

performers of that breed are now being multiplied. So, too, it was in the same way that the thick coating of flesh and the white markings were fixed in the popular Herefords, and that Thomas Bates established the notable family of Shorthorns that bore his name, and, recently, that the now popular "Scotch Shorthorns" were fixed in the type that is giving them so wide a distinction at the present time.

But there is a limit to the extent to which this line of effort in building up improvement in animals can be carried. In-and-inbreeding for the purpose of extensive development of a single characteristic, carried too far, breaks up the balance of the animal. Nature rebels against so one-sided a work. The constitution of an animal, the powers of endurance, must be built up along with performance, and kept in balance with it, or, when a trial comes, the animal will break down under the strain.

Intensive milk or butter production, as an example, cannot be built up in a cow and maintained indefinitely unless along with it are built up powers to endure the work. Milk fever among the best of cows, weakened offspring, and consequent disease in the great performing herds, are Nature's protest against the one-sided work of performance alone being carried further. All along the way, among the great masters of the art of breeding, wrecks have finally set the limit to what can be reached by continued in-and-inbreeding. The most disastrous example of this kind known in the business, probably, was the going to pieces of the cattle from the New York Mill's herd of Bates Shorthorns, sold at auction at fabulous prices, yet proving of little value as breeders afterwards. Many less noted examples are to be found among those dairymen and breeders intent on building up a herd with the one point of great performance in view.

In-and-inbreeding, therefore, has been practiced with advantage up to a certain undefined limit, but has proved a failure in every attempt to pursue it indefinitely.—[Agricultural Gazette.

### The Bacon Hog Industry.

In a recent number of the "Farmer's Advocate" there appeared an article on the bacon-hog industry, dealing with the loss it was about to suffer should things continue as they are, a subject on which I would like to express my opinion.

The cause for the present shortage is easily traced to the poor price paid last fall, and the lack of discrimination in the price paid by buyers generally, as it makes no difference how good hogs a farmer raises he gets no more than the man whose hogs would make one sorry to look at.

Where the fault with the farmer lies is here: When the price goes down like it did last fall he gets rid of all his hogs; then when the tide turns he is entirely out of hogs and receives no benefit from the rise. If he would stick to the hog through thick and thin, a more even supply would be the result, and consequently better prices.

But the real cause of the trouble is the packer, who thinks he has the matter in his own hands and will do as he pleases; but just about now he is experiencing a change of mind, and to relieve himself is howling about having to import hogs and of the scarcity of coarse grain in Ontario, assigning this as the cause of the lack of hogs. Everybody knows that it is not the case. The packer claims that he is losing one to two cents a pound at the present price. Who was losing one to two cents last fall? Oh, it was only the farmer, who does not mind feeding hogs for nothing!

If things go on as they have been going it will not be long before the bacon-hog business will be ruined, and not only will the farmer suffer, but the whole country will feel it.

A few years ago our best farmers began to breed up their hogs, so as to produce the proper bacon type, and it was not long till nearly all the farmers were trying to produce the proper kind of hogs. Now a reaction has set in, and they are going back to the easily-fattened breeds. Why? Simply because they get no more for the right type bacon hog than they do for the others, and the former are not as cheaply raised.

We are now just beginning to get a firm hold on the English market, and if we are not careful we will lose what it has taken years to gain, for John Bull wants the best, and if Canada has not got it he will buy of those who have.

Here lies the remedy: Let the packer instruct his buyers to discriminate between good and inferior hogs. Let him also come down, or up, to a fair and even price for a suitable sort. Then there will be some reason for breeding bacon hogs. There will also be an even supply, as the farmer will know just what to depend on. In fact, as I would say, that all there is left for us to do is to keep the ball rolling until the

packer sees that we mean business, and if he will not see, why we will have to quit the business, and then we will see who will squeal first. Let others speak; I am sure the editor will give all a chance.

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## FARM.

