A RESUME OF RESULTS.

| | Lot I. | Lot II. | Lot III. | Lot IV. | Lot V. |
|---|---|---|---|---|---|
| First period (56 days) | | | | | |
| Average daily gain | 1.711 lbs. | 1.875 lbs. | 1.799 lbs. | 2.046 lbs. | 1.656 lbs. |
| Cost per pound of gain | 11.80 c. | 6.524 c. | 7.161 c. | 8.164 c. | 8.291 c. |
| Daily cost of feed | 20.090 c. | 12.231 c. | 10.709 c. | 13.243 c. | 13.736 c. |
| Second period (84 days) | | | | | |
| Average daily gain | 1.691 lbs. | 1.809 lbs. | 1.495 lbs. | 1.622 lbs. | 1.967 lbs. |
| Cost per pound of gain | 13.79 c. | 12.62 c. | 11.174 c. | 11.81 c. | 12.717 c. |
| Daily cost of feed | 23.33 c. | 22.85 c. | 21.06 c. | 24.16 c. | 25.04 c. |
| Total period (140 days) | | | | | |
| Average daily gain | 1.699 lbs. | 1.83 lbs. | 1.674 lbs. | 1.87 lbs. | 1.844 lbs. |
| Cost per pound of gain | 12.97 c. | 10.131 c. | 10.104 c. | 10.55 c. | 11.124 c. |
| Daily cost of feed | 22.043 c. | 18.604 c. | 16.92 c. | 19.79 c. | 20.52 c. |

The operations in these feeding trials led the experimenters to conclude that silage added to the ration renders the feed more digestible. There is a marked difference in the lots, for the first period when the feed, cost of producing one pound gain, and the daily cost of feed are compared. The cost of producing a pound of gain in lot I. is 11.8 cents, as compared with 6.52 cents for lot II., from which the cheapest gains were made. The second highest cost is 8.29 cents for lot V., for which both alfalfa hay and cottonseed meal formed a part of the ration. The daily cost of feed per steer was also greatest in lot I., being 20.09 cents; lot II. was 12.23 cents; lot III., 10.7 cents; lot IV., 13.24 cents, and lot V. 13.73 cents per day.

The feeding of expensive grains and no silage in lot I. made the daily cost of feed very much higher than that of any of the other lots. It also showed that a ration of corn stover, mixed hay, corn and wheat bran is inefficient as compared with the ration made up largely of roughage during the early feeding period, in which silage was the main roughage.

The daily cost of feed was lowest in lot III., where corn silage and alfalfa hay alone were fed. The daily gains made by this lot were not sufficient to indicate it as the lot in which a pound of gain was produced at the lowest cost. Lot II., fed corn silage and cottonseed meal produced the cheapest gain. The addition of mixed hay in lot IV. increased the daily cost of feed as well as the cost of a pound gain. The writers of the bulletin say, "It also indicates that mixed hay at $12.00 per ton is more expensive as a roughage than corn silage at $3.50 per ton."

As a result of additional grain in the ration, the feed cost of producing 100 pounds of gain materially increased in all lots for the second period, except lot I. The increased cost of producing 100 pounds of gain during the second period was $1.99 for lot I., $6.07 for lot II., $4.01 for lot III., $3.64 for lot IV., and $4.42 for lot V.

The cost of producing a pound of gain is very uniform for the silage-fed lots, especially lots II., III., and IV. The production of a pound of gain in lot V., to which the greatest amount of protein was fed, became more expensive than where a smaller amount was consumed. In this regard lot I., which received grain from the beginning and which was fed bran as a source of protein, was the most expensive. The cost of producing 100 pounds of gain for the entire period in lot I. was $2.87 greater per hundred compared with the cheapest of the other lots, and $1.85 higher than the most expensive lot where silage formed a part of the ration.

