

many hundreds of Ontario schools reshaping themselves in the course of a few years as real country schools, concerning themselves with the real problems of the people whom they serve.

In the High School work, too, similar progress has been made in some respects. In the revision of the courses of study in 1904, the work in elementary science that is given to the pupils of the first and second years was given a strong vocational basis. In the revision in 1907 the work was reshaped, with strong agricultural features. In Biology, for example, the pupils in all our High and Continuation Schools receive instruction on economic insects, weeds and weed seeds; in the animal studies, moreover, teachers were encouraged to take concern of domesticated farm animals, etc.; in their plant studies, a similar encouragement was given to the study of economic farm and garden plants. The Botany thus becomes very largely agricultural botany, and the Zoology very largely agricultural zoology.

It can be readily understood that this work was often found not agreeable or easy by the science teachers, for they themselves had never been instructed along these lines in their High School or College studies. Good progress, however, has been made. The science teachers have been gradually adapting themselves to the new and difficult task, and our High School inspectors report very satisfactory work being done throughout the Province.

A further step forward in this attempt to make the instruction of the schools of vital concern to the daily employments of the people, was made in the revision of the course of studies last summer. If one examines the course now outlined in Elementary Science, he will find that a strong agricultural option has been placed amongst the High School studies. This is not the work necessarily that is prescribed to be carried out by the District Agricultural Representatives, although it is expected that they will teach the work in the schools where they are located. It is a course that may be taken by any science master who gives himself whole-heartedly to the task. A few schools have adopted the option; it is being carried out, for example, in Berlin Collegiate Institute. The work calls for elementary instruction in poultry-keeping, beekeeping, live stock, dairying, field crops, orcharding, etc. The plan involves the carrying out of practical work in small experimental plots in the school-grounds, etc.

There is no doubt that a wide adoption—and the Department of Education heartily endorses and encourages the scheme—of this scheme of agricultural instruction in our secondary schools would be of immense advantage to both the cause of education and the cause of agriculture. To make it "go," a strong public sentiment is required. This can be developed only through a propaganda to acquaint everyone with the plans of the Education Department. Science teachers will soon adjust themselves to meet the demands. They cannot, however, be expected to shoulder the burden of the whole movement. There is evidence that, up to the present, at least, High School Boards have not given much attention to this matter. Our summer school courses for the past eight years have been open to High School Science Teachers, and the offer has always been made to provide special classes for any number that might attend. So far we have had only four science teachers enter for the work.

It would not take long to prepare quite a number of our science teachers for this work. In two four-weeks' summer sessions much could be accomplished. For example, if a class of such teachers in the first year spent a month on the study of economic plants, insects and farm animals, agricultural physics and agricultural chemistry, they would be in a position to introduce not a little valuable agriculture into their science teaching. If they returned for a second year, and took up what might be called the applied agriculture in orchard, field, garden, dairy and stable, they might become very valuable exponents of up-to-date farm practices in many of our Rural, High or Continuation Schools. The opportunity lies before the people for this if they wish to take advantage of it! The subject has been given a place in the school studies, and the Agricultural College is prepared to train the teachers!

I shall not speak of the work carried on by the District Agricultural Representatives as agricultural teachers in High Schools. So far, this work has been confined very much to the instruction of short-course students. Undoubtedly, good work is being done in this connection, and will continue to be done in this way so long as there is no demand for long-term courses. In some time, but these plans have not very much to do with the larger problem of introducing agricultural instruction into all the schools. There are about three hundred of them—where science teachers are engaged in giving instruction to High School pupils of the first and second years.

These are some of the features of the efforts which are being made by our educational authorities on behalf of agricultural education. As I

said before, the great need is to have people want this for their schools and their children. Your continued propaganda cannot fail to have a good effect. But with it all, it should be remembered that progress is being made, and that Ontario has by no means to feel ashamed of what has been accomplished!

Along with the new regulations concerning Elementary and School Gardens, there has been prepared a survey of the work accomplished in the Province for 1911. In the course of a few weeks this will be ready for distribution, and sent to every rural-school teacher in Ontario, as well as to any others who may wish for a copy. It is felt desirable that everyone concerned in educational progress should be kept informed as to what is going on in our own midst. We make progress by imitating. Much is being done, and there is not a little reason for congratulation, in spite of the fact that one often hears complaints about our backwardness and mistakes.

I would take this opportunity, too, to make it known amongst your readers that teachers and trustees will be assisted in practical ways to introduce the work. Complete instructions will be sent along with material for carrying out practical studies in the school-grounds. Further announcement of this will be made in a few weeks.

S. B. McCREADY.

Ontario Agricultural College.

HORSES.

If the colt is to be used to help with the spring work, now is the time to get him handy in harness.

The horse which has been idle all winter cannot be fitted for the seeding operations in a day. It requires time; first, daily exercise, then light work gradually increased to heavier and longer-continued work, this all accompanied by a gradual proportionate increase in grain ration.

In preparing for spring work, see first that the food given is being thoroughly digested; secondly, that no more is crowded into the animal's manger than he has appetite to clean up and capacity to assimilate; and, thirdly, that, along with daily exercise, the animal receives regular and thorough grooming.

There is no better time to get the collars and harness fitted to the horse than during the preparation of the latter for the approach of heavy work. Little alterations can often be made which go a long distance towards keeping the horses' shoulders and backs from getting sore. A harness cannot fit too well. In preparing the horse, also fit the harness.

