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A Bibliographic Study of
Field Agriculture in the Canadian Prairie West 1870-1940

Introduction

The period 1880-1920 was a time when new techniques were devised to make the semi-arid Canadian plains productive. The era was one of experimentation - of successes and failures - in an attempt to make the dry belt an area where field crops could be successfully raised. By 1920 experimentation had led to a comprehensive knowledge of dry belt agriculture. John Bracken and Seager Wheeler had published comprehensive studies on field husbandry. Angus Mackay's experiments at Indian Head had proven successful for the greater part and W.R. Motherwell had completed his task of educating farmers on dry belt farming techniques.

Improvements in crop cultivation from 1880 to 1920 were numerous. Summer fallowing had become the norm during 1880-1912. Dry farming techniques such as the selection of suitable seed, the replacement of broadcast seeding with the seed drill, the popularization of harrowing, and the use of the subsurface soil packer became widespread. Diversification became evident in field crops; farmers began to cultivate alfalfa, potatoes, oats, and barley. Advances were made in ploughing and threshing technology; the steam-tractor was introduced only to be replaced by its gasoline-powered equivalent. Agricultural education had its beginnings during this period; agricultural colleges were established in the three prairie provinces and extension programmes were inaugurated and developed.

A number of things were not subject to change. Spring wheat remained the prime prairie crop never to be challenged by winter wheat. During the 1920s the horse was just as valuable a farm animal as it was in 1880 being supplemented

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but not entirely replaced with the tractor. Forage crops such as red clover and brome grass failed to replace oats as a mainstay.

Literature Review

Interpretative works on prairie agricultural history are few in number. Undoubtedly the most complete study is Ernest B. Ingles' M.A. Thesis Some Aspects of Dry-Land Agriculture in the Canadian Prairies to 1925. Ingles argues that farm change from 1880-1925 was 'a delayed halting [and] hesitant process', that while experimentation in animal and mechanical power and in tillage and cropping practices led to improved methods in dry land agriculture during this period, many farmers were slow to abandon their traditional ways in favour of the new techniques.¹ While this argument is not without merit, there is overwhelming evidence of the general acceptance of a suitable set of farming techniques for dry land farming. Ingles errs when he states that farmers refused to abandon their traditional ways; from 1880-1925 in Western Canada there were NO traditional techniques. The dry belt was a new farming area and farmers were eager to make it productive. As early as the mid-1880s the agricultural press in general and the Nor-West Farmer in particular spearheaded the search for new methods. If letters to the editor are any indicator, farmers were eager to adopt any new techniques that would increase their income. A second area which Ingles had failed to consider is the fact that by 1920 farmers had a series of monographs on proper cultivation techniques available. If Ingles would have analyzed the field crop manuals of Wheeler and Bracken his assessment might have been different. While Ingles tends to downplay the agricultural advances of the period and omit the writings of Bracken and Wheeler, his work is still useful. He delves into summer fallowing, ploughing, and subsoiling techniques, mechanization on prairie farms, and custom threshing. His bibliography is superbly detailed.

The only published overview of prairie agriculture is Grant MacEwan's popular book Between the Red and The Rockies.² MacEwan describes the events of 1880-1920 (approximately) as an "agricultural revolution". However this term is a misnomer. Placing the adjective "agricultural" before the noun "revolution" denotes a drastic change from one type of farming to another. This did not happen. Farmers merely learned to cultivate crops that would be productive in the new prairie environment. MacEwan's book is a very general

account of prairie agriculture. It deals with cattle production as well as field crops. It covers such diverse areas as the Hudson's Bay Company and agriculture, the Selkirk settlers, agricultural colleges, and agricultural fairs.

American interpretations of the period are few and not wholly relevant. The only major work worthy of note is Mary W.M. Hargreaves' Dry Farming in the Northern Great Plains, 1900-1925.³ Hargreaves studies the dry farming movement as the creation of Hardy Campbell. She concludes that the discovery of new techniques constituted less of an advance in agricultural technology than a publicity campaign by American railroads and land companies to rid themselves of acreage still vacant. This interpretation can hardly be applied to the Canadian Prairies. The work of Dominion Experimental Farms and Colleges of Agriculture made advances in field crop technology more real than illusory.