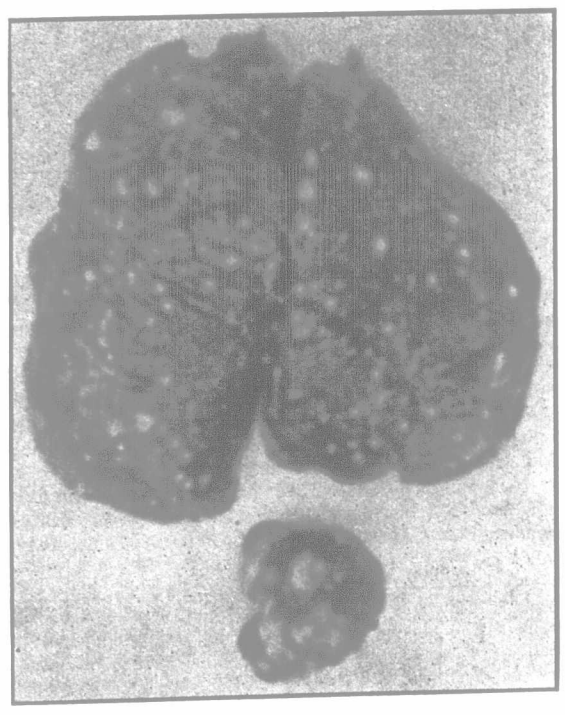
The prices of feeds used in the financial statement are based upon the prices which prevailed in the vicinity of the State College during the winter. Corn silage was valued at $3.50 per ton; mixed hay, $12.00 per ton; ear corn, 70 cents per bushel of 70 pounds; shelled corn, 70 cents per bushel of 56 pounds; corn and cob meal, 75 cents per bushel of 70 pounds; bran, $25.00 per ton; cottonseed meal, $34.00 per ton; alfalfa hay, $15.00 per ton, and corn stover, $3.50 per ton.

These prices do not differ greatly from values which exist here in normal times, and from them a reader can arrive at costs of production and gain as they are likely to obtain under Canadian conditions. The outstanding features of the trials and results is to be found in the superiority of silage over other roughages, and in the advantage gained by feeding a small amount of protein-rich grain or alfalfa to balance the ration.

## Tuberculous Fowls Infect Pigs.

Until quite recently it was generally assumed that tuberculosis was either transmitted to pigs by feeding them with the milk, or unpasteurized whey, obtained from tuberculous cattle or was conveyed through the natural excrement of such cattle. Recent bulletins claim that the majority of tuberculous hogs are produced by the following causes: 1, feeding raw milk and slime from creameries; 2, feeding hand-separated milk from tuberculous cows; 3, feeding behind tuberculous cattle; 4, feeding tuberculous carcasses; 5, feeding slaughter-house offal. In no instance except one, have we seen it claimed that avian tuberculosis is transmitted to swine or, in other words, that the particular kind of tuberculosis that affects poultry will infect hogs. In fact the difference in body temperature between the fowl and pig would lead one to suppose that avian tuberculosis would fare very poorly under swine conditions. However, the April issue of The Journal of the Board of Agriculture reports the results of extensive investigations in Denmark which led to the indisputable fact that avian tuberculosis infects hogs.

It may be mentioned at this stage that avian tuberculosis is chiefly abdominal and the tubercles in the form of yellowish-white nodules from the size of a grain of millet seed to that of a pea may be observed in the liver or in the mesenteric glands of the fowls. In May, 1912, a veterinary surgeon in Ringsted sent the mesenteries and internal organs of three pigs from the same herd to the Danish State Laboratory for examination. The examination showed the liver, lungs, and mesenteric glands to be tuberculous and it was found that bacteria from the mesenteric glands were identical in every respect with avian tubercular bacteria. In order to obtain further information on the matter seventeen additional cases of tuberculosis were investigated. Of these in five cases the disease existed in the mesenteric glands and tonsils only, while in the remaining twelve the



**Liver and Spleen from Tuberculous Fowl.**
The elevated yellowish-white nodules indicate tuberculosis.

disease was more or less general. Nine of the animals were infected with avian tubercular bacteria, either exclusively or along with bovine tubercular bacteria, and the other eight exclusively with bovine tubercular bacteria.

It was then decided to extend the investigations over a much larger field. The State Agricultural Laboratory requested several swine-slaughtering companies to arrange for their veterinary assistants to isolate and send to the Laboratory whatever tuberculous mesenteries or tuberculous tonsils came to their notice. The Laboratory in due time received a large number of these diseased organs from different parts of Denmark. Information was also received along with them as regards the condition of the animals on the farm from which the tuberculous case originated, also the age of the tuberculous animal and the owner's name and address.