### Eradication of Weeds.

There is probably no other question that so largely occupies the attention of the farmer during the summer, as how to get rid of weeds. Not only do they offend the eye and degrade the taste, but are a positive injury to successful agriculture. Most varieties are possessed of strong roots and a vigorous constitution, that enable them to gather nourishment from the soil more readily than is the case with the more desirable species of vegetation. It has been found that a ton of dried pigweed (*Amarantus retroflexus*) contains as much phosphoric acid, twice as much nitrogen and nearly five times as much potash as a ton of ordinary manure. Lawes found that 150 to 270 pounds of water were transpired for each pound of increase of dry matter. These pernicious characteristics demand a proper system of eradication, hence a careful study of the habits and growth of weeds, their mode of distribution, etc., is of prime importance.

Our worst weeds are for the most part of foreign origin, perhaps not one in twenty being native plants. Those indigenous to a country are not usually troublesome until introduced elsewhere, thus it naturally follows that they must be provided with some means of transportation. This is accomplished in two ways: First, by natural agencies, as wind, water, birds, animals, etc.; and, secondly, by human or artificial means, as feedstuffs, seed grain, manure, implements, threshing machines, etc. Doubtless one of the most prolific sources of weed dissemination is the buying and sowing of impure grass seed. This fact will be more forcibly realized if the prolificacy of a few weed seeds is fully understood. A common thistle head may contain 300 seeds, each producing a plant with 50,000 seeds. Shepherd's purse, false flax, wormseed mustard, curled dock, each average from 20,000 to 40,000 seeds on a plant. Our experiment stations have during the last two or three years analyzed numerous samples of commercial clover and grass seeds, which were found to contain a large percentage of the above varieties, together with others equally undesirable. In one case a sample of red clover contained over 36,000 weed seeds per pound; alsike, 49,000, and timothy, 79,000. Alarming as this may be, much may be done towards solving the weed problem, by preventing their propagation. Careful screening and the sowing of only such seed obtained from localities with a minimum of these pests would aid very materially in keeping them under control. In eradicating weeds it is well to consider them as annuals, biennials and perennials, because in most instances the treatment is simple and upon general principles. Annuals are those plants that complete their growth and ripen seed in one season, as wild mustard, purslane and ragweed; also those known as winter annuals, of which cockle and pigeon weed are examples, produce a certain growth before winter, and complete their development the following spring. If annuals are prevented from seeding they will soon die out entirely. Clean culture is, therefore, the chief essential to success. It kills growing weeds, and by causing seeds to germinate hastens their destruction. Unfortunately, many seeds are encased in an oily covering, that enables them to resist decay. Wild mustard and wild oats have been known to possess vitality after having lain in the ground for twenty years. When brought to the surface they spring into life, and may be exterminated by cultivation whenever they appear.

Biennials require two years to complete their growth. The majority of them have a long taproot, in which during the first year the plant stores up a supply of nourishment in the form of starch, which is utilized the second year in producing seeds, as burdock, blueweed and wild carrot. Like annuals, they are only productive from the seed, hence should not be allowed to mature. They are seldom seen in cultivated fields, but are very common in fence corners and waste lands where it is impracticable to use the plow. If this class of plants are cut off even with the ground they will stool out and prove more troublesome than before, but cutting two or three inches below the crown with a sharp spade or spud will always be found effective.

Perennials continue to grow and produce seed indefinitely. They are of two classes: Those that produce themselves from the seed only, such as ox-eye daisy, dandelion and yarrow, and creeping perennials, which are reproductive not only from the seed, but also by means of creeping rootstocks that run along beneath the surface, and are supplied with numerous buds, from each of which springs up a new plant. They are by far the most troublesome of all weeds, and require very thorough treatment. Representatives are Canada thistle, bindweed and couch grass. Land infested by these should not be worked during wet weather, as wherever the roots are bruised a sprout is started, and the labor involved only serves to increase the difficulty. Shallow cultivation is imperative, as these weeds are surface feeders, and deep plowing transplants them beyond reach. As a general rule the land is best cleaned by putting in some hoed crop, but occasionally on badly-infested areas a bare fallow will prove to be the more profitable method. Some perennials may be killed

on small patches by pasturing with sheep or covering thickly with straw, and as no flowering plant can live without leaves, any means of preventing their growth will literally starve the roots to death.