The interpretations proffered by Ingles, MacEwan, and Hargreaves do not entirely explain the evolution of techniques in field crop production, 1880-1920. A more fruitful approach would be to examine the period as one of adaptation in which farmers utilized new techniques to the recently opened dry belt productive.

A great deal has also been written on more specific aspects of field agriculture, some particularly relevant to Western Canada. Robert L. Jones' History of Agriculture in Ontario, 1613-1880 provides a good introduction to early Ontario wheat-growing techniques.⁴ Stanley M. Murray's The Valley Comes of Age provides a useful study of agricultural practice developed by settlers at Red River as well as an analysis of early North Dakota wheat growing.⁵ Grant MacEwan deals with agriculture of the Selkirk settlers in Between the Red and the Rockies and with early experimentation at Red River in his essay on Archibald Wright in The Sodbusters.⁶ John Bracken's Crop Production in Western Canada, and Seager Wheeler's book on Profitable Grain Growing are technical treatises in layman's language applying dry farming techniques to wheat production.⁷

For the development of seeding and summer fallowing techniques the best source for the 1880s and early 1890s is the Nor-West Farmer. For the years 1908-20 The Grain Growers' Guide is superb, having published articles by such authorities as Seager Wheeler and John Bracken. Other journals of some use are The Canadian Thresherman, Farm Crops, The Farmers' Advocate, and The Public Service Monthly. Manuscripts of value include the W.R. Motherwell Papers and probably the F.H. Auld Papers in Regina. The historian's

best secondary sources would be Ingles' thesis, MacEwan's The Sodbusters, and Mary W.M. Hargreaves' "Dry Farming Alias Scientific Farming" in Agricultural History, 1948 which examines the theories of Hardy Campbell.

The sources for the history of other field crops are varied. Again of greatest value is The Grain Growers' Guide for 1908 to 1920, The Canadian Thresherman, The Farmers' Advocate, and The Public Service Monthly. Among the best secondary sources available are Clark & Malte's Fodder and Pasture Plants, The Saskatchewan Department of Agriculture pamphlet "Hints for Flax Growers" and the Ingles thesis.⁸ Bracken's Crop Production in Western Canada is also useful.

Material for the evolution of mechanization on the prairies is abundant. For an introduction to the origins of steam ploughing and threshing as well as the development of the agricultural steam-engine R.M. Wik's Steam Power on the American Farm should be examined.⁹ To place development in a Canadian context MacEwan's excellent book Power for Prairie Plows should be consulted.¹⁰ Of limited usage are technical treatises such as R.B. Gray's Development of the Agricultural Tractor in the United States and James B. Stephenson's Traction Farming and Traction Engineering.¹¹ Specific citations of steam-power usage in the 1880s appear in the Nor-West Farmer. Other useful journals specializing in mechanical cultivation are Canadian Farm Implements (particularly "The Development of Traction Plowing" June-November, 1910), The Canadian Thresherman, Gas Power Age, and to a lesser extent The Grain Growers' Guide and Public Service Monthly.

For an assessment of the effect of agricultural college education on field agriculture the best source is the Saskatchewan Annual Report of the Department of Agriculture which provides statistics on enrolment of Saskatchewan students at the Saskatchewan Agricultural College as well as in the Winnipeg and Guelph programmes. Alberta material will be found in the Department of Agriculture files in archives of that province. Secondary sources on the subject are sparse. MacEwan's Between the Red and the Rockies contains a section on agricultural colleges and Lawrence E. Kirk's "Early Years in the College of Agriculture" is the only modern article on the subject.¹² Extension education and agricultural society educational programmes are best covered in Saskatchewan, Annual Reports of the Department of Agriculture, The Grain Growers' Guide, The Canadian Thresherman, and Gas Power Age. Agricultural Society Minutes held at the Glenbow Foundation Archives and Saskatchewan Archives

in Saskatoon will be useful, as well as material in the W.R. Motherwell Papers. MacEwan's Agriculture on Parade contains a useful section on agricultural exhibitions at Regina.¹³ F.H. Aulds' "Farmers Institutes in the North West Territories", Saskatchewan History and the "Saskatchewan Agricultural Societies Association", Saskatchewan History, XIV, No. 1 (Winter, 1961) are both very revealing, as is Allan Turner's "W.R. Motherwell and Agricultural Extension", Saskatchewan History, XII, No. 5 (Autumn, p. 159).

