

herd prize in view in the coming big show of the year, and a check for \$300, the largest he had ever seen, rested in Tom's hand.

Tom led Sidelight over to the Landers' stalls, patted him again and again, and when he finally turned away he was fumbling in his pocket for his handkerchief. Having decided to leave for home that night, he went to the superintendent, who directed him to the secretary's office for his prize money.

The train reached the home station early in the

morning, and after securing breakfast at the lunch counter, he rode to the farm with the rural mail carrier. Alighting at the front gate he carried the home mail under his arm. His father met him in the yard and asked him what he had done with his steer. For reply Tom handed him the two checks, for \$375, and told him of the winnings. They passed joyously into the house and surprised his mother, who radiantly greeted him and when told of his winnings and sale of Sidelight, gave him a motherly caress. His father was opening the mail, and with some show of animation handed an

open letter to Mrs. Foster to read. She read the letter and with tears in her eyes, kissed Tom repeatedly. The letter was from Brown. It ran: "Tom won the judging contest and gets a scholarship at the Agricultural College. Good work. Thirty boys competed. Tom left the grounds before the decision was made. Congratulations." John Foster got up from his chair, and placing his hand on his son's shoulder, said: "Tom, we've been proud of you for a long time, but to-day we're a little prouder than usual."—FRANK D. TOMSON.

Automobiles, Farm Machinery and Farm Motors.

Second Year Drivers.

It is timely that those who have put in their first year of motoring should be instructed in what might be called post-graduate work. When you purchased your machine last year the agent gave you a certain amount of information regarding its operation and upkeep, but if the delivery was made during the busy season you certainly did not receive as much attention as if you had taken possession of your car during the quiet period, and so you were compelled to take a number of lessons from experience and to gather information here and there about matters that sooner or later developed tremendous importance. You can drive now, however, and to some degree or other you are in a position to cater to the requirements of your auto. We wish you to advance another stage and become proficient, or as they say in the United States, "smooth". Perhaps your first two or three trips found you releasing the clutch too quickly and forcing rather than feeling the gear shift lever in the changing of gears. Start right out now to get the ratio between the clutch pedal and the gear shift lever. If necessary go out on the road alone and practice with your car until you can get into high gear without making the slightest sound. A careless driver rattles the gears and annoys his passengers as well as any spectators but he does something far worse than this,—he jars his car from one end to the other. A machine is not built absolutely rigid. There must of necessity be considerable play in it from the crank shaft to the differential. This play makes for easy operation but if called upon too sharply results in damage to the chassis and the body. If you want a long life for your machine you must establish absolute freedom from strain. Thousands and thousands of miles of travel do not harm an auto if it is started smoothly, run with care and stopped without vibration. We have talked to motorists about this and they always agree that we are right and there is no argument, but the next thing you know they are jumping and jerking their cars all over

the road. Don't agree with a mechanical idea and fail to carry it out, for the loser is not the person who gives you good advice but the one who refuses to accept it. Vibration is the worst enemy of any mechanism. It is not only in the handling of the clutch and gear shift that you develop jerking movements but you accomplish the same purpose when you run on a rim, or on under-inflated tires, or allow your motor to misfire. A motor that is not giving an even series of explosions cannot be able to operate with an even flow of power and so you should take steps against the first signs of misfiring. You may have an air leak around the joint of the intake manifold. You can easily determine the existence of this trouble by spraying gasoline around the joints when the engine is turning over slowly. If your motor speeds up there must be a leakage for the manifold is taking in additional fuel. Perhaps your valve stem guides have become worn and if so this condition should be remedied without delay. Then sometimes the threads of the spark plugs do not fit tightly into the cylinders and the effect is misfiring. Spark plugs that have become dirty and carbonized cause uneven operation and should be cleaned without delay. Kerosene is an excellent cleanser for the points of spark plugs. If your platinum points are improperly set the motor will act strangely. It is always well to have the points examined at regular intervals. These cold days the ordinary gas causes a lot of spitting and spluttering and we urge the owners to heat up their motors before putting cars into gear.

