

(1) The food for the year consisted of pasture, 800 bushels of mangels, silage and alfalfa—none of which can be considered the special food of any particular time, because the silage lasted well into the summer, and the alfalfa throughout the year.

Pasture consisted of 30 acres of land in good condition, and furnishing good grass all summer—clover and timothy. It was worth \$1 per month per cow, or land and all would probably rent for \$2.50 per acre. At the former figures the total cost of 12 cows would be \$72.00; at the latter figures, \$75.00. We will accept the latter figures as maximum cost.

We had five acres of ensilage corn, sown in rows 3 feet apart and 10 rods long; two rows made a load, weighing from 3,000 to 3,100 lbs. It cost as follows:

Seed .....	\$ 1.80
Seeding (man and team), 5 days, at \$4. ....	20.00
Planting, hoeing and cultivating, 23-52. ....	46.00
Cutting .....	8.00
Filling silo .....	27.00
<b>Total .....</b>	<b>\$102.80</b>

Mangels in this neighborhood may be either bought or sold at 10c. per bushel, although we believe the cost of production may be slightly less. Say, then, 800 bushels, at 10c. .... \$80.00

From five acres of alfalfa, in three cuttings last year we secured 39 tons of hay. This year we secured 4 tons more. The actual cost last year was:

Maximum rent .....	\$ 25.00
Labor in storing .....	36.00
<b>Total .....</b>	<b>\$ 61.00</b>

(2) The expenses incidental to feeding, milking, churning, printing and marketing the butter are made up as follows:

Milking, 2 hours per day for 365 days=73 days. Now, we have a man by the year, at \$225 per annum. Sometimes two do the milking; sometimes three hands are available. We will pay the highest marketable price for farm labor; say \$1.50 per day for 73 days. .... \$109.50

Churning, daily, 2 hours per day per year (twice Monday)=73 days. This labor is worth, say, \$2.50 per day. .... 182.50

The extra labor churning, feeding and watering we will consider offset by the possession of the manure, with a balance due the credit side but not counted. .... \$292.00

We will now add a doubtful expense, that of marketing. Our other affairs call us to market once per week, and therefore this load of butter costs us nothing extra. However, it is really an expense from a business point of view, and requires one-half day per week.  $52 \times \$1.50 = \$78.00$

Silo .....	\$102.80
800 bushels mangels .....	80.00
Alfalfa .....	61.00
Dairy labor .....	292.00
Marketing .....	78.00
<b>Total cost .....</b>	<b>\$613.80</b>

Let us now turn for a moment to the other side of the question—the credit side.

We have a yearly contract of delivering 105 lbs. of butter a week, at 25c. per lb. These 12 cows during the year never varied more than 3 lbs. from that amount. When they did vary, the amount was made up or deducted, as the case might be, from those cows not in the test, but was as faithfully and accurately repaid. Thus the test was maintained and the market supply sustained at the same time.

The following is the statement of monthly milk produce and test of butter-fat:

	Lbs. milk.	Lbs. butter-fat.	Butter to nearest point.
1909.			
April .....	10,819	378	451
May .....	11,261	390x	469
June .....	10,927	382x	459
July .....	11,161	391	465
August .....	11,060	386	460
September .....	10,675	374	442
October .....	11,140	390x	465
November .....	10,796	378x	449
December .....	11,060	387	460
1910.			
January .....	11,258	394	470
February .....	9,980	349	416
March .....	11,264	391	468

There is a balance of 5 ozs. due the Dr. side of this account in order to make up the 52 weekly shipments of 105 lbs. each, thus making the total butter production 5,474 lbs. 11 ozs., at 25c. lb. .... \$1,368.40

Add to this 12 calves, 7 of which were

butchered and sold for .... 59.25

And 5 heifers, worth now .... 50.00

These are all profit, because they were fed out of the feed already charged to the account of the food for the cows and on milk from these cows, some before separating, more after separating. The remaining separated milk is fed to the pigs, and is worth 50c. per day, but I place opposite this the extra care of the calves and the extra care of the cows at calving time. We consider this work well paid at that.

