learning to handle bees—get a good veil and smoker and go at it. When you make a mistake you will be stung, and being faithfully and constantly reminded of your mistakes in this pointed manner, and by using close observation, you will soon learn what your mistakes are, and, once learned, to avoid them, and handle your bees without dread; in fact, with practice it will become natural. Attention to the following points will, however, help much:

1. Have a *good* smoker that will give a large volume of smoke and respond quickly when required, and a veil of black (not white) brussels netting. Wear a straw hat and clothing that is not fuzzy.

2. Always smoke the bees at the entrance of the hive, before touching it, and in opening it separate the parts just a little at first, and at once drive in the smoke before opening it up or jarring it.

3. Don't allow your bees to come to the top of an open case and, as it were, look round; keep them down with the smoke, but do not use enough of it to make them act like a pot boiling over.

4. Avoid quick, jerking motions, or jarring the hive before smoking.

5. Open hives if possible from the rear, so as to keep out of the way of incoming bees.

6. If stung, at once destroy the scent of the poison; nothing angers bees more quickly than the scent of the poison from a sting.

7. Very often a solitary bee or two will keep annoying by buzzing about one's head; such should be promptly knocked down.

8. Never leave any part of a hive that is opened exposed so that outside bees can get at it, unless it be constantly protected with smoke. If this be not carefully observed when there is no honey to gather, a swarm of pestering robbers will soon compel you to quit work, and perhaps do damage.

9. Try and have as much of the handling as possible done while the honey flow is on. It is much easier to do it then than when the bees are idle.

10. Colonies that are nervous, cross and hard to handle should be requeened.

A. E. HOSHAL.

Lincoln Co., Ont.

QUESTIONS AND ANSWERS.

[In order to make this department as useful as possible parties enclosing stamped envelopes will receive answers by mail, in cases where early replies appear to us advisable; all enquiries, when of general interest, will be published in next succeeding issue, if received at this office in sufficient time. Enquirers must in all cases attach their name and address in full, though not necessarily for publication.]

Veterinary.

Coughing Young Pigs.

JOHN D. PAUL, Lambton, Co., Ont.:—"I have a litter of young pigs three weeks old. I notice some of them are coughing considerably the past day or two; otherwise they seem to be all right. Can you tell me what ails them or prescribe a remedy?"

[The usual causes of young pigs coughing are too close confinement, dirty bedding, damp or drafty pen. We have never known young pigs to cough when outdoors in summer, when sunshine, green food, mother earth, and plenty of exercise were *ad libitum*. These conditions should be supplied as far as possible. A daily run in a dry yard should be allowed, and the sow should be given sods, charcoal and salt, and her food should consist of such as roots and shorts. She should have clean, dry bedding, in not too warm building, but free from drafts. It is almost useless to administer medicine to a young pig. It is just possible the pigs have worms, and if so they should receive, when old enough to feed at a trough, half a teaspoonful of creoline for each pig in their feed.]

Miscellaneous.

Queries re Butter-fat and Breeds of Swine and Sheep.

"IGNORANT," Toronto, Ont.:—"1. Can the amount of milk and butter a cow will give in a year be even approximately determined from a 7-day test; if not, of what practical use are such tests?

"2. On page 391 you say that the Guernsey cow Irma 'came into Mr. Butler's hands with a record of 70 lbs. milk per day and 3 lbs. butter, and Mr. Butler says although she has never been conditioned for a test with them she has produced over 40 lbs. milk, testing 6.8.' Now, 40 lbs. milk testing 6.8 per cent. equals 3.2 lbs. butter, 85 per cent. fat. Does, then, the extra feeding of whatever it is that constitutes the usual preliminary to a test merely increase the volume of milk without increasing the weight of butter-fat contained therein?

"3. What is the usual percentage of fat in cream as supplied to confectioners, city customers, etc., and what does a gallon of such cream weigh? What is meant by a 'double cream'? How much butter-fat does it contain, and what does a gallon weigh? What is the weight of a gallon of ordinary Jersey or Guernsey milk, say 6 per cent. butter-fat?

"4. It is often stated that Tamworths and Improved Yorkshires are the best breeds for producing the lean bacon now in demand, and the other large breeds put on too much fat. Friends of the other large breeds deny that this is the case with hogs of 150 to 200 pounds, the weights at which packers' pigs are usually sold, and say their pigs only get too fat if kept till much older; that Poland-Chinas, Chester Whites, etc., produce as fine bacon at 150 to 200 lbs. weight as the English breeds first mentioned, and with less feed. Which is right?

