

resolution declaring the lactoscope to be the property of the club, the latter shall be responsible to the Council for \$2.00 in case of breakage of the instrument, or any part thereof.

Should the club decide upon testing one or more cows for registration in the Council's Herdbook, the tests shall be made under the following rules and regulations:

1. The quantity of milk shall be weighed. If the owner of the cow has scales, the daily yield of milk in pounds shall be recorded not less than once each week during the whole period in which the cow gives milk, and the morning's and evening's yield shall be recorded separately.

2. If the owner has no scales, the quantity of milk shall be determined in the following manner: A wooden pail shall be provided, and the club, or a committee thereof consisting of not less than three members, shall place the pail on an accurate pair of scales, causing the scales to balance; three pounds of water shall then be poured into the pail, and an indelible mark, made by a hot iron or otherwise, shall be indented into the pail (inside) just level with the upper surface of the water, care being taken that the pail stands exactly level. Three more pounds shall then be added, a similar mark made, and the process thus continued until the pail is full of water, a large mark being made every ninth pound, in order to facilitate the counting. The most accurate way is first to stick a pin into the pail at each 3-lb. gauge, making the indelible marks after the pail is empty. A corresponding row of marks shall be made on the opposite side of the pail. This pail shall be used instead of a pair of scales, for determining the quantity of milk, and the milk shall be recorded according to rule 1—with this exception, that the daily yield shall be recorded *twice* every week, and the milk shall be strained, or allowed to stand a short time, in order that the froth may not interfere with making accurate observations. It shall not be necessary to record any fraction of a pound; under one-half pound shall count nothing, over one-half shall count a whole pound.

3. The quality of the milk shall be determined by the lactoscope. A committee of not less than three members of the club shall be appointed, who shall control the lactoscope, and whose duty it shall be to visit the owner of the cow not less than once in two weeks, either in the morning or in the evening, to test the quality of the milk, to see the cow milked and the milk weighed, comparing their weights with those made by the owner, to see if the cow is in a healthy condition, to ascertain as near as possible the ration fed, and to report the results to the club. The owner shall not know beforehand when the committee are to pay their visits. Should a material discrepancy appear between the figures of the owner and those of the committee, a special committee of investigation shall be appointed, who shall report to the club. A majority of the members of any committee, regular or special, shall form a quorum, but the owner shall not be a member of any committee appointed to test his own cow. The date of every record, both for quantity and quality, shall be kept. In all cases of lactoscope tests, the cow shall be thoroughly milked, and the milk strained or thoroughly stirred before a sample is taken for analysis.

4. It shall be proper for any member, without being appointed by the club, to visit the owner of the cow in the same capacity as the regular committee, and his reports to the club shall have the same force and effect as those made by the regular committee, and the demand of any such member, after reporting his observations, to appoint a special committee of investigation, shall not be rejected by the club.

5. The committee shall report progress to the club at least once in two months, or, in case of adjournment of meetings of the club, once in three months; the secretary of the club shall send a synopsis of the reports to the Dominion Farmers' Council at least once in four months, and a final report at the conclusion of the test. If the reports are satisfactory, the cow will be recorded in the Council's Registry.

SPECIAL OBSERVATIONS.—The Standard not yet being fully decided upon, the clubs may make preparatory tests, in their own way, of a number of cows in their locality, with the view of adopting the

foregoing rules and regulations, commencing say in the spring of 1888, to be continued throughout the season, or they may adopt the rules and regulations during the coming season, commencing about a week after the cow drops her calf. The present standard is 4 percent of fat for the *quality*, and 5½ times the weight of the cow for the *quantity* of the milk, but this Standard is liable to be changed or modified, especially in such a manner that a lower percentage of fat may be made good by a corresponding quantity of milk, and *vice versa*. The clubs should discuss these rules and regulations, and suggest any changes that may be desirable. They may adopt more stringent rules if they choose; the more stringent the rules, and the oftener the tests are made, the more confidence will the community have in the tests. If the club has a lactometer and a thermometer, the value of the tests would be increased by taking the specific gravity of the milk with each analysis by the lactoscope. Where only a few cows are being tested, it is desirable to leave the lactoscope with the owners of the cows as long as possible, and let them make a lactoscope test with each weighing of the milk; this will also increase the value of the test, but will not interfere with the duties of the committee with reference to the lactoscope tests. In this case it will be the duty of the committee to compare their analyses with those of the owners, and report thereon in the same manner as with the weighings. During changes in the weather, or changes in the ration, it is desirable to make the tests oftener than under regular conditions.

WORK FOR AMALGAMATED CLUBS.

