old wagons and buy new ones with wide tires. He had never felt that it was wise to bring this change about by legislative enactment. The association, however, might do good, not merely by agitating in reference to the matter, but by communicating with wagon manufacturers with the view of inducing them to put wide tires on the market. In some sections this had already been done, and the results were very satisfactory.

### The Ontario Government and Agriculture.

The estimates for agriculture brought down last month by the Hon. John Dryden, Minister of Agriculture, show that he is as alive as ever to the wants of agriculturists. The excellent work done in the past by the travelling dairy school has encouraged him this year to put in a sum of \$1,800 for three travelling spraying outfits, which will visit thirty electoral districts the first year, and give practical instruction in fruit spraying to all who care to be present. The work will he done very thoroughly both as regards time and labor, and should demonstrate in a practical manner the value of spraying.

This new departure of Mr. Dryden's is one that must be greatly commended. The number of insects and fungi that assail fruit trees, and that seem to be constantly increasing, are a serious menace to the fruit industry, and must be stoutly combatted with spraying. Hatherto this has been much neglected, but now the time has come when spraying must he seriously taken up. The travelling spraying outfits will convince many doubters of this fact.

Among other items in the vote on agriculture we notice an extra \$1,000 for experimental fruit stations, \$250 more for the Experimental Union, and \$2,000 for lectures for farmers' institutes. To partially offset this latter the cote of \$\$00 for the Central Farm ers' Institute has been dropped, that organization having, apparently, passed its usefulness, and Mr. Dryden considering that more useful work is done by the local institutes, with which claim those who attended the last two meetings of the Central Institute will gener erally agree.

#### Wheat Stocks.

We have heard so much lately about wheat of a nature to discourage wheat growers, and so little to arouse any enthusiasm, that anything tending to encouragement will be welcomed.

In the New York Price Current, C. L. Hyde, Pierre, South Dakota, attacks the United States Government's estimate of the wheat crop of 1894, which, he declares, is far too high. In previous years the government estimates have been fifty or one hundred nullions too low, and this fact has led many to hold that the estimate for 1894 is as much too low as those for the three previous years. As a matter of fact, Mr. Hyde says that South and North Dakota, Minnesota, and California, as well as other states, are credited far too high.

A feature that has greatly reduced the stock of wheat in farmers hands is the feeding of it to live stock. Unbiased authorities admit that at least 75,000,000 bushels have been thus fed, and it is probable that 100,000,000 may be nearer the truth. In the experiment during the coming season South Dakota alone several million bushels have been feil since last August.

A smaller acreage of winter wheat, too, was sown last fall, and it is likely that the area of spring wheat will be largely curtailed. This will certainly be the case in localities where bad crops have left many farmers without seed grain

Mr. Hyde believes that wheat will be 100 per cent, more valuable in the United States before next July, simply from the law of supply and demand, regardless of the price in Europe and the rest of the world, and gives figures to bear him out in this. We certainly hope that this may be the case, but we fear that Mr. Hyde is a little too sanguine.

## Fodder Corn in Prince Edward Island.

The idea was long prevalent among farmers in Prince Edward Island that fodder corn could not be grown there so as to mature properly, and, consequently, no attention was given by farmers and stockmen towards growing it for feeding in winter.

A change, however, is now coming over the scene. Thanks to the persistent efforts and teaching of Prof. J. W. Robertson, the Dominion Dairy Commissioner, several of the most advanced farmers have now given corn a trial, and the results have been so satisfactory that others will follow suit this year. It has been found that corn will mature sufficiently for the silo, if only suitable kinds are planted, and they are planted early enough and harvested before frosts occur. It is said that none who have tried fodder corn have been disappointed, or announced their intention of giving it up this year. The fact that corn can be grown for the silo will improve the possibilities of Prince Edward Island in the dairy business.

# Supplementing Pastures.

For many years THE JOURNAL has been advocating the practice of supplementing pastures by growing green crops. Although the advice has been heeded by many of our readers, yet too few follow out the practice, as witness the fact that the supply of milk to the cheese factories and creameries of our Dominion decreased to an alarming degree last season when the dry weather set in. Doubtless, a variety of causes contributed towards the producing of this effect, yet it cannot be denied that amongst the most important of these was the actual want of supplementary feed when the pastures failed. Whilst yet there is time. and before all plans for the coming season's crop are laid, we would direct the attention of our readers to the absolute necessity of making some provision for this emergency, and would urge upon them to make arrangements to set apart a few acres for the purpose of growing green cruos, such as peas and oats, or com.

It is unnecessary to state here in detail the benefit that will accrue from the growth of such crops, as they are already well known to every reading agriculturist; and, while there may be many who have for years past been proving in actual practice the truth of these words, and who would not think of endcavoring to put their stock through the summer without such provision against dry weather, yet to these we can only say that many of their neighbors have not been following their good example. They should turn agricultural missionaries, and endeavor to get them to try The country would be made much wealthier

farmers of such supplemental feed, and, if thereby our country is made richer, then will all the individuals who live in it be also tion of plant food that goes on in the late fall, benchted.

