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An Annotated Bibliography For the Study of Animal Husbandry
in The Canadian Prairie West 1880-1925

Part A - Sources Available in Western Canada and United States

Introduction

This annotated bibliography pinpoints materials useful in studying animal husbandry as a part of mixed farming. All references to ranching have been omitted. Since Canadian historians have not focused their efforts on the history of prairie animal husbandry with any vigour, this study must be regarded as only a starting point.

Statistics gleaned from Annual Reports of the Saskatchewan Department of Agriculture provide evidence that animal husbandry, as part of mixed farming, played only a supporting role in that province's economy. Commencing during the early 1880s with the appearance of a few odd farm animals in the North West Territories, livestock numbers rose to a level that provided a total cash value equivalent to slightly more than the income derived from oats cultivation in 1920. The factors that made animal husbandry viable are easy to pinpoint; advances in veterinary science virtually eliminated animal disease in Saskatchewan by 1925, and animal-rearing techniques kept pace with veterinary achievements. However the limited extent of livestock production indicates that there were serious disadvantages. The failure to adapt barn technology to mitigate the extremities of the prairie winter resulted in problems in wintering stock. This combined with high grain prices from 1900-20, and costly barns, silos and machinery, discouraged the average dry land farmer.

A Note on Sources

The materials for any study of prairie animal husbandry are of necessity primary sources. Most valuable are the statistics



Indian and Northern Affairs Affaires indiennes et du Nord

Parks Canada

Parcs Canada

provided in Annual Reports of the Saskatchewan Department of Agriculture. Alberta's statistics are unreliable because they combine livestock production numbers derived from ranching and mixed farming. Although Saskatchewan did the same ranching operations they were inconsequential in this period. Dairying and animal husbandry records in Alberta and Saskatchewan constitute an important body of material for assessing the objectives of government livestock policy. A complete set of Saskatchewan Agricultural College records will determine the role of educational institutions in fostering animal husbandry improvements on the farm. American agricultural college records at Bozeman, Montana and Fargo, North Dakota will provide insights into developments south of the border. Contemporary journals including the Saskatchewan Farmer and the Nor'West Farmer, both specializing in mixed farming, provide accounts of veterinary and animal-rearing developments.

Archival Materials

Glenbow Foundation Archives - Calgary

Alberta Department of Agriculture. Agricultural Societies - Dissolved.

These records contain extensive correspondence on agricultural fairs, agricultural institutes, and attempts by agricultural societies to improve animal husbandry techniques.

C.P.R. - plans of buildings and milk cow records for Gleichen Dairy scheme, 1913-43.

Data re start and development of early creameries includes minute book of creamery in Rimbey area.

Diaries of an Alberta Provincial Dairy Instructor and Inspector, 1900-1940.

Papers of Canadian Percheron Association - 22 boxes.

Papers of Perceival J. Timms.

Includes records of Alberta Poultry Association, 1910-36.

Papers of Western Stock Growers' Association, 1896-1968.

Manitoba Provincial Library - Winnipeg

Alberta - Annual Reports of the Department of Agriculture, Sessional Papers, 1905-25.

These reports contain valuable narrative material on animal husbandry in the province. Useful sources include accounts of various special livestock commissions, reports of the Poultry Superintendent and Provincial Livestock Veterinarian as well as results of livestock experiments conducted at the University of Alberta. Also valuable are instructional articles suggesting means of improving livestock-rearing techniques. The statistical data presented in the reports is of little use to the historian of mixed farming. The figures do not differentiate between livestock quantities and their economic value produced on mixed farms on the one hand and on ranches on the other. Since it appears that ranches vastly outnumbered mixed farms, the livestock statistics derived would probably be a better representative of the extent of ranching in the province.

Canada Dominion Experimental Farm Reports, Sessional Papers, 1891-1920.

These reports are of limited value to the student of animal husbandry because they deal mainly with field agriculture. The annual accounts presented by Superintendents at Brandon, Indian Head, and Lacombe indicate that the farms conducted few experiments in animal feeding tests. But experiments of this nature are notable because of their limited scope. Such pressing necessities as comparing the winter utility of various types of barns, conducting tests on how to work draft horses in hot dry weather, diagnosing and treating animal diseases prevalent to the West, and breeding animals which thrived under dry-belt conditions were left untouched. It is true that many problems relating to animal rearing generally found solutions at the Central Farm in Ottawa. But techniques valid in a climate with moist cold winters and humid summers were not necessarily applicable to Western conditions.

North West Territories and Saskatchewan.

Annual Reports of the Department of Agriculture, Sessional Papers, 1899-1926.

These reports constitute the main statistical source for the study of animal husbandry as an integral part of mixed farming. Since ranching did not play an important part in Saskatchewan's economy, the animal husbandry statistics presented are indicative of the inroads mixed farming made into the wheat economy. By examining these statistics, the historian can determine the actual worth of the livestock industry as divided into dairying, beef cattle, sheep, swine and poultry. Above all, tables are presented which compare the annual monetary value of livestock to the dominant prairie grains.

Narrative materials are also rich in content. Reports on the dairy industry, poultry developments, agricultural institute meetings, fairs, university extension courses relating to animal husbandry, veterinary comments on animal health, as well as a host of articles ranging from an assessment of the sheep industry to theoretical articles extolling mixed farming virtues made their appearance.

Provincial Archives of Alberta - Edmonton

Department of Advanced Education. Registers and Yearbooks from Claresholm, Raymond, Vermillion and Gleichen Agricultural and Vocational Colleges, 1913-31.

Board of Agricultural Education Minute Book.

Department of Agriculture. Agricultural Societies' Files, 1892-1960. Indexed.

Department of Agriculture. Alberta Dairymen's Association programmes, 1919-70.

Department of Agriculture. Animal Industry Division, correspondence and general files, n.d. Indexed.

Department of Agriculture. Dairy Branch and Dairy Herd Improvement Division files, 1920-68.

Department of Agriculture. Historic Records, pre-1968.

Department of Agriculture. Papers of Deputy Minister of Agriculture, 1919-25 and files re Demonstration Farms, 1920-30.

Department of Agriculture. Reports, correspondence and accounts, 1895-1960.

Department of Agriculture. Veterinary Services Branch. Veterinary Textbooks and Notebooks, n.d.

Department of Agriculture. Veterinary Services Division, Records, n.d. Indexed.