An inventory of feed on hand at close of year (as estimated in cost) .... \$38.50 (Four loads of hay already charged was sold for \$60.00, and the proceeds invested in chop and bran, which was fed to the cows, and so does not affect the standing of the account.)

We will now summarize the credit side of the account, as follows:

5,478 lbs. 11 ozs. butter, at 25c. ....	\$1,368.40
7 veal calves .....	59.25
5 heifer calves .....	50.00
<b>Inventory .....</b>	<b>38.50</b>

<b>Total receipts .....</b>	<b>\$1,516.15</b>
<b>Total cost (see above) .....</b>	<b>613.80</b>

**Net gain .....** **\$ 902.35**

Farmers, like all other good Canadian citizens, must be ready equally to lend a helping hand to their neighbors, or to do an odd turn for himself, without rushing in haste to charge it up; otherwise there would be many a heartache as well as backache, that would total high. However, taking all in all, you will find a liberal allowance, both in wages and in manure—to say nothing of the skim milk—for all extra labor that could possibly be demanded.

We are now in a position to answer several questions.

What does it cost to feed a cow for a year?

$$\frac{613.80 - 38.50}{12} = \$47.94 -$$

approximately \$40—\$45, making allowance for calves' food out of the above.

What does it cost per cwt. to produce milk?

$$\frac{100}{131401} \times \frac{(575.30 - (182.50 + 78.00))}{1} = 24c. \text{ [approx.]}$$

What is the returns per cow?

$$\frac{1368.40}{12} = \$114.03\frac{1}{3}$$

What is the profit per cow?

$$\frac{902.35}{12} = \$75.20 \text{ (app.)}$$

All other necessary answers may be obtained from the accounts above.

A word in closing. Will any herd under proper conditions do this? We answer decidedly no. This herd is the result of nine years' careful selection and weeding of Holsteins. The highest test is 4.8 and the lowest is 3.3, and this year shows a decided improvement over last.

We do our own testing, and the figures, though serviceable to us, may not stand the scrutiny of those who go more into theory and scientific research. However, they have stood the greater test of practical experience, and where in some cases spilling or waste may have caused the butter-fat to vary from the corresponding pounds of milk, or the number of pounds of butter-fat to vary from the corresponding pounds of butter-fat, still we would say that the butter was there, sold and paid for. This, then, is a little theory attested by many facts, and vouched for by practical experience. Whether or not buttermaking pays depends upon a man's interpretation of the word "pays." It looks good to us. Are we too easily satisfied? WM. J. MAIN

Wentworth Co., Ont. (Johnston & Main.)

## GARDEN & ORCHARD.

### Ontario Entomologists Confer.

The forty-seventh annual meeting of the Ontario Entomological Society was held at the Ontario Agricultural College, Guelph, on Thursday and Friday, November 3rd and 4th. A large number of prominent entomologists were present, and took an active part in the meetings.

Thursday morning, a business meeting of the Council was held, at which Prof. C. J. S. Bethune was made an honorary life member, in recognition of his long and devoted services in the interests of the Society.

### INSECTS OF THE YEAR.

On Thursday afternoon, the directors' reports on the insects of the year were read, and Dr. C. Gordon Hewitt (Ottawa, Canada), and L. Caesar, Ontario Agricultural College, discussed the more important injurious insects, while Dr. Hewitt took up the most numerous ones noted throughout Canada.

J. B. Williams, reporting for No. 3 Division, Toronto, called attention to the prevalence of the Tussock Moth in Toronto during the season, and to the fact that, while the city authorities had done something towards controlling this pest on the city streets, private property owners had neglected it, and, therefore, its numbers were but little diminished. Mr. Morris reported the pear tree slug and the apple maggot or railroad worm as having been bad in the Port Hope district. R. C. Treherne, reporting for the Niagara district, stated that the codling moth had been very bad. The San Jose was reported as increasing, and spreading to new orchards in the Glengarry district. Other insects reported as serious in this district were the shot-hole borer, the plum curculio, apple aphids, the snowy tree cricket on raspberries, and a wood-boring wasp working in the pith of young sweet cherry trees, making it necessary to rehead them.