JOHN KENNEDY.—Judging from the "objects" adopted by the amalgamated clubs and the correspondence read, they seem inclined to undertake experimental work, and appear willing to undertake any work placed in their hands. There are many valuable experiments which farmers could conduct which would cost them no money, and little or no extra effort. Very few farmers know how much capital they have invested in their business, and they know less about how much it costs to raise their products. In many instances the gains made in raising some kinds of crops are cancelled by the losses in others, and still the business goes on from year to year without any knowledge of these facts. Agriculture can not become profitable to the masses of farmers until they take a more business-like view of their operations, and adopt certain standards to guide them in calculating the cost of production. I think this Council, with the aid of amalgamated clubs, could make certain estimates of the capital invested in 100 acre farms—stock farms, dairy farms, and mixed husbandry farms—and also estimate what the various tillage operations cost in order to establish standards bearing on the cost of production.

PRESIDENT LEITCH.—The suggestions made by our treasurer are good ones, but we must be cautious not to impose more work on the clubs than they are willing to undertake. We have all sorts of scientific standards which are as yet little or no use to us, and we should go vigorously to work and establish practical standards of our own, which would be of immense value to us. If we wait till our agricultural professors undertake the work, we shall wait a long time, the results would not be satisfactory, and it would cost us a lot of money, while, with a little effort, we could establish accurate standards with no expense to ourselves or anybody else. For my part, I am very willing to bring in an estimate, based upon my own experience and observations, of the capital invested in a dairy farm, the soil being light, and other members of the Council should be willing to bring in estimates of stock farms and mixed husbandry farms. We should also be pleased to receive estimates, for the sake

of comparison, from our amalgamated clubs, and a general average should be struck. If these clubs are restricted as to time, it would be well for them to appoint a committee to do the work, and send us an average of their estimates. From the Granton Farmers' Club we might get an estimate of a stock farm, and from the other Clubs an estimate of a mixed husbandry farm.

The question was discussed and the plan was approved of. It was agreed to submit the following suggestions to amalgamated clubs, the Council also carrying on the investigations at the same time: Give the value of 100 acres, the number of acres cleared, the acreage in pasture, grain, roots, fodder, etc.; the value of the buildings; the number, kind and value of the stock; the kind of machinery, implements and tools and their value; the size of the orchard, including the number of trees; the size of the garden, including vegetables and small fruits. In each case, the character of the soil (heavy, medium or light) should be stated, and the large implements should be valued separately, while the tools and all small articles may be lumped together in one sum. Estimates also to be made of the cost of the various tillage operations; such, for example, as the acreage plowed per day (stating the number of hours) in a heavy, medium and light soil, stating the width and depth and length of the furrow, the condition of the soil while being plowed (wet, dry, baked, etc.), and the kind of team (heavy draft or general purpose). The clubs may take their own time in sending in these reports, and the estimates should be as accurate as possible. With reference to the estimates in tillage operations, the time occupied to plow, harrow, seed or cultivate an acre, or any number of acres, should be taken from accurate observations made by the farmer who sends in his report to the club, and care should be taken not to receive any reports as to the time occupied to perform any of these operations except when the work can be continuously performed from day to day, and not what can be performed in a single hour or day. These investigations should be continued throughout the spring and summer months.

It is to be hoped that the clubs will willingly co-operate with the Council in this work, or discuss what part, if any, they are willing to undertake, sending occasional reports to the Council. The results of these investigations will be published in book-keeping form, so that farmers can see at a glance what the average cost of producing farm products is.

Professor J. W. Sanborn, of the Missouri Agricultural College, is said to prefer Fultz to any other of the 150 kinds of wheat with which he has experimented.

Professor W. A. Henry, of the Wisconsin Agricultural Experiment Station, says of quack grass: "Plow it under, hoe it up, cut off at the surface of the ground every green stalk, and it must die as surely as an animal will when air is withheld."

A horse shies because he sees something which he does not understand. It may be some new or unusual object that the horse sees, or it may be an imperfect view of one. Even a familiar object, if it comes to view suddenly and unexpectedly, will cause a horse to shy or jump, just as an unexpected object or sound causes a nervous person to start. Harsh treatment only aggravates the matter. The more the horse is scolded and whipped, the more nervous he gets; and every time he passes the place where the fright and whipping occurred, he will recollect the unpleasant affair, and he will begin to prick up his ears and fidget, ready for another jump. The proper way is never to strike or scold a horse that is startled or frightened. Speak to him coolly, calmly, and kindly; give him time to see and collect his scattered senses, and make him feel that you are his friend and protector. When he sees that all is right, there is an end to all further trouble.