## How to Increase the Yield of Crops.

The question of large yields is always one of vital importance to the farmer. Where the yield per acre can be increased by improved methods and without too much outlay, it will be wise to study the plans that are likely to secure such an end, and, so far as at all practicable, to adopt them. The extra bushel or two per acre may bring a profit where without it there would be no profit, and where the yield can be run up several bushels per acre beyond the cost of production, the profit then becomes a substantial one.

Various methods may be adopted to increase the average yields per acre. Some of these relate to rotation, others of them relate to cleanliness, and yet others to live-stock keeping in one or the other of its branches. In fact, they are various, and we shall now aim to show how they conduce to the end sought.

A varied rotation does not draw upon one particular element, or upon two or three of these, as the case may be, as much as a narrow rotation. This arises from the fact that some plants draw more largely on one kind of plant food than others ; hence, when plants varying somewhat in their necessities are grown, they draw more regularly on the varied elements in the soil. A varied rotation has the effect also of keeping lands cleaner, and cleanliness has a favorable influence on productiveness, since the fewer the weeds in the soil, the less do they consume of the plant food which is present in the soil for the sustenance of the crops.

The growing of hoed or cultivated crops has a favorable influence on productiveness. This is owing, first, to the cleanliness is there in the active form, and some is inert which it brings to the soil; second, to the | That which is inert is being unlocked or liberation of plant food in the same, induced changed gradually That which is in the by the cultivation given to it in conjunction more active and easily accessible form, as, for with weathering influences ; and, third, to the instance, in the form of decaying vegetable greater moistness which it brings to the land. | matter, is easily lost. It is easily washed out The added moistness may not always be bene- 1 of the soil, hence every legitimate and reason ficial, but in the case of light lands it is bene- able means within our power to save it should ficial. It should be remembered, however, be resorted to. that hoed crops generally take a good deal of fertility out of the soil ; hence, when they are much grown, it must be fed.

are introduced frequently into the rotation, the yield of cereals is pretty certain to be increased. These crops aid the land very much. They aid all kinds of land. They help to bind light lands and to hold them together. They help to loosen up stiff lands and to bring them into a better state of cultivation, and they bring vegetable matter to all kinds of soil, which has the effect of furnishing food for the crops, and of holding moisture.

Leguminous crops grown on land bring nitrogen to it, and therefore render it more productive, whether these are plowed under or the ends sought in growing them, and according to the adaptability of the land.

the yield of cereal crops. This is true of all,

especially true of stiff soils. The reasons, or at least some of them, grow out of the libera and in the spring, through weathering influ ences, and out of the early warming of the surface of the soil as soon as winter has gone.

But more than anything else, probably, the keeping of live stock tends to increase the average yields of farm produce. When the produce which is raised on a farm is fed on it, and when leguminous crops are freely grown at the same time, the improvement in fertility, and, therefore, in ability to produce, goes on quickly ; and, if some foodstuffs are purchased and fed at the same time, the fertility of the land is still further increased.

One more way of increasing fertility requires to be mentioned. We refer to the purchase of artificial fertilizers. In some sections this will pay if judiciously done ; in other sections it will not pay. These fertilizers require no little knowledge to enable us to handle them aright. Sometimes an application of some fertilizer, as, for instance, nitrate of soda, applied at the right time, will effect great good ; whereas, if ignorantly applied, it would probably be lost.

### Nitrogen Utilized.

Nitrogen is the most valuable element in soil fertility, and, therefore, it should be looked after with a careful eye and husbanded to the greatest possible extent. It is valuable because without it plants cann.t grow. In fact, it enters very largely into their growth. It is valuable because it is only present in most soils in limited supply, and it is valuable since, notwithstanding its great utility, it is so easily lost. Every care, then, should be taken to get this valuable fertilizer wherever it can be cheaply obtained, and to utilize it to the utmost before it leaves us.

We get nitrogen from the soil. Some of it

We get nitrogen from the air. In fact, the air is the great storehouse of nitrogen. Our energies, therefore, should be lent, first, to When grasses, and more especially clovers, getting it out of the air, so far as we can, and, second, to making a good use of it when we do get it from the air, and when stored in the ground. We can get it from the air by growing as frequently as possible such crops as clover, lucerne, peas, beans, and vetches, and then we can use it to good advantage by growing such crops after them as require large quantities of nitrogen to complete their crowth.

We get nitrogen in our stables, and in large quantities, but it is easily lost. It is easily lost in the form of ammonia. Go into a horse stable in the morning and a strong smell of not, as these crops usually have a salutary ammonia will be at once noticed. The same influence on the texture of the land; and j is true in cow stables, but not in the same as they are nearly all first-class foods for live degree. This ammonia is simply nitrogen stock, the aim should be to grow them as escaping into the air. Its escape can be frequently as possible. The best of these arrested by he free use of land plaster, and crops for practical uses is clover, either the even earth, where land plaster cannot be got common red or the mammoth, according to But the nitrogen is very easily last out of the manure, even when it is lying in the yard, or when it is piled up in heaps in the field to Plowing land in the fall tends to increase which it has been drawn. In the yard, every rain that falls is liable to wash some of the by a more general provision on the part of our or nearly all, kinds of land, and it is more nitrogen out of the manure, and, while it is