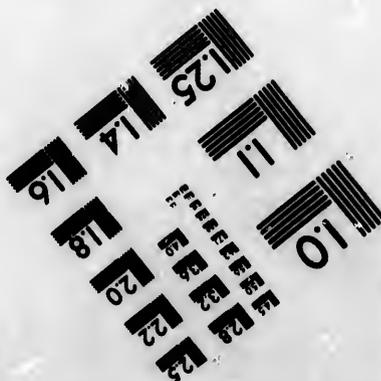
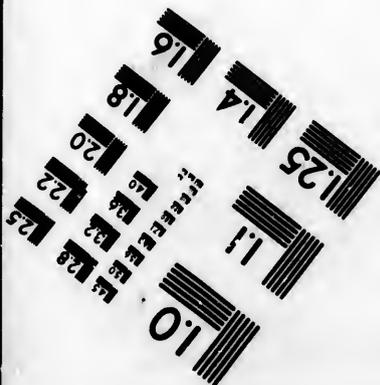
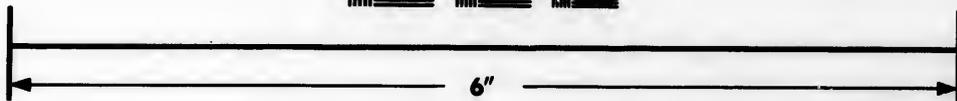
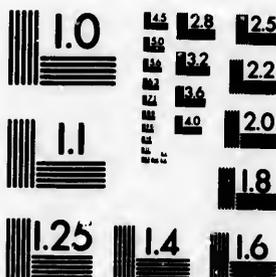


**IMAGE EVALUATION
TEST TARGET (MT-3)**



**Photographic
Sciences
Corporation**

23 WEST MAIN STREET
WEBSTER, N.Y. 14580
(716) 872-4503

**CIHM/ICMH
Microfiche
Series.**

**CIHM/ICMH
Collection de
microfiches.**



Canadian Institute for Historical Microreproductions / Institut canadien de microreproductions historiques

© 1983

The copy filmed here has been reproduced thanks to the generosity of:

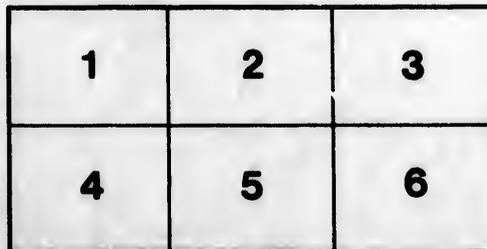
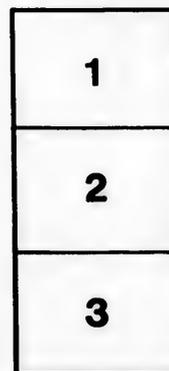
Library
Agriculture Canada

The images appearing here are the best quality possible considering the condition and legibility of the original copy and in keeping with the filming contract specifications.

Original copies in printed paper covers are filmed beginning with the front cover and ending on the last page with a printed or illustrated impression, or the back cover when appropriate. All other original copies are filmed beginning on the first page with a printed or illustrated impression, and ending on the last page with a printed or illustrated impression.

The last recorded frame on each microfiche shall contain the symbol \rightarrow (meaning "CONTINUED"), or the symbol ∇ (meaning "END"), whichever applies.

Maps, plates, charts, etc., may be filmed at different reduction ratios. Those too large to be entirely included in one exposure are filmed beginning in the upper left corner, left to right and top to bottom, as many frames as required. The following diagrams illustrate the method:



L'exemplaire filmé fut reproduit grâce à la générosité de:

Bibliothèque
Agriculture Canada

Les images suivantes ont été reproduites avec le plus grand soin, compte tenu de la condition et de la netteté de l'exemplaire filmé, et en conformité avec les conditions du contrat de filmage.