Saskatchewan Archives - Regina

Saskatchewan. Department of Agriculture. Deputy Minister's Office Records. Correspondence and reports on livestock and Government Creameries. 48 feet.

Saskatchewan. Department of Agriculture. Agricultural Society Records. These records contain extensive correspondence on agricultural fairs, agricultural institutes, co-operative experiments, and attempts by agricultural societies to improve animal husbandry techniques.

Saskatchewan Archives - Saskatoon.

Saskatchewan. Department of Agriculture. Dairy Branch Records.

- 1) Letter Books, 1901-06, Correspondence of W.A. Wilson, Superintendent of Dairying, "concerning butter shipments, cold storage for dairy products, butter making, cream buying, markets and prices for dairy products, government creamery accounts, creamery employees and dairy division employees, establishment of creameries, government assistance to creameries..." (Index to Dairy Records) 8 books.
- 2) Deputy Minister of Agriculture, 1906-17. Correspondence between the Dairy Commissioner and the Deputy Minister of Agriculture. 1 folder.
- 3) Minister of Agriculture, 1906-37. Correspondence between the Superintendent of Dairying and Minister of Agriculture. 2 folders.
- 4) Cream Buying Stations, 1916-34.
General Correspondence, 1916-34. 1 folder.
Quinton Buying Station, 1916-19. 1 folder.
Kurolei Buying Station, 1916-19. 1 folder.
L.C. Wirtz, Inspector, 1916-19.
"Correspondence of the Dairy Commissioner with L. C. Wirtz, Inspector concerning the establishment and operation of cream buying stations, crop conditions, dairy conventions and expense accounts" (Index to Dairy Records). 1 folder.
- 5) Creameries and Cheese Factories, 1888-1944. Establishment, 1901-36. Correspondence regarding establishment, licensing and operation of creameries. 2 folders.
- 6) Creamery Files, 1890-1944.
"Correspondence of various government officials concerning the organization, licensing, operation,

and financial status of creameries." 3 folders.

- 7) Cheese Factory Files, 1888-1932.
Correspondence concerning the establishment, operation, and financial status of cheese factories. 7 folders.
- 8) Saskatchewan Co-operative Creameries - Establishment 1917-18. 1 folder.
- 9) Butter Grading - K.G. McKay, Butter Grades, 1916-18
"Correspondence of the Dairy Commissioner with K.G. McKay Butter Grader concerning butter grading, butter storage and shipments creamery butter competitions, cutternecks short short courses."
(Index to Dairy Records). 1 folder.
- 10) C.E. Thomas, Dairy Promoter, 1921-30.
Correspondence "concerning the organization of cow testing centres and land improvement associations, dairy competitions, boys' and girls' calf clubs and publication of articles on dairying. 1 folder.
- 11) R.B. Vogen, Dairy Promoter, 1922-37.
Correspondence regarding organization and activities of cow testing centres, and purchase of cattle. 1 folder.
- 12) Experiments in Dairy Work, 1913-1943.
Correspondence with Dairy Commissioner regarding "the improvement of the quality and care of dairy products." 2 folders.
- 13) Articles, 1917-33.
Published accounts on various aspects of dairy work. 2 folders.
- 14) D.M. McLeod, Dairy Instructor, 1913-27.
Correspondence regarding government creameries, cow testing, cream grading and extension courses. 1 folder.
- 15) Dairy History, 1892-1942.
Articles on the evolution of Saskatchewan's dairy industry. Minutes of meeting of early dairy associations. 1 folder.

Saskatchewan. Department of Agriculture. Livestock Branch Records.

Letter Registers, 1912.

Livestock Association Account Book, 1911-12.

Ledgers of the Saskatchewan Stock Breeders' Association. Includes records of Swine Breeders', Horse Breeders', Cattle Breeding and Sheep Breeders' Association, 1913-14, and 1917.

University of Saskatchewan Archives - Saskatoon.

College of Agriculture Records, University of Saskatchewan, Saskatoon, Saskatchewan.

Annual Reports of Animal Husbandry, Dairy, Farm Management, Poultry, Soils, Complete from 1918.

Dean's Papers - Correspondence of W.J. Rutherford. Material on dairying, Experimental Farms, Extension activities and Rutherford's duties as Remount Commissioner in 1914. Rutherford's Papers are complete for his entire tenure as Dean of the College of Agriculture.

United States Repositories

Montana State University - Bozeman

Correspondence of the Director of the Experiment Station, 1895-1948. Material relating to dairy and animal husbandry departments. Inventorized and Indexed. 25 cubic feet.

Extension Services, Montana Agricultural College.

Dairy and Swine Reports, 1915-55.

Livestock, 1917-55.

Poultry, 1919-55.

Director's Reports, 1914-55.

Files of the Poultry Department, 1918-53. Inventorized. 4 cubic feet.

Agricultural Economics Department, Montana Agricultural College Files, 1914-1963. These files contain correspondence of M.L. Wilson, head of the department who was involved in extension work, and experimentation in mixed farming. Inventorized and indexed. 45 cubic feet.

Bulletins of the Experiment Station and Extension Services, n.d.

ARTICLES AND PAMPHLETS

Annual Report of the Manitoba Agricultural College, 1914-1915.

Prospectus of the Manitoba Agricultural College, 1906-13.

Saskatchewan. Department of Agriculture, Bulletin Series.

Bulletin No. 15. W.A. Wilson "Causes of Contamination and the Care and Preservation of Milk and Cream on the Farm," 1910.

Bulletin No. 16. "Inquiry into the Hog Raising Industry," n.d.

Bulletin No. 25. W.A. Wilson, "Fleshing Chickens for Market," 1911.

Bulletin No. 30. W.A. Wilson, "The Grading of Cream," 1914.

Bulletin No. 32. J.C. Smith, "Hog Cholera; Its Causes, Symptoms, Treatment and Prevention," n.d.

Bulletin No. 33. "The Live Stock Industry in Saskatchewan," 1913.

Bulletin No. 39. W.F. Windeatt, "Enrollment and Registration of Stallions in Saskatchewan," 1914.

Bulletin No. 40. J. Cochrane Smith, "Care, Handling and Marketing of Wool," 1914.

Bulletin No. 41. W.W. Thomson, "Co-operative Live Stock Marketing," 1914.