For the study of prairie experimental farms and the experiments they conducted no source is superior to the Dominion Experimental Farm Reports in the Canada Sessional Papers. Using these reports the historian can trace the evolution of farm technology qualitatively as well as statistically. These reports should be supplemented with the Department of Agriculture Papers RG 17 at the Public Archives of Canada - a collection that should contain complete records of experimental farms and their impact on dry land farming.

To assess the total impact of improved farming techniques devised by the Dominion Experimental Farms, the Annual Report of the Saskatchewan Department of Agriculture should suffice. These reports have statistical accounts of crops cultivated by the various methods of dry land farming.

Endnotes

- 1 Ernest B. Ingles, Some Aspects of Dry-Land Agriculture in the Canadian Prairies to 1925 (Unpublished M.A. Thesis, University of Calgary, 1973), p. 4.
- 2 Grant MacEwan, Between the Red and the Rockies (Toronto: University of Toronto Press, 1952).
- 3 Mary W.M. Hargreaves, Dry Farming in the Northern Great Plains, 1900-1925 (Cambridge: Harvard University Press, 1957).
- 4 Robert L. Jones, History of Agriculture in Ontario, 1616-1880 (Toronto: University of Toronto Press, 1946).
- 5 Stanley M. Murray, The Valley Comes of Age: A History of Agriculture in the Valley of the Red River of the North, 1812-1920 (Fargo: North Dakota Institute for Regional Studies, 1967).
- 6 Grant MacEwan, The Sodbusters (Toronto: Thomas Nelson & Sons, n.d.).

- 7 See John Bracken, Crop Production in Western Canada (Winnipeg: Grain Growers' Guide, 1920); Dry Farming in Western Canada (Winnipeg: Grain Growers' Guide, 1921). Seager Wheeler, Seager Wheeler's Book on Profitable Grain Growing (Winnipeg: Grain Growers' Guide, 1919).
- 8 George A. Clark and M. Oscar Malte, Fodder and Pasture Plants (Ottawa: Department of Agriculture, 1913); A.F. Mantle, "Hints for Flax Growers," Bulletin, No. 24, (1911) (Saskatchewan: Department of Agriculture).
- 9 Reynold M. Wik, Steam Power on the American Farm (Philadelphia: University of Pennsylvania Press, 1963).
- 10 Grant MacEwan, Power for Prairie Plows (Saskatoon: Western Producer Books, 1971).
- 11 R.B. Gray, Development of the Agricultural Tractor in the United States (United States Department of Agriculture, 1954), Vol. I; James H. Stephenson, Traction Plowing and Traction Engineering (Chicago: Frederick Drake, 1915).
- 12 Lawrence E. Kirk, "Early Years in the College of Agriculture," Saskatchewan History, XII, No. 1 (Winter, 1959), pp. 23-36.
- 13 Grant MacEwan, Agriculture on Parade (Toronto: Thomas Nelson & Sons, 1950).

Bibliography of Primary and Secondary Sources Relating to
Field Agriculture in the Canadian Prairie West 1870-1920

Glenbow Foundation Archives - Calgary

Citations:

Alberta. Department of Agriculture.
Records, cash books, minutes books, correspondence, etc. of
local agricultural societies in Alberta which had been
dissolved, 1907-55. 29 feet 5 inches.

Brooke, A.A.
"Pioneering Experiences in the Didsbury Area, 1901-1902".
Manuscript.

Camrose Historical Society
Threshers' Papers and Beef Ring Record, 1892-1938, 1908-28.
Extent of records unknown.