Les exemplaires originaux dont la couverture en papier est imprimée sont filmés en commençant par le premier plat et en terminant soit par la dernière page qui comporte une empreinte d'impression ou d'illustration, soit par le second plat, selon le cas. Tous les autres exemplaires originaux sont filmés en commençant par la première page qui comporte une empreinte d'impression ou d'illustration et en terminant par la dernière page qui comporte une telle empreinte.

Un des symboles suivants apparaîtra sur la dernière image de chaque microfiche, selon le cas: le symbole \rightarrow signifie "A SUIVRE", le symbole ∇ signifie "FIN".

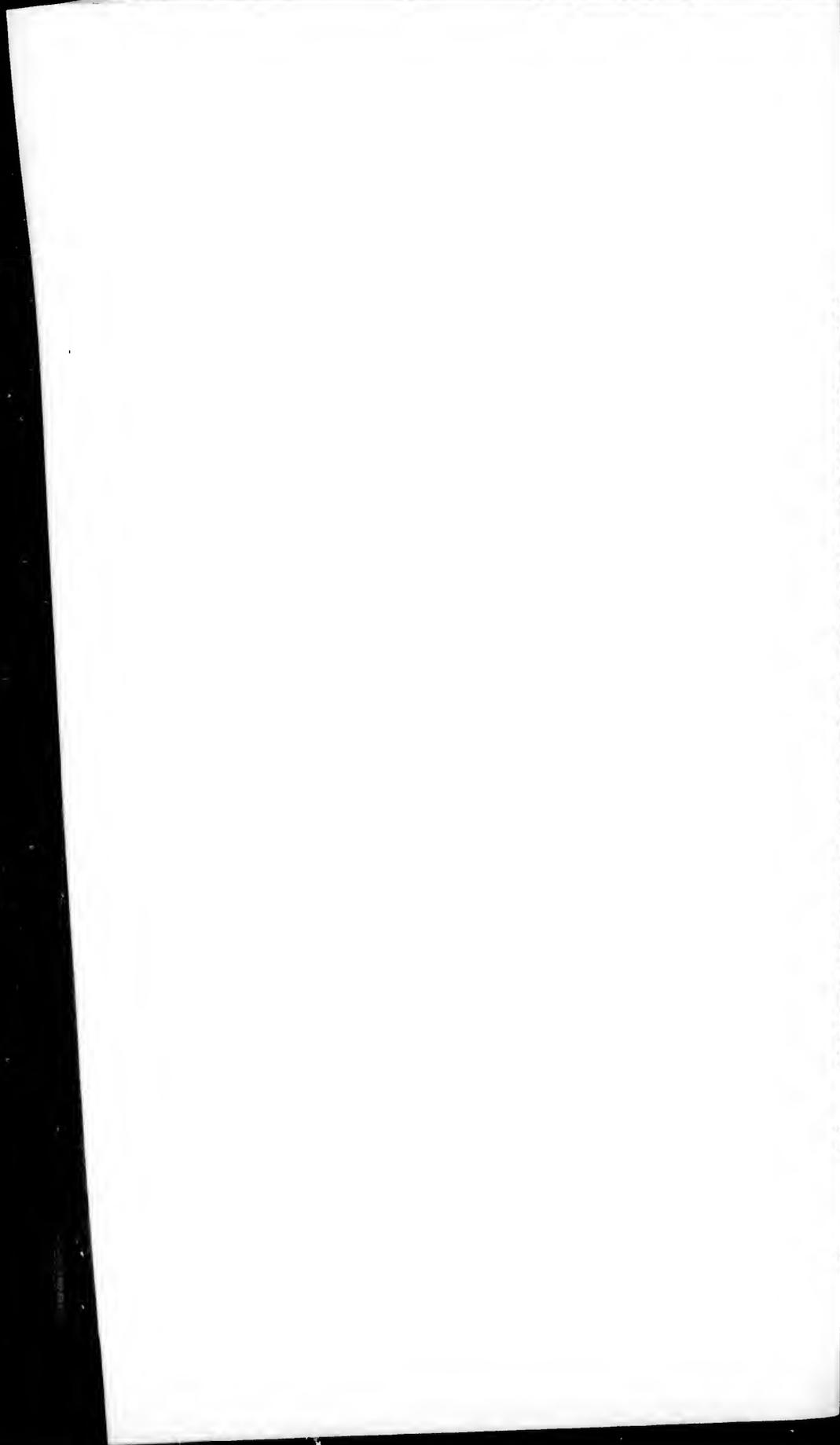
Les cartes, planches, tableaux, etc., peuvent être filmés à des taux de réduction différents. Lorsque le document est trop grand pour être reproduit en un seul cliché, il est filmé à partir de l'angle supérieur gauche, de gauche à droite, et de haut en bas, en prenant le nombre d'images nécessaire. Les diagrammes suivants illustrent la méthode.

