUCATION.

Amherst, March 18, 1854.

From what I have said, it will appear that there are difficulties in the way of Agricultural Education in Great Britain which do not exist among us. A school there must be either for the higher, the middle, or the lower class. With existing notions, it cannot be for all. The college at Cirencester, I believe, has become essentially a school for the rich. There are in England and Scotland other schools, some more adapted to the wants of the middle class; others to those of the poor. Some are supported almost wholly by charity. Model farms are connected with some of these, in order to illustrate practically the labors of the field, of the stall, and of the dairy. Connected with the University at Edinburgh is an agricultural professorship, filled by a very distinguished man, Mr. Low, who has done much for the cause of agriculture in Scotland, and who enjoys in a high degree the confidence of Scottish farmers. Professor Low has established, in rooms devoted to that purpose in the university buildings, an extensive museum of agriculture, made up of numerous specimens of agricultural productions, together with models of improved implements, and a large collection of paintings of fine animals, as horses, neat cattle, sheep, and swine, so arranged as to exhibit the peculiar qualities of each breed and the points of excellence in each individual. For the kindness of Prof. Low in exhibiting to me his modes and means of instruction, as well as for other acts of politeness and hospitality, I cannot but here record my grateful recollections. With the exception of the great museum of the Highland Agricultural Society at Edinburgh, I found nothing in Scotland better worth visiting, and studying intently, than this museum of his.

Of the Highland Agricultural Museum, at Edinburgh, I will only say, that it would seem as if wealth industry and good taste had there brought together and arranged in the best possible manner, everything that could throw light on the farmer's path. The Museum of Economic Geology at London, is well worth visiting. One could hardly spend a few hours there without coming away the wiser for it. So of the Botanic Gardens and the vast collections of things amusing and useful on the old palace grounds and

Kew, near London, the birthplace, if I am not mistaken, of our last king, George III. It would be impossible for any farmer to spend a day in these gardens, without bringing away some practically useful knowledge pertaining to his profession. Such collections of plants, implements, shrubs, trees, various species of wood, polished and rough, of insects hurtful to vegetation, of almost every thing, which the farmer would like to understand, as exhibited here and in other parts of the kingdom, cannot have failed to contribute to the present advanced state of British agriculture. But of all the means which have brought about so desirable a result, none I believe, have been so efficient in proportion to the expense involved, as the lectures of such men as JOHNSTON, LOW, BRANDE and others. These men have popularized science—have brought it to the farmer's home—made it available to practical men. Their lectures have been adapted to the wants of sound, sensible, but not technically educated men. In the same plain, unostentatious dress, they have in several instances been printed; and have found a place by the farmer's fire-side. Home education for the farm has been the consequence. The farmer and his wife, his sons and his daughters, have been aided in their efforts at self-education, amid the practical applications of what they learn, to the daily employments of the farm, the garden and the dairy. I am in favour of agricultural schools. I believe that the principles of agriculture ought to be taught in our common schools even; and I could wish that every college in our country had its agricultural department; it is desirable that the sons of farmers should have opportunity for receiving instruction in those sciences, which throw light on their employment, without going very far from home, or being absent from the duties of the farm too long at one time; but after all I have not one doubt that lectures, carried to the homes of the people, adapted to aid home education, not on the details of farming alone, which, the farmer would be likely to understand quite as well as the lecturer, but on the various sciences connected with farming, to be illustrated by suitable experiments and diagrams, might be made a most economical and efficient means of diffusing agricultural education, beneficial alike to the present and the rising generation of farmers.

It is a singular fact; that Ireland, so degenerated as a portion of her population is, and so poorly educated, should be doing more to advance agricultural education in that country promises well for unhappy Ireland. Provisions for agricultural instruction exist under three forms:—1st, that of professorships connected with the colleges; as at Cork and at Belfast, at the former of which is a model and experimental farm of nearly 200 acres; 2nd, in connection with the national schools; 3rd, agricultural schools supported by private associations. I shall speak here only of those connected with the national