Case, J.I.
Correspondence, Mortgages and General Papers of Farm Machines
in Calgary, 1909-41. Extent of records unknown.

Herigstad, B.B.
Diaries and Account Books of Homesteaders in Pendant
d'Oreille District, Alberta 1909-11. Extent of collection
unknown.

Lambert, Augustin Emmanuel
Letters and Sketches re Farming experiences, Asquith and
Saskatoon, Saskatchewan, 1913-15. Extent of collection
unknown.

Longman, O.S.
"Pioneers and Pioneering in Western Canada," 1963 Manuscript.

Lucas, S.B.
"Reminiscences of Life in Wetaskiwin Area, 1879-1958,"
Manuscript.

Lucas, S.B. and F.A.
General Family Papers and Wetaskiwin Historical Sketches,
1898-1963. Extent of collection unknown.

Massey-Harris Co. Ltd. Calgary Agency
Correspondence and Papers of Massey-Harris Implement Dealers,
1924-26. Extent of collection unknown.

Rawlines, Alfred
Personal and Farm Papers re Agricultural Reform, Political
and Farming Matters, 1907-63. Extent of collection unknown.

Smith, K.L.
Reminiscences re Homesteading, Willow Birch, Saskatchewan,
1906. Manuscript.

Stokoe, J.
Letters of English Settlers re Farming and Homesteading in
Manitoba and Alberta, 1903-12. Extent of collection unknown.

Taylor, James M.
Personal and Farming Papers, New Brigden, Alberta, 1902-42.
Extent of collection unknown.

Trussler, A.F.
Correspondence while Homesteading near Wetaskiwin, Alberta.
Extent of collection unknown.

Manitoba Provincial Library - Winnipeg

Canada. Dominion Experimental Farm Reports. Sessional
Papers, 1889-1918.

These reports constitute one of the richest sources for the
field crop historian. From 1889-1914 each experimental farm
has its report printed independently of the others. After
1914 the report is divided into crop areas with each exper-
imental farm submitting its statement individually. For
the purpose of this study of Field Crops on the Prairies,
1880-1920 this writer has concentrated his efforts on
assessing the reports of farms at Brandon and Indian Head -
both in the dry belt area and to a lesser extent the sub-
missions from Lethbridge (after 1909), Lacombe, Alberta
(after 1909), and Rosthern, Saskatchewan (after 1911).
The experiments conducted at Brandon and Indian Head
during the period 1889-1900 fall into the following areas
(where complete statistical accounts are provided):

- 1) Various summer fallowing techniques
- 2) Growing various types of wheat in plots side by
side to determine the most successful variety
- 3) The cultivation of various types of oats and barley
- 4) Spring vs. fall breaking of land
- 5) Press drillings vs. broadcast seeding
- 6) Experiments in the quantity of seed to be used for
successful cultivation of various crops

- 7) Experiments on the correct depth to sow crops
- 8) Cultivation of brome grass and clover

1900-18:

- 1) Cultivation of flax
- 2) Experimentation with Marquis wheat as a superior brand to Red Fife
- 3) Experimentation in breaking and back-setting land
- 4) Unsuccessful experiments in growing fall wheat
- 5) Testing soil packers
- 6) Experiments in crop rotation.

The dates and successes of the various experiments as well as the statistical accounts provide the raw material for a complete assessment of the role of Dominion Experimental Farms in providing dry belt farmers with proper information on the most suitable crops to cultivate and the most useful techniques to utilize.

North-West Territories. Legislative Assembly. Annual Reports of the Department of Agriculture, 1905-40.

These reports constitute the main statistical source for the study of field agriculture in the dry belt. Saskatchewan is divided into crop districts and individual statistics on the acreage of various crops are provided for each area. Statistics on enrolment in the Saskatchewan Agricultural College, the extent and activities of agricultural societies, the overall success in cultivating crops utilizing summer fallowing and various ploughing techniques are supplied. In some editions essays by W.R. Motherwell on farming techniques are printed. On the whole each report provides the historian with a clear picture of Saskatchewan agriculture for the preceding year.