ails
du
odifier
une
page

rrata
to

pelure,
n à





TARIO AGRICULTURAL COLLEGE
EXPERIMENT STATION

BULLETIN LXIX.

FEEDING LAMBS FOR THE BRITISH MARKET.

BY THOMAS SHAW, PROFESSOR OF AGRICULTURE, AND
C. A. ZAVITZ, EXPERIMENTALIST.

PUBLISHED BY THE DEPARTMENT OF AGRICULTURE
Nov. 2, 1891.

TORONTO

PRINTED BY WARWICK & SONS

ONTO.

l Farm, Gu
culture.

BULLETIN LXIX.

FATTENING LAMBS FOR THE BRITISH MARKET.

The experiment began on Oct. 24, 1890, and closed on April 1891, seven days before the lambs were shipped to Britain. Therefore covered a period of 182 days. The principal objects of the experiment were: 1. To ascertain whether lambs can be fattened at a profit in winter for the English market, in the hope of opening another important industry to the agriculture of Canada. 2. To ascertain the suitability of the average grade lambs of Ontario for the said market; and 3. To ascertain whether autumn shorn lambs are the more suitable for spring shipment.

THE ANIMALS SELECTED. The lambs from which those intended for shipment were selected were purchased by Mr. J. E. Storey, farm foreman, in the eastern part of Ontario. There were purchased in all 505 grade lambs. Of these 312 came from the flocks of Lanark and Carleton, 145 from Pontypool in the county of Durham, and 48 from Wellington and the adjoining counties. The lot mentioned reached the farm during the latter part of September, those from Lanark and Carleton on October 4, and those from Pontypool on October 18. The lambs were a mixed breed and take them all in all were somewhat below the average, as they were purchased good lambs were hard to get. They were mostly the offspring of sires of the principal breeds which were raised in the country. Each lot of lambs was turned into the rape and fed upon the rape until October 20, when one hundred lambs were chosen for the experiment. In selecting, compact sized animals were chosen, and especially those having dark color so far as they could be obtained. Notwithstanding, a considerable number were not of this class. The most ungainly ones, however, were counted out, and but ninety of the lambs were included in the experiment proper. Interesting particulars regarding the experiment counted out will be appended in the annual report.

CONDITIONS GOVERNING THE EXPERIMENT. 1. The lambs selected were shorn Oct. 22 and 23. On October 24 they were all weighed separately and the weights recorded. They were then kept housed in sheds in cold and rough weather, and were turned to pasture on the rape in the day time when the weather

.. .. Pr
and Farm Superint
.. Professor of Ch
rural History and G
sor of Veterinary
essor of Dairy Hus
and Mathematical
r in Drill and Gyn
.. .. Experim
.. .. Assistant

er of Agriculture,
ugh, County of W

was fine, until November 21. After that date they were confined to the sheds and the yards in front of them. The sheds, or rather shed, consisted of one large building with ceiling $10\frac{1}{2}$ feet high and hay loft overhead. This building was divided into compartments about the same in size as those described in Bulletin No. LXVIII. The yards in front were also similar, and the general treatment of lambs as to confinement or exposure was about the same as in those in the aforementioned bulletin. Some 16 or 17 animals were kept in each compartment. We considered them a little crowded, especially when they were feeding.