An additional advantage accruing from the heating of the motor is the distribution of the oil. A machine that has been standing for some time gets rather set and the lubricant congeals. You get the easiest operation when the oil is flowing freely in all parts of the power plant. We said something at the beginning of this article regarding the stopping of a car. Do not bring your machine to a halt as if you were afraid of striking a wall or an iron fence. There is nothing gained by jerking up an auto. Perhaps a second or two is saved but if the life of your car is to be considered this small

space of time is certainly a costly item. In the vast number of cases you know the point at which you are going to pull up, so why not throttle down in plenty of time and allow the momentum to die? There is no sense in murdering it at the expense of the brakes and the entire structure of your auto. When you hear a strange sound coming from any part of your motor do not say, "Oh, I guess that will be all right," but make an immediate investigation, because sooner or later you will require new parts and it is well to remember that these do not work as well in conjunction with old worn parts as they do with those that have not been subjected to terrific strain.

We have preached a great deal about cleanliness in automobiling and we shall not dwell upon it in this article, other than to remind you again that care should be taken of the engine. The cleaner the motor is the softer it purrs. Demand that the valves be ground consistently, that carbonization be kept at a minimum, that the oil be changed regularly and that foreign matter be taken away as often as possible from moving parts.

AUTO.

An Auto Course.

Having secured great benefit from your magazine and being especially interested in the auto department, I write to you to find out where I could get a short course in the mechanism of an auto with the idea of becoming an efficient driver and repairer. I own a car myself and of course would like to become thoroughly familiar with repairing on it. Do you know of any such place in Toronto or a city nearer to Leeds County? I could not be away over a month, more or less.

M. E. M.

Ans.—The Technical Schools of Ontario are conducting automobile courses with nominal fees. Write the Minister of Education, Toronto, Ontario, for full information.

AUTO.

POULTRY.

Why Some Hens do not Lay in Winter.

If hens would only give sixty or seventy per cent. production during the winter months when eggs are selling around a nickel apiece, and would continue to lay during spring and summer when comparatively little attention is required, poultry farming would be a profitable undertaking. However, only a small percentage of farm flocks lay during the frosty weather; it is unnatural for them to do so. If eggs were gathered as freely during December and January as they are in April and May, spring prices would prevail during the winter, as supply and demand are the price-setting factors. Some flocks do lay when eggs are at the top price and give their owners a liberal profit. If one flock will lay why won't another, is a problem which bothers many poultrymen. The fault cannot be entirely with the breed, as representatives of most breeds have satisfactory winter egg records. There is a good deal, however, in the strain. Considerable selection has been made with practically all breeds. By mating the heavy layers with sons of heavy layers, and selecting the best pullets and again mating them with blue blood so far as production goes, the egg yield has gradually been increased, but in some cases at the expense of show qualities. Others select for the show-ring, giving little consideration to egg yield. It is somewhat difficult to get high production and show qualities combined in the one bird. If eggs are the aim then it is important that the breeding stock be descended from a laying strain. The flock may be bred right but yet not lay the desired number of eggs. There are so many things which might affect production that it is difficult to single out any one thing which might cause a low egg yield.

In the first place, it is unnatural for fowl to lay during the winter or to produce a large number of eggs in a season. Old hens or late-hatched pullets cannot be expected to lay heavily until near spring, even under ideal conditions of feed and housing. If eggs would be secured next winter, steps should be taken to have a number of pullets hatched during April or early May. These should be fed a ration which will keep them growing during the summer. As a pullet must reach a certain stage of maturity before she commences to lay, some late-hatched birds develop rapidly and commence laying early, but they are the exception rather than the rule.