University of Saskatchewan. Saskatoon, Saskatchewan. President's Reports, 1909-10, 1910-11.

(Held by Manitoba Provincial Library in volume entitled Saskatchewan Pamphlets Volume IV.) These reports provide a statistical account of the early years of the Saskatchewan College of Agriculture. Funds spent by the College of Agriculture are broken down into expenditures for individual programmes.

Provincial Archives of Alberta - Edmonton

Agricultural Machinery Manuals

Catalogues, no date. Extent of Collection unknown.

Agricultural Colleges - General Index

Calendars, annual reports, glass negatives, etc.

Board of Agricultural Education

Minute Book. No date.

Citations: All information is taken from W. Moore to David Spector, October 21, 1976.

Department of Advanced Education

Registers and yearbooks from Claresholm, Raymond, Vermilion and Gleichen Agricultural and Vocational Colleges, 1913-31.

Department of Agriculture

Agricultural Societies' Files 1897-1960. Since files are indexed they are probably quite extensive.

Department of Agriculture

Papers of Deputy Minister of Agriculture, 1919-25 and files re Demonstration Farms, 1920-34. Extent of files unknown.

Department of Agriculture

Reports, correspondence, and accounts, 1895-1960. Extent of files unknown.

Olds Agricultural College Jubilee volume of OAC.

Olds School of Agriculture CSA Magazine, 1928-29.

Photograph Collection:

Boychuk Stooker

Monarch tractor pulling four binders

Threshing machine

Agriculture plots Threshing machines, tractors

Agriculture in Alberta, Photos, 1920.

Reeves Engine repair price list, 1911.

Reeves Machinery catalogue, 1915.

Reeves 32 steam traction engine. Blueprint.

Shackleton's threshing outfit, 1898. Article Manuscript.

University of Alberta
History of the Department of Agricultural Engineering by
B.T. Stephanson. No date.

Vermilion Agricultural School Catalogues and pamphlets.

Public Archives of Canada - Ottawa

John Bracken Papers

Lectures, 1917-19. MG 27 (III C16)

These lectures are probably on agricultural topics since Bracken was a professor at the Manitoba College of Agriculture at this time. Extent of early records unknown.

Canada, Department of Agriculture RG 17

Records of all aspects of agriculture, including records of the Central Experimental Farm, 1888-1934.

All records pre-dating 1920 are complete. 1750 feet 10 inches. This is the key collection for the study of field crop production.

Saskatchewan Archives - Regina

F.H. Auld Papers

Auld Papers are much more extensive than Union List of Manuscripts suggests. The collection contains "correspondence written by him during his lengthy period as Deputy Minister of Agriculture". Auld Papers are indexed.

Dry Farming Clipping File

Extent of collection unknown.

Example of holdings: H.A. Lewis "Use of Tillage Machinery in Dry Land Agriculture". 4 pages.

Saskatchewan. Department of Agriculture.

Deputy Minister's Office.

Correspondence, reports on agricultural societies and fairs, agricultural education, livestock, grain, services of the Department and the University of Saskatchewan, agricultural representation service, etc. ULM.

The greater portion of the early records "deal with such topics as the supply and distribution of seed grain, relief, drought conditions, suitability of wheat varieties and forage crops to Saskatchewan conditions, etc."

Thierman, Lois Mary
 "They Left a Legacy". Unpublished Typescript. 253 pages.
 Contents unknown.

Saskatchewan Archives - Saskatoon

Agricultural Society Records

1. Cabri Agricultural Society Minutes 1917. 44 pages.
 (Cited from letter D.H. Bocking to David Spector,
 November 2, 1976.)
2. Francis Agricultural Society. Minutes 1906-16. $\frac{1}{2}$ inch.
3. Kennedy Agricultural Society. List of pioneers. 8 pages.
4. Macrorie Agricultural Society, 1918-44. Minutes and
 Account Books. 5 inches.
5. Saltcoates Agricultural Society Minutes, 1892-1956.
 Account Books 1892-1960. Register. 1.5 feet.
6. Touchwood Agricultural Society Minutes 1911-30 and
 Account Books 1911-52.
7. Weyburn Agricultural Society Records, 1908-65.

