ers we know of, he said casually : "There is a bull I would not take home as a present." We looked at the animal. He was of medium size, rather of the buffalo make, that is, very much heavier on the fore quarter than the hind. This bull was brought into the sale ring, and caused more excitement than any other animal sold, although other animals sold higher. The bidding was spirited, and the competition for his possession was greater than for any other animal sold, the bidders being more numerous. He was knocked down at $4,500. He is now nine years old, and has been more closely bred than any other bull offered.

We do not believe that half of the real farmers in Canada would give $30 for him ; no breeder there would take him as a present without the pedigree. We do not believe he would take a prize at any township show, yet we believe every real breeder there would give from $50 to $200 if they could have a calf from him, from any of their own cows. They believe he has the power of transmitting the type of his ancestry with a certainty, and that no cross-bred or out-bred bull would be one-tenth as valuable, even if his appearance should be prepossessing.

We do not believe this bull would produce as good a calf for the profit of the common farmer, from a common cow, as many other Shorthorn bulls would that have no pedigree. The poorest farmers, and rich ones, too, still ridicule the idea of pedigree more from parsimony than from knowledge, and while they speak against the high prices paid, would gladly step into the inside party if their purses or spirit would allow them. We would by no means advise any one to touch any of these high priced animals, unless they thoroughly understand what they are doing, but we would advise the poorest and the best farmers to strive and improve their stock. Those that really understand breeding well know they must have the best; price is of only secondary consideration to the real breeder.

It was stated that more Shorthorns had changed hands and higher prices had been paid during the past year than ever before. It was considered injudicious to run up prices too high. It was the opinion of the Association that Shorthorn cattle should be assessed at the rate of common cattle. Some considered the present prices too high. The advantage of using good bulls must be taught to farmers ; they do not know it. One lot of 16 steers, three years old, had been sold for $210 each; they averaged 2,100 lbs.

The Secretary showed that 154 Reports of the Association had been sold in Canada, and only two had been sold in the States. We did not make enquires about this, but it appeared to be a strange statement.

It was stated that the old long horns would take six to seven years to mature; the Shorthorns could be matured in three. Judge Jones, of Ohio, considered the standard of judgment for cattle should be considered as 100 points divided into four classes, consisting of the following : 1st, robustness of constitution, 20; 2nd, cylindrical form, 40; 3rd, hair, skin and flesh, 20 ; 4th, milking qualities, 20. Some considered that an animal should be judged on its merit, independent of pedigree. Registering pedigrees was considered a grand aid to improvement.

Impoverished Soil—Its Improvement.

As it is with animals so it is with soil. With fair treatment they may, with little trouble, be kept in good condition. Suffer an animal to be worn out by bad treatment, deprive him of needed food and rest, and the difficulty is to return to him that state of vigor that he should never have been deprived of. So is it with the soil of our gardens and fields. They, too, require their regular food and the timely rest that they should receive by rotation, pasture or fallowing, and to restore to them that fertility of which they had been deprived is a matter of no little cost and labor. The good farmer know's he cannot afford to treat his land in this manner. It does not pay. If the farm be impoverished so must be its occupier. Impoverished soil is not only unremunerative for a short period, but it sometimes occurs that, for year after year, it can but with difficulty be brought to pay the expenses and labor required and make it at all profitable. We have known land that had received such treatment from the occupant, who looked for a good return in heavy crops, and yet he was sadly disappointed. He had put no less than a score of loads to the acre of good farmyard manure, not wasted by exposure. The ground was plowed well and in good season, and, after all, manure and culture, the crop—potatoes and turnips—was so very light as to be almost a total failure. It would not pay expenses—and there was no failure from the turnip seed. It germinated freely, nor were the young plants eaten by the fly; nor any blight or disease affect the potatoes. The whole crop seemed starved and stunted from a deficiency of plant food. The following year that ground was sown with spring wheat, and the crop was as light as the root crop, though uninjured by smut or rust, or by late frosts. It, too, seemed to be a poor yield, from poverty of the soil; and that soil had been well manured. Such failures sometimes occur. The ground may have been well manured, and the culture such as to render the plant-food in the manure and soil available for the germination of the soil and the nutriment of the growing plants, and the crop, after all, may be a partial failure, without any apparent cause. Let us enquire what we are to attribute such failures to. The soil referred to in this instance had been a loamy sand. By taking from it successive scourging crops for some years, without manure or change of crop, it had been entirely exhausted of the loam, in which lay all its original fertility. The power possessed by soils having any fertility of separating the salts that form the food of plants and retaining them for that purpose till absorbed by the roots, was wholly wanting in that impoverished, porous soil. When the manure was dissolved the ammonia, potash and other elements necessary for the nourishing of plants, passed away through and from the porous soil, leaving scarcely a trace behind. Even sandy soil, as long as any vegetable matter remains in it, is possessed, in a greater or less degree, of this retentive property, and so long is it benefited by the manure and no longer.