Bulletin No. 45. "Livestock on Credit Terms to Saskatchewan Farmer and the Co-operative Marketing of Livestock Products, Butter, Wool, Poultry, etc." 1917.

Bulletin No. 65. J.G. Robertson and M.P. McClellan, "Hemocchegic Septicemia, Native, Symptoms, and Prevention," 1923.

Saskatchewan. Department of Agriculture, Special Publications.

W.J. Rutherford "Feeding Value of Corn and Its Comparison with other Grains for Feeding Purposes," n.d.

"Memorandum Regarding the Saskatchewan Government's Plan

for Assisting Greater Hog Production," November 28, 1917.

J.C. Smith, "Blackleg; its Nature, Cause and Prevention," 1915.

J.C. Smith, "Foot and Mouth Diseases; its Nature, Cause, and Treatment," 1915.

Saskatchewan Live Stock Association, Golden Jubilee Year 1909-1959 Historical Report, Regina: Queen's Printer, 1959.

Books

MacEwan, Grant. Hoofprints and Hitchingposts, Saskatoon: Modern Press, 1964.

A collection of horse stories of interest to the general reader but having limited value to the agricultural historian. A number of sections on such topics as horses at Red River prior to the 1880s, and an assessment of western horse breeding operations merit examination.

Robinson, Elwyn B., History of North Dakota, Lincoln: University of Nebraska Press, 1966.

A general history of North Dakota, that contains useful sections on the North Dakota Agricultural College and Experimental Farm, and mixed farming.

CONTEMPORARY JOURNALS

The Grain Growers' Guide. Winnipeg, Manitoba, 1906-25.

The articles on animal husbandry in this publication are of particular significance because they appeared in a journal that was for the most part oriented in the direction of wheat cultivation. Although at first opposing mixed farming, the Guide soon fell into line with other agricultural publications, seeing mixed-farming as a solution to low wheat prices. Below is a list of useful articles.

W.W. Thomson, "Sheep Husbandry and Western Agriculture," October 12, 1910, p. 23.
Reasons why sheep should be raised.

A.F. Mantle, "Western Horse Industry," October 26, 1910, pp. 7, 11, 23.
How to breed horses profitably.

"The Western Cattle Situation," January 25, 1911, p. 31.
Extent of neglect on animal husbandry on the prairies.

"Beef Raising in the West," March 8, 1911, pp. 8, 11, 12, 26.
A step by step account of cattle raising practices.

E.N. Barker, "Farm Poultry," February 26, 1914, pp. 11, 26, 27.
How to raise poultry.

M.C. Herner, "Better Poultry and Eggs," February 26, 1914, pp. 13, 24.
Specialized techniques for raising more profitable chickens.

"Wheat-Growing a Crime!" May 6, 1914, p. 5.
An interpretation of the mixed farming promotional campaign as a plot by eastern Canadian financial interests to cover their manipulation of wheat prices by expressing concern with the farmer's welfare.

A.F. Mantle, "Mixed Farming," May 6, 1914, pp. 9-10.
The future of mixed farming on the prairies.

"Hog Cholera," July 8, 1914, pp. 14, 19.
Symptoms and treatment of hog cholera.

"Care of the Breeding Flock," August 26, 1914, pp. 11, 14, 15.
Breeding sheep and caring for the young during the winter.

"The Popular Hog House," October 28, 1914, p. 3.
Plans for constructing an economical hog barn.

"Mille Fever," November 18, 1914, p. 12.
Treating the disease.

M.C. Herner, "Common Poultry Diseases," December 9, 1914, pp. 17, 33-34.
An analysis of poultry diseases, their prevention, and treatment.

"Ventilating the Cow Barn," March 17, 1915, pp. 8, 34.
Principles of barn ventilation.

H.A. Craig, "Dairy Barn Construction," April 21, 1915, p. 9.
Plans for dairy barn suitable for Alberta's climatic conditions.

J.D. McGregor, "Producing Grand Champions," July 7, 1915, pp. 7, 17.
Techniques for raising high quality cattle.

W.J. Gilmore, "Silos," August 4, 1915, pp. 7, 15.
How to construct a silo suitable for prairie conditions.

J. McCuig, "The Average Hog in Farm Economy," November 17, 1915, p. 9.
Advice on limiting hog production.

"A Mixed Farmer's Barn," January 15, 1916, p. 27.
An edifice suitable for the average western farm.

"Half Section Man's Barn," February 2, 1916, p. 34.
Barn plans and estimated costs.

"A General Purpose Barn," March 8, 1916, p. 23.
Plans for a substantial edifice for mixed farmers.

M.C. Herner, "Brooding and Rearing Chicks," March 29, 1916, pp. 11, 19.
Advice for chicken rearing with particular stress on coop construction.

"Winter Quarters for Sheep," October 11, 1916, p. 23.
How to construct winter quarters for sheep.

"A Homesteader's Barn," December 13, 1916, p. 14.
Plans for a low budget farm.

"A Portable Poultry House," February 7, 1917, p. 36.
How to construct barn facilities for poultry.

"Selecting a Proper Sire," March 20, 1918, pp. 8, 30.
How to select stallions and bulls for breeding purposes.

"A Clear Portable Hog Cabin," April 24, 1918.
Construction plans with diagrams.

"The New Dominion Deputy," August 14, 1915, pp. 28-29.
Biographical sketch of J.H. Grisdale.

J.P. Sackville, "Color Fads in Livestock Breeding," September 18, 1918, p. 16.
Insignificance of colour in livestock.

G. de W. Green, "The Shire Horse," January 8, 1919, pp. 8, 15.
History of shires in Canada.

C.G. Good, "The Belgian Horse," May 7, 1919, pp. 8, 23-23.
The Belgian horse in Canada; its utility and future.

M.A. Herner, "Arrangement of Poultry Houses," September 17, 1919, p. 589.
Designing a poultry house for minimum maintenance.

W.C. McKillican, "Housing Swine in Winter," November 5, 1919, pp. 34-35.
Designing wintering facilities for hogs.

P.M. Abel, "Persian Lamb Fur," November 19, 1919, pp. 8, 28-30.
Raising Karakul sheep in Alberta for their fur.

George McFarrow, "The Shropshire," December 31, 1919, pp. 7, 35.
Raising Shropshire Sheep.

G.H. Hutton, "The Livestock Future," March, 1920, pp. 10, 61.
Problems in western livestock production.