FOOD AND FEEDING. From October 24, the date of first weighing, until November 21, they were fed hay and a limited amount of grain in addition to the rape which they secured in the field. The grain ration was gradually increased during this period. From November 21, 1890, until April 24, 1891, when the experiment closed, they were given a ration consisting of grain, roots and hay. The grain fed was accurately weighed. The whole amount consumed was—oats, 12,408 lb.; oat screenings, 1,062 lb.; peas, 4,712 lb.; bran, 1,777 lb. A small amount of damaged wheat is included in the reckoning for the peas. The ration thus formed was practically as follows: Oats, 7 parts; oat screenings, 1 part; peas, 3 parts; and bran, 1 part by weight. The grain was fed in the unground state. The quantity of the grain fed was increased from time to time, and the average amount consumed per day by each animal throughout the experiment was 1.3 lb. The lambs were given all the hay they would eat. It consisted of clover and timothy, but the principal portion was clover. The hay fed in this experiment was not weighed, but as another experiment was being carried on simultaneously in the same building, with lambs of similar character and very similarly fed, in which the hay ration was accurately weighed (see Bulletin LXVIII), we have used these weights in estimating the amount of hay consumed in this experiment. This estimate would put the whole of the hay consumed at 13.9 tons, or the average amount consumed per day by each animal at 1.91 lb. The roots consisted of turnips sliced in strips before being fed. The amount at first given to each animal per day was 1 lb. This was increased from time to time until February 12, when they were given 5 lb. each per day, and this was the quantity given until the close of the experiment. The whole amount of the roots fed throughout the fore was 50,301 lb., or $838\frac{1}{2}$ bush.; or, an average per day for each animal of 3.07 lb. They were supplied with water from taps in the pens.

ESTIMATED VALUE OF THE FOOD. The food was estimated at the current market values in Guelph, less the cost of marketing from an Ontario farm under average conditions.

tin LXVIII). The home value put upon the food by this mode of feeding was : Oats, 34½ cents per bush.; pease, 52 cents ; bran per ton ; roots sliced, 8 cents per bush.; and hay, \$4.50 per ton.

EIGHTS. Table I gives a summary and an analysis of weights :

---	Pounds.
Weight at commencement	7,636.500
Weight at close.....	12,150.000
Weight of increase.....	4,513.500
Average increase per head	50.150
Average daily increase per head.....	.275

an average weight of each lamb at the commencement of the experiment was 84.85 lb., and at its close 135 lb. The average gain per month therefore was 8.25 lb. The highest average gain per month was 11.70 lb., and the lowest 5.40 lb.

TRANSPORTATION. The lambs were put on board the cars on May 1. The farm foreman took charge of them as far as Montreal, put them on board the steamship Lake Superior en route Liverpool, and secured a competent feeder to care for them. The number of lambs sent was 100. To make up this number the lambs described in Group 1, Bulletin LXVIII were added. Of these 10 were left with long wool and 5 were shorn just before shipment. The 95 were thus chosen first, to make the number exactly 100, and it was expected that some lambs might be included newly shorn and others with long wool. The best of the lambs in those two groups were kept at home to be fed for show purposes. They have since proved to be shown at the approaching fat stock show in Chicago. The shipment reached Liverpool in good condition and without the loss of a single lamb. The autumn shorn lambs stood the voyage better than those shorn in the spring, and also better than those not shorn, as the second lot mentioned suffered from cold and the third from heat. It may also be mentioned here that the autumn shorn lambs occupied considerably less space than those in full fleece when on board the ship, and on their arrival they were in more attractive form than those of the other lots.