"5. Southdown breeders claim that their sheep produce finer mutton than any other breed. Breeders of other sorts say this is only true of *mutton*, which is largely eaten in England, but that nearly all the sheep eaten on this side the Atlantic are *lambs*, and that Southdown lambs furnish no better meat than any other. Which is correct?"

[1. Yes, the amount of milk and butter which a cow will produce in a year may be approximately estimated if the seven-day test be conducted about *the middle of the period of lactation*. If conducted at the *beginning* of the milking period and when all the conditions are most favorable for a large milk yield it would be more difficult to estimate the yearly production. If the correspondent wishes further information on this point see "American Dairying" (by H. B. Gurler), pp. 18 and 19.

The practical use of such tests is mainly to show what a cow can do in seven days, and it is natural to suppose that if a cow can make a large record for one week she will be able to give a good account of herself during the whole year. This assumption may or may not be correct. Usually it is a fair basis on which to judge of the capacity of a cow when *all the conditions are favorable*. (We are aware that it is not safe to conclude that because a horse can trot a mile in two minutes he can trot thirty miles in an hour; but the cases are somewhat different.)

2. The extra feeding and care which is usually given to a cow previous to and during a test period increases, or ought to increase, the volume of milk given if the cow has not previously been up to her full capacity. In the case cited, suppose that by extra care and feeding the volume of milk given was increased from 40 lbs. to 45 lbs., and the percentage of fat remained the same, viz., 6.8, the owner would thereby have increased the pounds of fat from 2.72 to 3.06 and the pounds of butter from 3.2 to 3.6 (85 per cent. fat). So in answer I would say that by increasing the volume of milk the weight of butter-fat is also increased, assuming that the percentage of fat remains the same, which it would be likely to do under normal conditions.

3. The percentage of fat in cream supplied to confectioners, etc., would probably range from 15 to 25 per cent., averaging 20 per cent. A gallon (imperial) of such cream would weigh about ten pounds.

We do not use the term "double cream" in our work. I presume that it refers to cream having a "double" or extra amount of butter-fat in it—very rich cream, very thick cream, etc. I suppose that such cream would contain from 30 to 35 per cent. of fat. Theoretically, such cream would weigh less per gallon than thin or ordinary cream. I doubt if the average scale would show any difference, though I have never tried such an experiment. Again, I would say that theoretically a gallon of Jersey or Guernsey milk (6 per cent. fat) would weigh less than a gallon of ordinary milk, because butter-fat is lighter than the other parts of the milk, and the more butter-fat in the milk the less it weighs per gallon. Such milk, in ordinary commence, may be said to weigh ten pounds to the gallon, or the same as water. Scientifically, a vessel which holds 1,000 pounds of water would hold 1,031 pounds of average milk, because the specific gravity, or weight, of milk is about 31 thousandths greater than water at 4° C. and under ordinary atmospheric pressure.

It is difficult to make these points clear in the short space and time at my disposal. I would advise your correspondent and all readers of your excellent paper, the ADVOCATE, who desire a full knowledge of the many questions which arise in modern scientific and up-to-date dairying to take a portion or all of the dairy course which commences at the O. A. C. on Jan. 4th, 1898, and continues until March 25th. These and many other problems will be discussed and fully explained by the college staff and by the best staff of dairy instructors that can be found in America. We shall be glad to send circulars giving full information in reference to the dairy course to any who may ask for them.

H. H. DEAN.

Ontario Agricultural College.

Your correspondent asks some very difficult questions, and it will afford me very much satisfaction if some one would come forward with full and satisfactory answers to them. Regarding hogs, we have conducted experiments both last year and this with hogs of six different breeds, viz., Poland-China, Chester White, Duroc-Jersey, Tamworth, Yorkshire, and Berkshire, and I feel that the question is far from settled yet. The experiments so far indicate that the Tamworth and Yorkshire produce a larger proportion of lean meat, though I have not yet received the packer's report on this year's lot. As for economy of gain, last year they stood in the following order: Berkshire, Tamworth, Poland-China, Duroc-Jersey, Chester White, and Yorkshire. This year, however, the order has been somewhat changed, and they stand in the following order: Berkshire, Tamworth, Poland-China, Chester White, Yorkshire, and Duroc-Jersey, the Chester White and Yorkshire being practically even. It is the intention to carry the work further for the purpose of studying the characteristics of the different breeds, though it is not expected that any one breed will prove superior to all other breeds in every respect. A breed can be greatly modified by selection, and in the hands of the skillful breeder no doubt any of the breeds mentioned can be made to give satisfactory results.