P.M. Abel, "The Corriedale Arrives," September, 1920, pp. 7, 25.
The value of the Corriedale, a dual purpose animal suitable for meat and wool.

A.A. Dowell and G.L. Flack, "Silage for Fattening Steers," May 25, 1921, pp. 8, 10, 11.
Results of experiments conducted at the University of Alberta.

"Feeding Work Horses," June 15, 1921, pp. 14-15.
Determining the type and quantity of horse rations.

P.M. Abel, "A Veterinary Accounting," September, 1921, pp. 8, 13.
How provincial and federal government policy have made Canada relatively free from livestock disease.

P.M. Abel, "Silo History," March 15, 1922, pp. 16-17.
Brief history of world silo construction.

"Silo Construction," March 15, 1922, p. 18.
How to build a silo.

"Feeding from Pit Silos," March 15, 1922, p. 19.
How silage is brought to ground level from sub-terrain levels.

"The Pit Silo," March 15, 1922, pp. 21-23.
How to construct this type of facility.

"The French Silo," March 15, 1922, pp. 24, 30.
How to build this installation.

E.A. Lowden, "Farm Water Supply," June 14, 1922, pp. 10, 48.
Analysis of various means of obtaining water on the farm.

"How to Beat Jack Frost," March 7, 1923, pp. 17, 40.
Preventing silage from freezing.

"Remodelling Old Barns," March 7, 1923, pp. 25-26.
Making improvements for convenience and sanitation in old edifices.

M.D. Herner, "The Farmer's Poultry House," September 19, 1923,
pp. 9-10.
How to construct a poultry house suitable for the prairie climate.

M.C. Herner, "The Farm Poultry House," April 16, 1924, pp. 11, 12.
Herner's account of a poultry house he constructed.

The Nor'West Farmer, Winnipeg, Manitoba, 1883-1920.

This journal is an authorization guide to mixed farming on the prairie. It is particularly useful because it spans the entire period from the first appearance of mixed farms to the 1920s when animal husbandry was practiced on a small scale on prairie farms. Articles deal with all aspects of husbandry, livestock operations - theoretical arguments for animal husbandry, practical suggestions for horse, sheep, cattle and poultry rearing. Below is a list of useful articles that appeared in the publication.

"Sheep Raising," October, 1883, p. 247.
Reasons for raising sheep in Manitoba.

"Points for Judges," October, 1883, pp. 247-248.
Instructions on how to judge Shorthorn, Hereford, Devon and Jersey cows at agricultural fairs.

"Bots in Horses," October, 1883, p. 250.

An analysis of the symptoms and possible remedy for a disease caused by parasitical insects.

"Developing the Young Horse," November, 1883, p. 270.

An account of the stages of development of a young horse's leg muscles.

"Cattle Breeding Near Regina," February, 1884, p. 30.

Experiences of early mixed farmers with pure-bred stock.

"Importation of Stock from Ontario," February, 1884, p. 30.

Transactions of a salesman importing livestock from eastern Canada.

"Pigs - A Manitoba Swine Breeder Talks on the Subject," February, 1884, p. 31.

A breeder's comparative analysis of the attributes and disadvantages of various swine types for Manitoba conditions.

"Heavy Horses," April, 1884, p. 78.

A comparison of the attributes of percherons and clydesdales, with emphasis being placed on the latter's advantages.

"Stock Raising," April, 1884, p. 78.

General comments on cattle raising in Manitoba.

"The Cost of Making Good Butter," April, 1884, p. 79.

How to milk a cow and transform the product into butter.

"Thoroughbred Stock," April, 1884, p. 80.

Statement that pure-bred stock is being brought to the Prairies in substantial quantity.

"Bees," April, 1884, p. 84.

Information on habits of bees and future of bee-keeping industry in Manitoba.

"Incubators," April, 1884, p. 86.

How an incubator works.

"Feeding Experiments at Guelph," May, 1884, p. 98.

Description of physical characteristics of steers involved in the experiments.

"Feeding Cattle," May, 1884, p. 98.

Advice to farmers to fatten cattle early because prairie winters make cattle production unprofitable.

"Bees - First Steps," July, 1884, p. 138. How to begin Bee-keeping.

"Breeds for Laying," August, 1884, p. 159. Advantages and Disadvantages of Various types of Poultry.

"Advantages of Mixed Farming," August, 1884, p. 164. A Statement of the Advantages of Mixed Farming Citing Eastern Canadian Examples.

"The Pig - A Good Pig," September, 1884, pp. 173-174. Attributes of Profitable Swine.

"Bees - Unforeseen Points," September, 1884, pp. 173-174. Problems an Apiarist is unlikely to Encounter.

"The Pig-Breed and Care," October, 1884, p. 192. Why Hogs must be Fed Sufficiently.

"Bees- Artificial Swarms," October, 1884, p. 193. How to Increase or Decrease Apiary Stocks.

"The Pig - How to Keep," November, 1884, p. 203. How to Raise Pigs for Home Consumption.

"Sheep - Their Position in Agriculture," November, 1884, p. 209. Reasons why Prairie Farmers should Raise Sheep.

"Bees- Controlling Swarming," November, 1884, p. 210. Account of Bee-Keeping at Whitewood, N.W.T.

"Mistakes in Bee-Keeping," Christmas and New Year's Number, 1884, p. 226. Twenty-five Mistakes in Bee-keeping in point form.

"Live-Stock - Regulations as to Its admission into Manitoba and the North-West Territories Free of Duty," April, 1885, p. 52. Extracts from Federal Legislation.

"Clydesdale Horses," May, 1885, p. 78. Brief History and Description of Physical Features.

"Horses Feet," July, 1885, p. 138. Why Ailments of Horses' Feet are Common.

"What Horses to Breed," July, 1885, p. 138. Advice in Breeding Draft Horses.

"Guelph College Dairy," October, 1885, p. 235. Description of Facility.

"Milk! Milk! Milk!," October, 1885, p. 235.
Suggested frequency for cow milking.

"How to get the Most Butter," October, 1885, p. 236.
As assessment of the profitability of various butter churning techniques.

John Hemsworth, "Italian Bees," November, 1885, p. 285.
Problems with bee-keeping encountered in the North-West Territories.

"Holstein Cattle," January, 1886, p. 337.
History of the breed.

"How a Horse Feeds," January, 1886, p. 337.
Grazing techniques of Horses.