DISPOSAL OF THE LAMBS. They were consigned to Messrs. Messers. and Williamson, live stock commission agents, Liverpool, to be disposed of. Mr. G. F. Frankland, ex-Alderman, Toronto, who

was in Liverpool at the time, was also authorised to take notes and report upon the same. Mr. Frankland reported: 1. That lambs as a whole arrived in excellent condition. 2. That English buyers pronounced them one of the best lots of lambs ever sent to Canada to England. 3. That they killed well, dressing 68 per cent each, or a little more than half the live weight, which "is considered a good return, more especially after a journey of over 3,000 miles land and sea;" and 4. That when dressed the meat brought 17 cents per pound, "the highest quotation" at the time in the whole market.

VALUES. Table II gives the financial results of the experiment.

	Values.
	\$ c.
Value of the animals at the commencement of the test	382 73
Cost of shearing	4 50
Cost of food	339 62
Cost of attendance	40 95
Cost of shipping to England.....	375 21
Total cost.....	1,123 01
Value of lambs in England	1,061 08
Value of wool	47 50
Value of manure.....	122 85
Total value	1,231 43
Gain	108 42
Gain per cent. on investment	9.65

The average value of the lambs at the commencement of the experiment was \$4.03, and the average price for which they were sold in the English market was \$11.79. The average advance in value, therefore, was \$7.76. The cost of attendance was estimated in Bulletin LXVIII, on the assumption that one man would care for 400 lambs. The autumn shorn wool averaged 4.06 lb. per head unwashed, and sold for 13 cents per pound. The value put upon manure as in Bulletin LXVIII was $\frac{3}{4}$ ct. per animal per day, one cent the amount fixed upon by Professor Roberts, of Cornell University in a bulletin issued during the present year.

The cost of transportation and sale of the lambs was \$375.21, or \$4.17 per head. This was considerably more than the average cost which experienced shippers put at from \$2.50 to \$3.00 per head. This arose in part from the smallness of the shipment, which

to take note
ed: 1. That
2. That En
bs ever sent
dressing 68
ch "is consid
er 3,000 mile
t brought 17
in the whole

sity would involve more expense relatively than when done on a scale. It is confidently believed that the cost of transportation will be much reduced in the next shipment. If, in this shipment, \$2.75 which is about the average cost, were charged against lambs for shipment and sale, the financial results would be as follows:

Total cost of lambs	\$995 30
Total value as before.....	\$1,231 43
Net gain	\$236 13
Gain per cent. on the investment	23.72 per cent.

of the experim

is the intention to repeat the experiment the coming winter and spring.

Values.	
\$	c.
362	73
4	50
339	62
40	95
375	21
1,123	01
1,061	08
47	50
122	85
1,231	43
108	42
9	65

CONCLUSIONS. The leading conclusions to be drawn from this experiment include the following:

That lambs can be fattened successfully in winter in considerable numbers in one building when subdivided into moderately sized groups.

That average grade lambs will fatten satisfactorily in autumn and winter when fed daily a ration consisting of 1 lb. rape for a time, 1.30 lb. grain, 1.91 lb. hay, and 3.0 lb. roots.

That average grade lambs when fed in winter similarly to those in this experiment will make a gain of 50 lb. in 4 months, that is to say, .275 lb. per day, or 8.25 lb. per month.

That with the prices charged in this experiment, average grade lambs can be fattened in winter at a daily cost of 7 cents for food.

That autumn shorn lambs are the most suitable for long shipment, as they occupy less space on shipboard, they better resist changes of weather and present a more attractive appearance in the market.

That it will pay to ship lambs to Britain at an advance of 2 cents per pound, live weight, over what can be obtained here, but the price obtained in Britain last season was not quite equal to 7 cents per pound, live weight, in this country.

That there is room for a large and profitable trade in average grade lambs between Canada and Britain providing they are shipped early in the season.

commencement of
which they
average advance
ce was estimated
man would care
4 06 lb. per
value put upon
l per day, one
Cornell Univer

bs was \$375.
the average of
o \$3.00 per
shipment, whic