A proper rotation of crops is a valuable means for killing weeds of any variety. It will have been observed that certain crops are conducive to special kinds of weeds. For instance, meadows and pastures encourage the growth of curled dock, ox-eye daisy and plantain; fall wheat and rye is congenial to cockle, pigeon weed and chess, and spring grains to mustard, wild oats and foxtail. Keeping this fact in mind, it will be seen that the remedy sought may be found in a rearrangement of crops, such as sowing spring grains on land infested with weeds common to fall grains, and vice versa. In the first case the cultivation required from putting the crop in will destroy any weeds that had started to grow the previous fall, and in the latter instance the crop will be harvested before the seeds of any foul growth can mature. Dense growing grass lands generally smother out annuals, but are troubled with biennials and perennials. These should be kept in check pretty effectively by practicing a three or four years' rotation that would include a hoed crop following sod. To summarize, avoid as much as possible the distribution of weed seed, and employ rational methods in eradicating those that do grow. By a careful study and application of the few essentials enumerated, any weed can at least be kept under control should complete extermination be impracticable.

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J. H. M.

### Rape as Pasture.

With frequent rains and flush pastures of grass in June, farmers are apt to fail to make provision for the dry time that may come and generally does come later in the summer or in the early autumn when the grass fails, and regrets are indulged that some provision has not been made to tide over such a contingency.

Rape as a forage or pasture plant, probably fills the bill for this purpose better than any other for sheep and pigs, and also for cattle other than the milking cow, in which case it is likely to affect the flavor of the milk and butter. For sheep it is par excellence, the most rapid flesh-producing green feed available. For young cattle and for those intended for feeding for beef in winter, a rape pasture in the fall puts them in the best possible condition to go on gaining in weight rapidly. For pigs, according to experiments conducted by Professor Carlyle, at the Wisconsin Station, it was determined that an acre of rape properly grown, when combined with corn and shorts, has a feeding value equivalent to 2,436 pounds of a mixture of these grains, and a money value of \$19.49 per acre; that rape is a better green feed for pigs than good clover pasture, the pigs fed upon rape having made, on the average, 100 pounds of gain on 33.5 pounds less grain than was required by the pigs fed upon clover pasture with the same grain ration, and that rape is the cheapest and most satisfactory green feed for swine.

June is the favorite month for sowing rape, though it may be sown to advantage any time in July. We have seen a good crop grown on clover sod plowed immediately after harvesting a hay crop, the land being rolled and harrowed directly after the plowing, and the seed sown broadcast at the rate of four or five pounds per acre and harrowed in, though, as a rule, better results may be expected where the seed is sown at the rate of two pounds per acre in drills 24 to 30 inches apart, and the horse hoe used between to conserve moisture and hasten growth.

Where a suitable drill for sowing on the level is not available, the ordinary grain drill may answer the purpose, using the grass-seed attachment, closing part of the openings and directing the rubber tubes into certain of the holes at a distance apart of from 21 to 26 or 30 inches, the land being first rolled firmly to prevent the seed being too deeply covered, a very light covering being sufficient. The ideal preparation, however, is a fall-plowed field, brought to as fine a tilth as for turnips, and sown and cultivated in the same way. Rape seed is so nearly like turnip seed in appearance that only an expert can distinguish between them. The price of rape seed rarely exceeds ten cents per pound, and is sometimes sold as low as five cents per pound. Dwarf Essex is the variety sown for pasturage purposes. It is usually fit to pasture in six to eight weeks after sowing, but stock should not be turned on it until it is twelve to fourteen inches high, as the stronger the stalks, the greater the feeding value. After being eaten down it will spring up again and give a second or third crop if stock be kept off it for a few weeks. It is not materially injured, but rather improved by frost, and is relished by stock right up to winter. There is no cheaper or more profitable supplementary pasture crop than rape. There is some danger of sheep or cattle bloating upon it at first if turned into it while it is wet with dew or rain, but when they get used to it there is little danger from this cause. It is well, however, when practicable, to allow the animals access also to a grass pasture for variety, though in the case of sheep and pigs this is by no means essential.