"Sheep Raising," January, 1886, pp. 348-350.
Sheep raising at Cannington Manor, Moose Mountain, North West Territories.

Alexander Middleton, "The Sheep Industry," April, 1886, p. 434.
Suggestions for Sheep Raising in the Northwest.

"How to Buy a Horse," April, 1886, p. 441.
Characteristics to search for when purchasing a horse.

"The Breeding and Herding of Cattle," April, 1886, p. 443.
Why cattle breeding is profitable in the North West.

"The Horse in Manitoba," May, 1886, pp. 465-466.
Problems encountered in horse raising in Manitoba.

"Mixed Farming," May, 1886, pp. 474-75.
Attributes of mixed farming.

"The Pig in Manitoba," June, 1886, pp. 499-500.
Problems with hog raising in Manitoba.

"Cattle - A Few of the Beef Breeds," April, 1887, pp. 797-98.
Comments on various cattle types with explanation of the conditions under which they thrive.

"A Growing Industry," April, 1887, p. 803.
Instructions for beginners in poultry production.

"Age of Horses by the Teeth," June, 1887, p. 855.
General rules for determining horses' ages.

"Draught Horse Breeding," June, 1887, p. 856.
Principles of breeding and raising young draught horses.

"How to Train Colts," July, 1887, p. 888.
General principles for inculcating docility in young horses.

"Blackleg," August, 1887, p. 915.
Explanation of a cattle disease caused from a chill.

Jasper Frick, "The Horse for the Northwest," September, 1887,
p. 944.
An amusing summary of suggested qualities of the ideal prairie
horse.

"Fall Care of Bees," October, 1887, pp. 975-76.
Preparing apiaries for winter.

"Cattle Feeding," February, 1888, pp. 389.
A suggested diet for prairie cattle.

"Training a Milker," May, 1888, p. 117.
Techniques for extracting a regular milk flow from dairy cattle.

"Let the Tails Go," May, 1888, p. 117.
Reasons why dairy cows should have their tails removed.

Andrew Wright, "Wintering Cattle Outside," May, 1888, pp. 118-19.
As assessment of the technique.

"Practical Management of the Bull," June 1888, p. 147.
How to control a bull's latent viciousness.

William Brown, "Some Hints to Judges of Livestock at 1888
Exhibitions." August, 1888, pp. 203-204.
Ontario Agricultural College criteria for judging at Agricultural Fairs.

"Cheaper Feeding of Horses," August, 1888, pp. 204-205.
A suggested diet for horses designed to reduce operating costs.

"The Fall Feeding of Cows," October, 1888, p. 261.
Reasons for feeding dairy cows sufficiently during the autumn.

"Horse Breeding on Grain Farms," October, 1888, p. 264.
Horse breeding as a sideline to grain-growing.

"The Feeding of Heavy Draft Horses," October, 1888, p. 264.
Principles of horse feeding explained.

"The Season to Feed for Profit," November, 1888, p. 291.
Encouragement to farmers to feed cattle every extra bit of hay in the autumn when fattening can be achieved at minimal cost.

"The Stabling of Colts in Winter," November, 1888, p. 292.
Winter horse raising as a sideline to grain growing.

"Horse Breeding on Grain Farms," January, 1889, p. 17.
A plea for raising specialized draft horses such as Clydesdales.

"Perils of Colt Rearing," February, 1889, pp. 34-35.
How to minimize injury in horse raising.

"The Horse We Want," March, 1889, p. 63.
Discussion of the Ideal Prairie horse.

"Dr. Rutherford in the Ring," March, 1889, pp. 63-64.
A Portage la Prairie veterinarian's call for developing a medium weight horse capable of farm-work as well as pulling a buggy.

"How to Judge a Horse," March, 1889, p. 64.
Examinations to be made before purchasing a horse.

"Sheep Diseases," April, 1889, p. 88.
Diseases of sheep and suggested remedies.

"Draft Horses," April, 1889, p. 88.
Further commentary on the controversy over the most suitable farm horse.

"A Big Boom in Horse Breeding," May, 1889, p. 114.
Extent of horse-breeding expansion in Canadian North West.

"Northwest Sheep Raising," May, 1889, pp. 114-115.
Suggestions for Sheep Raising in Assiniboia.

"How prize Poultry are Raised," May, 1889, p. 129.
How a Winnipeg breeder raises poultry.

"A General Purpose Beast," June, 1889, p. 142.
Discussion of the attributes of an ideal cow for the north west.

"Cross Breeding," August, 1889, p. 198.
The principles of cross-breeding for profit and utility.

"Draft Horse Breeding," August, 1889, pp. 199-200, Part I.
October, 1889, pp. 258-260, Part II.
Selecting, breeding, and raising young draft horses.

"Wintering Manitoba Bees," October, 1889, p. 269.
Discussion of subterranean excavations suitable for containing bees during winter months.

J.M. Pearson, "How to Select a Dairy Cow," November, 1889, pp. 307-309.
Physiological features desirable in dairy cows.

Richard Waugh, "Ensilage," November, 1889, pp. 9-10.
Analysis of the problems involved in producing silage as an animal feed.

W.M. Champion, "Home Dairying," November, 1889, pp. 12-13.
A description of Home dairying for local markets.

S.M. Barr, "Cream Raising by the Natural Method Explained and Compared with the Mechanical," November, 1889, pp. 314-316.
A comparison of two different cream production techniques.

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"Canada's Best Percherons," August 20, 1915, p. 717.
Extent of percheron horse-breeding in Canada.

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"Central Assiniboia Exhibition," August 5, 1899, pp. 551-552.
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"Our Livestock Commissioner," September 20, 1899, pp. 671-672.
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How to fatten cattle for market.

"The Value of Straw," November 20, 1899, p. 832.
Analysis of straw as a livestock feed.

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A summary of Bulletin No. 33 of the Central Experimental Farm on the usefulness of various feed in producing marketable hogs.

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A plan for feeding young horses designed to quickly built animals muscular strength.

"How to Treat a Man," October 5, 1900, p. 767.
A short satire on horse mistreatment given from the hypothetical viewpoint of a horse.

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"Territorial Stock Breeders Organized," October 5, 1900, p. 777.
Account of the founding N.W.T. horse, cattle and sheep and swine Breeder's Association.

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Account of a provincial government plan to distribute livestock.

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Techniques for operating mechanical brooders.

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University of Saskatchewan.