Perfect condition in the horse is evidenced by a bright, clear eye, a brilliant coat, high spirits, and mettle, and sufficient flesh to "round him out" well, but not enough to interfere with his action or usefulness. A horse in this condition, exercised regularly, and gradually accustomed to work, is the kind of animal that will stand most work this spring.

The man who succeeds in breeding draft horses must ever keep in mind size, quality, feet, legs and action. These are all utility points. The markets demand horses weighing 1,700 pounds and upwards, that have good body conformation, large feet of good texture, strong, clean bone; large, sound joints, heavy muscular development, combined with good straight, snappy action. Such horses command high prices, and are very scarce. The statistics for the year 1911 show that only one horse out of every twenty sold at our leading horse markets filled the bill. This is surely a good line of work to pursue for many years to come. The vast majority of our farmers make a serious mistake when they sell their good draft mares to go to the cities. A good draft mare is worth twice as much on any farm, if she is used for work and breeding purposes, as she will sell for in any horse market. Only mares of good body conformation, and absolutely sound, should be retained for breeding purposes. It is very important that the stallion used should be sound, stand well on his feet and legs, show good bone in his back, heavily muscled, and in good position, as indicated by width between the eyes. Avoid undersized, light boned, crooked-legged animals. Good stallions of Prof. W. J. Ken-

Clipping Horses.

During the heavy, continuous work necessary to get the crop sown in the spring, anything which makes for the comfort of the horse should be encouraged. A few years ago, many were adverse to the practice of clipping, believing that it was dangerous to the health of the horse, but these are gradually being won over, until at the present time most horse-owners agree that the clipped horse is in practically no danger of colds, and that he does his work easier and in greater comfort than the animal struggling with the shedding of a heavy coat of hair, while all his energies are required in the work of soil tillage. The fact is, clipped horses are less subject to colds and such affections, thrive better, and, if properly blanketed, suffer less discomfort than their unclipped mates. The clipped horse dries off rapidly after the day's work, and is not, like the unclipped animal, compelled to rest with a blanket of shaggy, wet hair enveloping him—cold, clammy and uncomfortable. Horses are "soft" in spring. They perspire easily. The more hair they have, the more they perspire. The long hair, holding the dampness caused by the sweating, is liable to give them colds, rheumatism, pneumonia, or kindred diseases. This mass of cold, wet hair uses up considerable heat, which can only be supplied by the energy derived from the food consumed, all of which is required to meet the demands of body waste and labor. This condition is, therefore, a drain on the animal's constitution. The perspiration of a clipped horse evaporates quickly, almost as soon as secreted, and upon going to the stable at the noon hour, or at night, the animal rests in comfort, and is in a position to make the best use of his entire ration.

The clipped horse does not require as much attention by the groom as the unclipped, and in these days of scarcity of labor this is no mean consideration, as the teamster often is compelled to be stockman and chore-boy as well, hence, while he wishes to give all the time possible to the care of his team, he is often compelled to slight the cleaning. The unclipped horse suffers greatly from this. His matted coat of hair irritates him continuously, while the clipped horse, with no such a dirt accumulator, is kept quite clean, with comparatively little labor. It must be remembered that the condition of the horse's skin plays an important part in the general health of the animal. No skin can be kept clean with a mass of dirty, grimy, sweaty hair, holding all kinds of dust and filth to clog the pores. Why do people wear lighter garments in the warm weather? Because the winter clothing is uncomfortable, and not in the best interest of general health? For the same reason, the horse should be allowed to change his coat rapidly. Under natural conditions, he was not compelled to work, and suffered no inconvenience by the slow shedding of his heavy winter coat, but man has changed the conditions. The horse must be the motive power for moving implements, vehicles and machinery. This requires practically all his reserve energy. His body heats up higher than it would on the hottest day in summer under natural conditions, and yet he is compelled, very often, to wear his winter coat, because nature did not comply with the need created by man of its immediate removal. Protection, if needed, can be had in the form of a blanket, so that clipping is the only safe, sure and reliable means of solving the difficulty. Clip the horses and seed with comfort.

Size and Weight in the Stallion.

The man who is breeding draft horses cannot lay too much emphasis upon size and weight in the selection of a stallion to which to breed his mares. No stallion will prove too large, provided he possesses, with his great scale, a proportionate amount of quality, and is of the right conformation for the breed. Size does not necessarily imply coarseness. This latter condition should be carefully avoided in breeding. A coarse stallion will seldom get a fine-quality colt, even when mated with the smoothest quality of mare. There is, however, a scarcity of large geldings and mares, due largely to the use, in the past, of undersized sires. Conditions point to an increasing demand for the gelding possessing great weight. Bad roads demand such a horse to move the heavy loads, and the rush of the times, coupled with the scarcity of labor, makes it necessary to move heavy loads and save extra trips. There is no danger of getting the draft horse over-large. In the past, many undersized stallions have been used, and it is a law of breeding that an animal's ancestors have a very potent influence in its make-up. With the law of reversion working as it does, we are sure to have a large number of undersized horses for some time, even though nothing but large stallions are used; and all those who breed to the undersized horse are only perpetuating this undesirable class of animal. Of all the ancestors of the horse, none exert as great an influence on his conformation as his sire and