The pea has a good deal to do with the thriftiness of the flock. Draft, dampness, and poor ventilation

are detrimental to the health of the birds and unhealthy birds are not the layers. Let sunshine and fresh air into the pen. Cotton permits the latter to seep through without causing a draft. Over-crowding must be avoided. The birds must have room to scratch freely and also room on the roosts. Over-feeding, under-feeding, lack of variety in the ration, no grit, green feed, meat, or water, will keep the flock from laying. Lack of any one of the above mentioned items may be the determining factor causing absence of eggs. With the present price of grains, there is greater danger of under-feeding than over-feeding. The materials which constitute the egg must be furnished the flock. If there is a deficiency in the raw material furnished, one cannot reasonably expect the birds to manufacture a large number of eggs, no matter if they have been selected and bred for heavy egg production. Some of the essential raw material, as meat food, is expensive and there are flocks which seldom have access to it. Grit and shell which are cheap are lacking in some pens, and yet eggs are looked for. One poultryman has a flock of pullets which looked healthy and were quite red about the head yet were not laying the middle of December. About that time he commenced feeding green cut-bone and meat scraps, which cost him five cents a pound. He fed at the rate of about one pound a week to ten birds. Within a week two of the pullets commenced laying, and towards the middle of January he was getting nearly forty per cent. production. This may not have been due entirely to the addition of meat to the ration, but we believe that it had something to do with starting the birds to work. If so, it paid to feed meat even at five cents a pound. Skim-milk is a substitute for meat which is available on many farms, and it is doubtful if there is any more profitable way of marketing this by-product of the dairy than feeding it to the flock. Lack of meat food in some form may be the limiting factor to production in many farm flocks.

Grain should be fed in a deep litter of straw so that the birds will have to work to get it. Exercise is essential to health and heavy production. It is surprising the number of poultry houses there are with bare floors. The birds pick up the grain quickly and then mope around until the next feed. They do not move around sufficiently to start the blood circulating properly. Wheat, corn, oats, buckwheat and barley make very satisfactory grain feeds. Hard grain is not enough; wet or dry mash or both are necessary. Some folk have the idea that a bird will over-feed if mash or grain is constantly before it. Such is not the case. The dry-mash hopper may contain rolled oats or a mixture of two parts bran, one part middlings, one part cornmeal, one part gluten meal, and one part beef scrap. The same material may be used in a moist mash, which should be fed occasionally. A little hot feed aids in

warming a bird up, but it should become warm by exercise in the morning.

Green feed of some nature is generally available on the farm, but it is not always fed to the fowl as regularly as it might be. Then, there is the matter of supplying the flock with a drink. An egg contains a large percentage of water, which is proof that water is a necessity and it should be clean. We know of flocks that are allowed to get their liquid refreshments by eating snow during the winter and going to the stock trough in summer. These flocks are not among the heaviest producers, however. Take the chill off the water on frosty days and if necessary fill the drinking fountains twice a day. If milk is available, have a fountain for it in the pen. Grit and shell are oftentimes overlooked but they are almost as essential to a laying flock as are the grain and mash. Regular feeding and careful attention to details are the price of success in poultry raising. If eggs are to be gathered during the winter the owner of the flock must be prepared to devote a little time to looking after the birds and furnish them with the proper housing and feed.

HORTICULTURE.

Setting and Caring for a Sweet Cherry Orchard.

At the last meeting of the Ontario Fruit Growers' Association, G. A. Robertson, of the Niagara District, gave a very comprehensive paper on the setting and care of a sweet cherry orchard. We reproduce here a part of it dealing more particularly with the purchase of stock, the setting of same and pruning the orchard.

Our future orchard should consist of trees procured from some honest, reliable nurseryman or grower. The first precaution is to be sure that they are true to name, and then it is necessary to see that they are grown on the Mazzard or sweet-root stock. Unfortunately, too many of our Canadian nurserymen use the Mahaleb stock; this is easier to grow in the nursery, but when planted in the orchard it makes a short-lived tree, as the butt of the sweet stock outgrows in diameter the Mahaleb root. The first noticeable effect is that some of the limbs on one side of the tree lack vigor, and finally die. This is followed by a rapid decline of the tree, and often a fungus breaks out at the surface of the ground where the root joins with the butt. I may also add that in cherries, as well as other fruits, the attention of careful bud selection is an item which has not been given due consideration. In California the failure of some of the lemon groves to produce remunerative crops has been investigated, and the shortage in the