Gaston Pootmans, "The Future of the Belgian Horse," February
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An analysis of sought after traits in clydesdales breeding.

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February 20, 1917, pp. 185, 225.
Description of percherons and assessment of their popularity
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W.C. McKillican, "Value of Pastures in Pork Production,"
March 5, 1917, p. 249.
Benefits of pasturing hogs.

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274.
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W.J. Tisdale, "Keeping up the Lambing Percentage," March 20,
1917, pp. 324-325.
How to breed sheep efficiently.

C.D. McGilvray, "Management of the Brood Mare and Foal," April
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November 20, 1917, p. 1219.
Difficulties of breeding dairy cows.

"A Distinguished Canadian Agriculturalist," December 5, 1917,
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Biographical sketch of J.G. Rutherford.

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The state of Alberta's livestock industry.

"Saskatchewan's Annual Dairy Convention," January 21, 1918, pp. 68-69, 113.

An account of the meetings.

"Some Pointers in Successful Sheep Raising," April 5, 1918, pp. 68-9, 113.

An account of the meetings.

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Results obtained at the Saskatchewan Agricultural College.

T.B. Bowman, "Selecting Percheron Mares," April 5, 1918, pp. 402-463.

Criteria to consider in percheron draft horse selection.

"Handling Farm Horses in Warm Weather," June 5, 1918, pp. 747-748, 798.

Management techniques for placing the least possible stress on horses.

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"Raising Calves on the Farm," March 5, 1919, p. 321.

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Description of a suitable hog house.

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Difficulties in practicing animal husbandry in Alberta's drier parts.

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An account of the difficulties involved in breeding percherons.

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Supplementing wheat with sheep.

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The value of mechanical stable devices in managing livestock.

MC. Herven, "Raising Late Chicks for Winter Layers," June 21,
1920, pp. 779, 888.
Feeding techniques to encourage winter egg-laying.

The Saskatchewan Farmer, Moose Jaw, Saskatchewan, 1919-1920.

This journal was the only mixed farming publication printed in the heart of the prairie dry-belt. Theoretical treatise and articles on animal husbandry were published, all pertaining to semi-arid Saskatchewan condition. Below is a list of useful articles.

"Mixed Farming," October, 1910, pp. 1, 3.
Why mixed farming is suited to Saskatchewan.

J.A. Mackenzie, "Stock Raising in South Saskatchewan," October, 1910, p. 25.
Why the Maple Creek, Cypress Hills area is suited to Stock-raising.

"The Belgian Horse," December, 1910, p. 31.
The advantages of Belgian horses as draft animals.

"Raising Sheep in Canada," January 1911, p. 31.
Extent of sheep husbandry in the Dominion.

"Bringing Livestock into Canada," February, 1911, p. 3.
Regulations concerning the input of livestock from the United States.

"Farmers Wheat Needs," February 1911, p. 17.
The perils of wheat over-cultivation.

"The Butter Industry of Saskatchewan," February 1911, p. 23.
Statistical account of butter production in the provinces.

"Cattle Loss of Cud," March, 1911, p. 5.
Analysis of rumination among cattle.

W. Stanley, "Horses," March, 1911, p. 7.
Supply and demand for horses in Saskatchewan.

"Importance of Livestock on the Farm," March, 1911, p. 19.
Reasons for keeping livestock in addition to wheat growing.

"Classification of Horses," April, 1911, p. 21.
Comparative study of the functions of draft, agricultural,
and carriage horses.

"Horses from Ontario," April, 1911, p. 21.
The difficulties faced by Ontario bred horses in adapting to
prairie conditions.

"Water Supply for Farms," May, p. 7.
How water is acquired in Saskatchewan's dry-belt areas.

"Economical Poultry Feeding," May, 1911, p. 25
How to avoid waste when feeding chickens.

"Cows and their milk Secretion," May, 1911, p. 29.
How to milk cows.

"The Brood Sow - Care and Feeding at Farrowing Time," May,
1911, p. 31.
Hog management at breeding time.

"Working the Team," May, 1911, p. 32.
How to work horses without straining them.

"Steer Feeding at Brandon Experimental Farm," June, 1911,
pp. 3, 5.
A comparative study of feeding steers straight grain on grain
and alfalfa.

"Beef Raising in Canada," July, 1911, p. 19.
Steps to successful cattle raising in point form.

"Selection of Beef Sire," September, 1911, p. 19.
Qualities to look for in acquiring a bull.

"University of Saskatchewan," October, 1911, pp. 4-5.
Summary of agricultural college curriculum.

"Milking Machines," September, 1911, p. 41.
How 1911 type milking machines functioned.

"General Purpose Cows," September, 1911, pp. 30-31.
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those useful for both butchering and milking.

"Sheep in Saskatchewan," October, 1911, p. 17.
Extent of Saskatchewan's Sheep Industry.

"Poultry Fattening," November, 1911, p. 9-10.
Comments on a Saskatchewan Department of Agriculture pamphlet.

"Selection, Care and Management of the Brood Sow," November,
1911, p. 31.
Acquiring suitable breeding swine.

"Poultry Conditions in Western Canada," December, 1911, p. 4.
Raising poultry as a sideline to wheat growing.

James Hopkins, "Butter Making on A Farm," December, 1911, pp.
11-12.
A guide to the techniques involved.

"Mixed Farming is a Need of the West," January, 1912, p. 30.
A plea for mixed farming.

Cora Hind, "Condition of the Livestock Industry," February,
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Statistical account of hogs, horses, and sheep raising in
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"Wants Diversified Farming in Canada," February, 1912, p. 31.
Account of a lecture in Winnipeg given by J.H. Worst, Presi-
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"Livestock Industry," March, 1912, p. 7.
The future of the livestock industry in the Moose Jaw
district.

"Sheep Industry in Saskatchewan," April, 1912, p. 15.
Advantages of sheep raising in western Saskatchewan.

"Water for Livestock," July, 1912, p. 7.
The necessity of water for livestock raising.