On examining the organs of 118 tuberculous pigs it appeared that 86 of them contained bacteria identical in every detail with avian tubercular bacteria. Twenty-eight contained bovine tubercular bacteria and in the remaining four cases the bacteria deviated in form from both types, but in two cases closely resembled the avian type. The results of the foregoing examinations showed that the character of the disease varies in accordance with the type of tubercular bacteria by which the pig is attacked. An attack of avian tubercular bacteria is usually of a local character while that of bovine tubercular bacteria is of a general character.

Going deeper into the matter for further information the Agricultural Laboratory obtained reports from 49 owners of these diseased swine. Of these 36 stated that tuberculosis amongst their poultry was general and post mortem examinations of fowls from 14 owners confirmed this; in the remaining cases the owners failed to send dead hens for examination but gave instead such detailed information of the character and progress of the disease as to leave no room for doubt with regard to its identity. The remaining 13 owners reported that there did not appear to be any particular disease prevalent amongst their poultry, although one or another of the fowls died occasionally.

The conditions under which poultry and pigs were kept on many of the farms rendered it almost impossible to prevent infection of the pigs from tuberculous poultry. In some cases the hen-roost was situated directly over the pig-sties without any intervening boards to catch the droppings. In other cases the fowls were only allowed to roost over the sties during the winter season. In these circumstances the investigators report that "it would be nothing short of a miracle for the swine to escape infection." On most farms it was the custom to allow the young pigs to run with the poultry during the greater part of the summer, either in an enclosed yard or on a free range. This practice also contributes to the spread of the disease. The State Laboratory of Denmark furthermore says "even the impossibility of all direct contact between the poultry and pigs does not preclude the transmission of the disease from tuberculous poultry indirectly. The bacteria in the droppings of diseased fowls remain potent for a long period either in the manure heap or in the soil and pigs while rooting around might readily become infected. Another probable source is from pigs bought at fairs or markets and added to existing stock; such animals may come from farmsteads where tuberculosis exists and being infected when bought may transmit the disease to the buyer's stock. The disease may also be transmitted by rats or mice."

## English Live Stock Happenings.

Britain's export trade in high-class (pedigree) live stock has not suffered over-much by the war, that is, judged upon the official figures. From January to March Britain has exported 151 head of cattle of the declared value of £7,728, which gives an average of £51 3s. 7d. apiece. Canada claims 41 head. All told 277 sheep of the declared value of £3,939 have been exported in the same three months, and they come out in value at £14 4s. 5d. each. Uruguay has been the best customer, taking 204 head worth £15 3s. 5d. each. We have exported 57 pigs worth £556, valued at £9 15s. each. So far as horses are concerned, only 178 have gone abroad since the new year, but they are of the declared value of £40,011, or worth about £224 15s. each. This average per head is the highest on record, but it is accounted for by the fact that the "sausage trade" horse has not been exported to Holland or Belgium since the war broke out. All the German sausage establishments and liver sandwich export places have got the order of the knock under the new civilization ruling.

I am sorry to state that our leading shows are gradually being declared abandoned for the year. The International Horse Show, that at Richmond, the one at Peterborough, and many others of repute which have been patronized by the Siftons and other Canadians, have all fallen through for the year of disgrace. It will be a blank year in the English farmer's life will 1915. His sons have gone to the war, so have his hired men; his horses are on the stricken fields of Flanders and France; his shows and fairs have been cut down to merely foal shows for foals that are as yet unborn; and ever and anon Zeppelins come and drop bombs on his well-tilled lands, and puncture holes into them. What a life!

Hackney men are gradually falling out of that pastime in Britain. I was at a sale yesterday at which a Hackney mare had at foot her 21st foal. She was 24 years old, but so good was her five-days-old "baby" that someone bid up to 40 guineas for them and got them. "What will you do with the dear old lady?" I queried. "Why let her end her days in ease at my place; I think I've got a good un in her baby," he replied. I thought the same, too. Talking about Hackneys, that great old mare Fylde Sabrinetta is out at pasture in Norfolk. The German Zeppelins came and dropped a bomb within 200 yards of her. She started off on a pace and action stunt, and kept it up for an hour in sheer funk. Her owner swears she can now go as well as she did 15 years ago, for the bomb has sharpened her action once again. She has just been served by Leopard and we should have a great goer and a stayer, too, after her Zeppelin escapade.

Woodbridge in Suffolk is one of the homes of the Punch breed of horses. It has just held a successful show, at which A. T. Pratt's Morston