Mr. Caesar, in dealing with "The Insects of the Year in Ontario," stated that the results of spraying in Ontario during the season had been exceedingly satisfactory, and that the codling moth and apple scab had been serious only in unsprayed or poorly sprayed orchards. The lesser apple worm, he stated, had been present, and had done considerable damage in a few districts. A large amount of damage had been done to apples by the plum curculio this fall, especially in neglected orchards.

One grower had reported 15 tons of unsalable apples, due to the work of this pest. The apple maggot, or railroad worm, was also very bad. Mr. Caesar reported finding it all through Ontario, from Trenton to Pickering, and in the Niagara district. It attacked Snows, Spies and Alexanders, as well as Talman Sweets. The cherry fruit fly had been plentiful in one locality of the Niagara district. The cherries attacked showed no sign of the pest on the outside, but, when ripe cherries were opened, little white maggots were found in the flesh inside. This insect, Mr. Caesar said, bred and increased on the wild cherries in the district, and from them spread to the cultivated ones. The blister mite was on the increase, there being hardly a district in Ontario where it is not now found, and in many orchards during the past season it fairly covered the leaves. Mr. Caesar thought it might be a blessing in disguise, as it might be the means of inducing more men to spray. The fruit-bark beetle, Mr. Caesar stated to be on the decrease in Ontario, due to the fact that it had been kept in check by a Hymenopterous parasite. The pear psylla was worse this year than for many years in the Niagara district. The black-berry leaf-miner had spread over the Province, and was quite a serious pest. Other insects of the season mentioned by Mr. Caesar as doing serious harm, were wireworms, white grubs, pea aphids, and the spruce gall louse.

Dr. Gordon Hewitt discussed briefly the serious insect pests in Canada during the past year, omitting those taken up by the directors or Mr. Caesar. The red spider, he stated, had been very serious on hops in British Columbia, reducing the average yield per acre from 600 or 700 lbs. to 200 lbs. One egg-mass of the Brown-tail moth had been found during the season at St. Stephen, in New Brunswick. In Nova Scotia, the area infested by this pest had been slightly decreased, and an active campaign was being conducted against it. The winter webs were being destroyed, and a rigid inspection of imported nursery stock was being made. The narcissus fly, which is a serious pest in Holland, had done a large amount of damage to narcissus bulbs in British Columbia during the past year. The spruce-bud worm was on the increase, and experiments were being carried on to learn more regarding its life-history and its parasites. The white-marked Tussock moth had been very bad, especially in the cities of the Maritime Provinces. In Halifax, a civic league had been formed to fight this pest. In New Brunswick and British Columbia the forest tent caterpillar had done serious injury to forest trees, and around Rideau Lake and along the north shore of Lake Superior the green-striped maple worm had wrought serious damage to the maple trees.

FRESH-WATER FISHING AN IMPORTANT INDUSTRY.

On Thursday evening a public meeting was held in Massey Hall. Prof. C. C. James, Deputy Minister of Agriculture, occupied the chair, and a large audience was present to hear the address by Prof. Needham, of Cornell, on "The Role of Insects in Water Life." Prof. Needham's remarks were of great interest, and profusely illustrated by most excellent lantern pictures. He pointed out the great importance of a knowledge of aquatic insect life, in order that the fisheries of Canada and the United States might be preserved and increased. The waters of Canada and the United States, he stated, were as productive, acre to acre, as the land, and the fresh-water fishing might be made as important an industry as agriculture, lumbering or mining. As yet, however, it had been largely neglected, and people were just beginning to realize that if this industry was to thrive, more must be learned about the insect food of fishes, and the best