- "Will Mixed Farming Pay?" July, 1912, pp. 21-22.
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- W.J. Elliott, "The Importance of the Calf," September, 1912, p. 19.
A summary of calf raising techniques.
- J.G. Rutherford, "Making Sheep Raising Profitable," January, 1913, pp. 5, 7.
A summary of the advantages of sheeprearing.
- "Profits of Dairy Farming," January, 1913, p. 15.
Dairying as a sideline to grain growing for additional income.
- "Raising Turkeys," January, 1913, p. 17.
Potential profits for turkey raisers.
- "Wintering Horses in the Open," April, 1913, pp. 8-9.
The advantages of outdoor wintering of horses.
- "Reasons Why Dairying Should be Followed," December, 1913, p. 17.
Dairying as a means of improving a farmer's financial condition.
- "The Cow for Dairymen," January, 1914, pp. 23, 25.
Advantages of raising holstein-friesian cattle.
- "Is Dairying a Stable Industry?" January, 1914, p. 31.
An assessment of the demand for dairy products.
- F. Torrance, "Hog Cholera," April 1914, pp. 8, 29.
Symptoms and treatment of hog cholera.
- "Cure for Hog Cholera," June, 1914, p. 8.
Discovery of a cure for the disease.
- "Winter Steer Feeding in Alberta," August, 1914, p. 11.
Results of Experiments conducted in Alberta.
- W.R. Motherwell, "The Influence of the War on Saskatchewan Agriculture," December, 1914, p. 15.
Effect of the war on livestock production.
- W.J. Rutherford, "Corn as Compared With Grain for Feeding Purposes," February, 1915, pp. 5, 7.
A comparative study of the two fodder crops.

"Why Marketing of Mixed Farming Products has Not been Developed," February, 1915, p. 13.

An assessment of the reasons for low livestock prices.

Benjamin H. Thomson, "What I Have Accomplished in Building Up a Profitable Dairy Herd," February, 1915, pp. 14-15.

A personal account of dairying results.

"Mixed Farming," March, 1915, pp. 13, 15.

Advice to farmers to curtail hog production.

"Mixed Farming is Coming," October, 1915, p. 1.

A resume of mixed farming in Saskatchewan's history.

"Corn Versus Oats for Working Horses," November, 1915, p. 19.

Account of an experiment conducted at the Manitoba Agricultural College.

F.B. Fulmer, "Winter Dairying," December, 1915, p. 8.

Advantages of winter dairying.

J.B. Fulmer, "Feeding Dairy Cows," January, 1916, p. 9.

The principles to follow in obtaining a maximum milk flow.

"Our Dairy Industry," May, 1916, p. 13.

Summary of the Saskatchewan dairy industry in point form.

Arthur G. Smith, "Every Dairy Can Be Made to Pay a Profit," May, 1916, p. 21.

Improving a herd with a pure bred bull.

G. Hutton, "Grading up a Dairy Herd," July, 1916, pp. 5-7.

Steps for improving a farmer's dairy operations by breeding superior animals.

F.C. Elford, "Poultry," July, 1916, p. 9.

A step by step account on poultry rearing.

"Livestock Situation - Regina Board of Trade Takes Action," November, 1916.

Steps taken by Regina Board of Trade to encourage Livestock production.

"The Place of the Dual - Purpose Cow in Western Agriculture," January, 1918, p. 7.

Advantages of raising dual purpose shorthorns.

"What Sort of Shelter Shall I provide for Stock?", January, 1918, p. 9.

Suggestions for the construction of prairie livestock barns.

"Greater Hog Production - What the Moose Jaw Agricultural Society is Doing," January, 1918, p. 13.
Attempt of one organization to encourage swine raising.

Brenda E. Dow, "Hay Raising," February, 1918, p. 7.
Suggestions for beginners.

"The Feeding of Calves," February, 1918, p. 19.
How to feed calves, a point-form instructional guide.

"Pasture for Hogs," April, 1918, p. 3.
The advantages of providing swine with pasture.

"The Cost of Pork Production," May, 1918, p. 11.
The cost of feeding each individual pig during its lifespan.

"Methods of Weaning Little Pigs," June, 1918, p. 7.
How to tend to newlyborn hogs.

Wayne Dinsmore, "About Horses," September, 1915, p. 7.
The place of percheron in Western Canadian and American agriculture.

"Government to Supply Sheep on Credit Terms," October, 1918, p. 1.
A synopsis of a federal government plan to aid the Saskatchewan sheep industry.

"Feeding the Brood Sow in Winter," December, 1918, p. 21.
Assessing the most suitable feed for female hogs in winter.

"Winter Housing for Cattle," December, 1918, p. 21.
Results from experiments at Lacombe, Alberta on ideal winter cattle shelters.

"Winter Housing for Swine," December, 1918, p. 22.
Results from experiments at Lacombe on ideal winter housing swine shelters.

"Winter Care of the Flock," December, 1918, p. 23.
A summary of techniques for winter feeding and breeding.

"Equine Influenza," January, 1919, p. 11.
The synopsis and treatment of influenza in horses.

"Disinfect the stables," January, 1919, p. 11.
Disinfecting stables as a sanitary measure.

"Mineral Requirements of Hogs," January, 1919, p. 47.
Supplying hogs with the earth and ashes they require.

"Common Parasites of Swine," January, 1919, p. 19.
Cleansing hogs of their insect-caused infections.

"Fitting Cows for Lactation," February, 1919, p. 9.
Suggested frequency for milking cows during pregnancy.

"Light in the Poultry House," February, 1919, p. 17.
The benefits of artificial lighting in poultry housing.

"Hemorragic Septicemia," April, 1919, p. 9.
Symptoms and treatment of the disease in cattle and sheep.

"Calf-Raising - How Done Most Economically," April, 1919, p. 23.
How to cut costs in cattle feeding.

"The Success of the Saskatchewan Creamery Co. Moose Jaw,"
October, 1919, p. 19.
Account of the Moose Jaw Facility Production.

J.G. Robertson, "Classifying Cattle According to Type,"
March, 1920, p. 17.
Comparative essay on qualities of various cattle types.

PRIVATE PAPERS

W.R. Motherwell Papers - Saskatchewan Archives Office,
Saskatoon, Saskatchewan.

Only a limited number of insights can be gained into animal husbandry from examining the Motherwell Papers. The information gleaned is confined to government policy when Motherwell was Saskatchewan's and later Canada's Minister of Agriculture. Moreover, the files on government livestock and dairy policy are thin and incomplete. Little correspondence or manuscript material exist on Motherwell's attitudes to veterinary and livestock rearing techniques, perhaps because he was not knowledgeable in these areas. Below is a list of relevant materials.