But the hog of commerce differs very materially from the pure-bred animal, and this opens up the question of cross-breeding, with all the numberless combinations that can be formed. It seems to me that the profitable farmer's hog is to be evolved from cross-breeding, and in this field there is room for all our breeds of swine. By judicious mating, the coarse bone, rough skin, weak bone, lack of size, over-production of fat, and other faults can all be modified, while we have need of the pure breeds to supply material for crossing. This side of the question might be followed much further, but space will not permit. Your correspondent implies, perhaps unintentionally, that the Tamworth and Yorkshire are not large breeds. If they are not large breeds, then no large breeds exist.

As regards sheep, we must not lose sight of the fact that most of the sheep eaten on this side of the Atlantic are not pure-breds, and it seems to me that it would be a difficult task for the average man to distinguish between Southdown grade lamb chops and those of other Down grades. As in the case of swine, it seems to me that there is room in Ontario for all of our improved breeds of sheep. The differences in soil, differences in requirements of breeders, peculiarities of the market which we aim to supply, and many other differences, all combine to complicate the question and to give the thoughtful breeder ample scope for his ingenuity.

Perhaps someone else can answer these questions more fully. For myself, I do not hesitate to confess that there are many things about sheep and swine that I don't know, and whenever I hear a man claim that this or that breed is superior to all others, I always think that there are also some things which he does not know.

G. E. DAY.

Ontario Agricultural College.]

When May Silo be Opened?—Need Silage be Weighted?

H. N. CROSSLEY, Muskoka District, Ont.:—"1. Could you give me any information as to the time now considered necessary to keep corn in the silo before use? When I just started to make ensilage it was held to be necessary to let three months elapse before using. As we do not get our corn in the silo before the first of October, this principle only allows us the use of corn on the first of January, whereas we would like to use it about the first of December. 2. I would also like to get your opinion about the respective merits of weighting and not weighting silos. Ours has always been weighted with a layer of good-sized stones, but some farmers tell me that they do not now weight their silos at all. We have a Portland cement silo here; *i. e.*, cement on the face of stone walls."

[1. It is now generally conceded that no advantage whatever arises out of waiting any length of time after filling the silo before commencing to feed the ensilage; in fact, it is considered an advantage by many to commence feeding at once in order to save the loss of the top layer, which ordinarily goes to waste. The fodder is equally as good when new as after it has gone through the heating process. 2. It is now considered wasted labor to weight silage in any way. The simplest and most effective covering was found by Mr. Wm. Rennie, farm superintendent of the Agricultural College Farm at Guelph, to be a cotton sheet soaked in oil, thus impervious to the air. The silage is allowed to settle for a few days after filling, and after thorough tramping the oiled sheet is spread over the surface and tucked down at the edges. Another common method is to sprinkle on several pails of water with a watering can, which induces a dense, matlike mold, when only a few inches will go to waste. Others, again, put on no covering whatever, but give the surface a thorough tramping every two days for two weeks, when not more than five or six inches of silage wastes. These questions and hundreds of others are satisfactorily answered in Prof. Woll's book on silage, which we give in paper covers for fifty cents or one new subscription, or in board covers for two new subscriptions or one dollar.]

Dehorning Cows.

E. VANDERHOOF, Leeds Co., Ont.:—"I would like to get your advice about dehorning milking cows. As I am milking cows all winter, I would like to know if dehorning them will make any difference to the amount of milk they are giving, or if they will fail any in flesh?"

[It has been time and again demonstrated by actual test that cows neither lessen in milk flow to any extent after dehorning nor do they fail in flesh. While the operation is in progress, from a few seconds to one or two minutes, they evidently suffer considerably, but after it is over they seem to know no difference whatever, but go on feeding, etc., as though nothing had happened. We believe the actual suffering from the operation, if properly done by a fine-tooth saw or a modern clipper, is very much overestimated. It would be well at this season to avoid leaving newly-dehorned cows out in the cold long enough for them to become chilled, as such may delay the healing of the wound.]

Gasoline Engine.

SUBSCRIBER, Hastings Co., Ont.:—"1. Would a gasoline engine be an advisable power for a farmer to have? 2. Are they likely to be durable? 3. Why have they not been used more?"

[In this issue of the FARMER'S ADVOCATE, among other letters on farm powers is one on the gasoline engine which answers "Subscriber" fairly