The application of manure to the soil in that exhausted condition is the merest waste. Had the owner thrown it into the river he would not have committed an act of folly much greater than what he did. When the constituent elements of the manure were dissolved they passed through the utterly exhausted soil as fallen rain through a sand heap. They contributed nothing to the fertilizing of the soil or supplying food to the germinating or growing plant; the impoverished soil had no power to retain them.

ENRICHING THE IMPOVERISHED SOIL.

The improvement of worn out soils is one of the most difficult and expensive undertakings in agriculture. Land that has been deprived year after year of its fertility cannot, in a short time, be restored to its former fertile condition. That condition may have been the result of agriculture, or it may have been the work of Nature, as in the wooded virgin soils of newly settled countries; but the state of fertility, from whatever cause it may have been provided, if once destroyed, can only be restored by skillful farming, pursued for some time.

The great want in impoverished, sandy soil is the want of vegetable matter, a want, it may be, amounting to total absence of this, which possesses as its constituents the first and most necessary food for the support of vegetable matter. The richness of the soil in carbonic acid depends greatly on the supply of vegetable matter. And where this vegetable exists in the soil in sufficient quantities, that soil possesses the needed retentive property.

A liberal application of earth that is rich in vegetable matter is a good remedy for such an impoverished soil, wherever it can be had and applied without too heavy an expense. In farming we must beware that the cost does not outbalance the profit. Muck would be a good topdressing. Two or more crops of buckwheat, plowed under in succession, would be of great service. Any introduction of vegetable matter into such soil must be an improvement.

An essential principle of good farming is to keep the soil in such condition as to utilize all the elements of fertility received, both from the atmosphere and from the application of manure, as well as those within the soil itself, whether natural or acquired. The atmosphere is a reservoir of wealth, not hoarded up without a good purpose, but to be dispensed liberally, refreshing and nourishing every green thing upon the earth. The vapor arising from the earth descends again upon it, bringing supplies of carbonic acid, oxygen and nitrogen, adding to it productiveness and nourishing plants in their growth. By the judicious use of cultivator and hoe, and a suitable rotation of crops, the soil is kept in that state best fitted to receive all the benefits of the atmospheric influence.

Fertile soils possess not only a power of absorbing the elements of fertility, so indespensible for the nutriment of plants, but they also have the power of retaining them. But little of the ammonia, soda, potash and other elements, furnished by the atmosphere and the manure applied, pass away by filtering through the soil in combination with the water, when the soil retains somewhat of its loamy or fertile condition. They are retained by the retentiveness of the soil.

Pasture.

Writers on agriculture, whether they be practically acquainted with their subject or not, are given to greatly change upon the exhaustive effects upon the soil of raising wheat and other grain. The annual removal of so many bushels of grain from every acre is made the basis of a calculation as to how soon every farm in the country will be brought to a condition of barrenness and every farmer to destitution. To a certain extent this is true, and no good or intelligent farmer needs to be told so plain a truth. But few persons take any thought that the remedy proposed for this supposed evil is equally injurious to the soil as the evil itself. Along with the remonstrance comes the advice to raise cattle, or to substitute dairying for wheat growing. Dairying is the favorite alternative. Grass is not exhaustive of the soil, and may be grown indefinately, we are told, without injury thereto, if not with positive advantage. Now there are a few facts which bear upon the subject which are very pertinent and useful to study. We all admit that a crop of wheat taken from a field and sold to some distant place, necessarily takes away from the soil certain elements of absolute necessity to its fertility. The continued growth of crops must in time remove from the soil all those necessary elements it may contain, the exhaustion of the richest soils being thus only a question of time.

But if we estimate the effect of the removal of a certain amount of grass, or its product in milk, in the same manner that we estimate the effect of the wheat crop, we shall find very little difference.—Nay, we shall find that the average yearly product of a cow in milk actually takes more from the soil, and of the same elements, than the average crop of wheat does.