File No. 5 - Abattoirs

No. 297-298 - N.Y. Neill, North Battleford, Saskatchewan
to W.R. Motherwell, Regina, 22 December, 1913.
Correspondence regarding North Battleford's

attempt to obtain a government operated abattoir.

- No. 308 - "Suggestions as to the Organization of Co-Operative Packing Co."
- No. 306-307 - W.B. Cummings, Saskatchewan Department of Agriculture, Saskatoon to Motherwell, 24 February, 1914.
- Accounts of meetings held in various towns to obtain government abattoirs.

File No. 33 - Creameries

- No. 3712-13 - 1890s creamery statistics in districts now comprising Saskatchewan. A creamery by creamery account.
- No. 3714-15 - Objectives of co-operative creameries.
- No. 3741-42 - Motherwell to W.H. Minhinnick, Church-bridge, Saskatchewan, 12 April, 1907. Operational costs of creameries.
- No. 3743-45 - Mrs. R. Shore, Fort Qu'Appelle, Saskatchewan, to Motherwell, 21 August, 1907, Motherwell to Shore, 4 September, 1907, Management and ownership of the Fort Qu'Appelle Creamery.
- No. 3769-70 - Motherwell to H. Bolocan, Kipton, Saskatchewan 19 February, 1909. Motherwell's views on dairying.
- No. 3789-90 - Motherwell to Dr. J.W. MacNeill, M.L.A. Hanley, Saskatchewan, 20 May, 1909. Government Creamery Policy.
- No. 3802-03 - H.C. Pierce, Wadena, Saskatchewan to Motherwell, 11 April, 1910. Dairying conditions in Wadena area.
- No. 3804-11 - H.C. Pierce to W.A. Wilson, 11 April, 1910
Pierce to Motherwell, 11 April, 1910
Motherwell to Pierce, 15 April, 1910
How a dairy was established.
- No. 3850 - Motherwell to L.T. McDonald, Commissioner. Board of Trade, Regina, Saskatchewan, 25 May, 1913,
Board of Trade, Regina, Saskatchewan, 25 May, 1913.
Motherwell's views on dairying.
- No. 3893 - Motherwell to Hugh McKellar, Moose Jaw,

Saskatchewan Secretary, Saskatchewan Stock Growers' Association, 5 July 1917.
Government creamery policy.

File 43 - Farm Buildings

- No. 5929 - Motherwell's Secretary to W.A. Grainger, Acting Chief Forestry Lands Department, Victoria, British Columbia, 4 December, 1915. Motherwell's lack of familiarity with silos and root cellars.
- No. 10926-28 - Memorandum from Canadian Bankers' Association advocating an increase in livestock production through government assistance.
- No. 10959 - Motherwell to Robert Sinton, Regina, 1 June, 1908.
- No. 10971-72 - Motherwell to F.O. Lyall, Montreal. Difficulties of sheep raising in Saskatchewan.
- No. 11017-19 - N.G. Neill, North Battleford to Motherwell 26 August, 1913. North Battleford's attempt to encourage regional livestock industry.
- No. 11023 - Motherwell to William Newman, Lorneville, Saskatchewan, 3 November, 1913. Problems in feeding calves.
- No. 11024-27 - Motherwell to Martin Burrell, Minister of Agriculture, Ottawa, 25 April, 1914. Opposition to federal importation and licensing of sires (horses).
- No. 10031-33 - John Bright, Canada Livestock Commissioner, Ottawa to Martin Burrell, Ottawa, 11 June, 1914. Federal livestock policy.
- No. 11038-39 - John Bright to Motherwell, 18 December, 1916. Encouraging Canadian livestock industry.
- No. 11040-41 - Motherwell to Bright, 6 January, 1917. Motherwell's opposition to encouragement of hog industry.
- No. 11044-46 - Motherwell to Editor, Nor'West Farmer, Winnipeg, 28 December, 1917. Motherwell's views on livestock marketing and hog production.

File 73 - Livestock Diseases

- No. 11071-72 - Motherwell to J.D. Robertson, Canora
Saskatchewan, 7 July, 1910.
Government policy in testing animals for
diseases.
- No. 11077-79 - Motherwell to Martin Burrell, Ottawa,
4 December, 1913.
The importation of tubercular cattle into
Canada.
- No. 11083-86 - Motherwell to Burrell, 26 December, 1913.
Further explanation to diseased cattle
problems.
- No. 11090-96 - Burrell to Motherwell, 7 January 1914.
Motherwell to Burrell, 17 January, 1917.
Federal policy on tuberculosis in cattle.

File 75 - Western Canada Livestock Union

- No. 11271-72 - J.G. Rutherford, Calgary to Motherwell,
15 November, 1913.
Formation of Western livestock Union - A
merger of all western stock associations.
- No. 11311-17 - E.L. Richardson, Secretary, Western Canada
Livestock Union, Calgary, Alberta to
Motherwell, 7 December, 1917.
Resolutions passed by Association regarding
livestock selling and marketing.

File 81 - Motherwell's Addresses and Articles

- No. 11897-11910 "The Livestock Situation."

File 120 - Veterinarians & Veterinary Medicine

- No. 17042 - Regulations for licensing veterinarians in
Saskatchewan, 5 May, 1906.
- No. 17104-06 - Motherwell to J.J. Morrison, Secretary,
Saskatchewan Veterinary Association, Arcola,
Saskatchewan, 4 September, 1913.
Interpretation of Veterinary Act.
- No. 17109-10 - Motherwell to E.A. Grange, Ontario Veterin-
ary College, Toronto, Ontario, 3 December,
1913, Grange to Motherwell, 8 December, 1913.
Motherwell as a former student of the Grange
at the Grange Ontario Agricultural Colleges.

File 162 - Deputy Minister Files

- No. 23541-42 - Motherwell Canadian Minister of Agriculture, Ottawa, F.H. Auld, Deputy Minister of Agriculture, Regina, 25 March, 1926.
- No. 23543-45 - Motherwell to (name missing). 8 March, 1927.
Bulls.
- No. 23546-49 - Isabel Cummings, Motherwell's Secretary to F.H. Auld, 15 March, 1927.
Motherwell to Editor, Manitoba Free Press, Winnipeg, Manitoba, 10 March, 1927.
J.W. Auld to Miss J.J. Cummings.
Discontinuance of Federal Bull Loaning Policy.

PART B - "Sources available in Ottawa" is published in Research Bulletin 78.

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