Bradshaw, J.E.

Election Material, Farm Machinery Original, 1907-17.
 3 feet.

Elderton, A.W.

Papers. Can-nar-ee Threshing Syndicate Records for 1923.
 24 pages.

General Farm Implement Catalogues.
 Extent of collection unknown.

Husbandry. Dry Farming 1913-15.
 Mixed Farming 1912-13. Miscellaneous, 1913-23.
 No further citation. Extent of collection unknown.

Minutes of Proceedings and Evidence of Special Committee
 Appointed to Inquiry into Agricultural Conditions, April 10,
 1923. Extent of inquiry unknown.

Saskatchewan Archives, Pioneer Collection.

A series of completed questionnaires relating to pioneer
 life. Questions on farming experiences. 39 feet original.

Saskatchewan. Better Farming Commission, 1920-21.
 Extent of inquiry unknown.

Saskatchewan. Department of Agriculture.

Field Crops Branch, 1916-51 general correspondence, grasshopper control, insect pests, weed control, seeds.

Agricultural Representative Branch, 1914-44.

Subject Files 1902-43.

Agricultural Machinery Administration Branch Records.

232 feet. 1902-51. ULM.

In correspondence with D.H. Bocking, Associate Provincial Archivist in Saskatoon, I have been informed that the greater portion of records post-date 1920. However there appear to be a substantial number of files for the pre-1920 period and these will be useful to examine.

Saskatchewan. Department of Agriculture.

Price Lists and Catalogues of Farm Implements filed with the Minister of Agriculture under Provision of the Farm Implements Act.

Dates and extent of collection unknown.

Saskatchewan. Royal Commission on the Sale of Farm Machinery 1914-15. Original. 3 feet.

University of Guelph - Guelph, Ontario

Ontario Agricultural Records

Records of the Ontario Agricultural College are closed to researchers although they are complete. The reason is that these documents are being organized into an archival collection at the present time. However a substantial number of printed documents are available to researchers.

They include:

1. O.A.C. Review
2. O.A.C. calendars
3. Student Enrolment Records
4. O.A.C. Yearbooks
(John A. Moldenhaure, Collections Librarian,
University of Guelph to David Spector, November 9,
1976.)

ARTICLES AND PAMPHLETS

Auld, F.H.

"Farmers Institutes in the North-West Territories,"

Saskatchewan History, X, No. 2 (Spring, 1957) pp. 41-54.

A study of pre-1905 educational activities of NWT farmers.

Auld, F.H.

"The Saskatchewan Agricultural Societies' Association," Saskatchewan History, XIV, (Winter, 1961) pp. 1-16.
An administrative history of Saskatchewan's agricultural societies.

Auld, F.H.

"The Territorial Exhibition, 1895," Saskatchewan History, XV, No. 1 (Winter, 1962) pp. 19-29.
An account of a particularly important fair.

Hargreaves, Mary W.M.

"Dry Farming Alias Scientific Farming," Agricultural History, 22 (January, 1948) pp. 39-56.
A useful study of Hardy Campbell's dry farming theories.

Kirk, Lawrence E.

"Early Years in the College of Agriculture," Saskatchewan History, XII, No. 1 (Winter, 1959) pp. 23-36.
Reminiscences of student life at the Saskatchewan Agricultural College during its formative years.

Saskatchewan. Department of Agriculture.

"Hints for Flax Growers" (by A.F. Mantle) Bulletin No. 24, 1911.

An assessment of flax-growing techniques in 1911.

Saskatchewan. Department of Agriculture.

"Methods of Soil Cultivation Underlying Successful Grain Growing in the Province of Saskatchewan." Report of two addresses delivered by W.R. Motherwell before Dry Farming Congress. Bulletin No. 21, 1910. Accounts of two speeches by W.R. Motherwell on the principles of dry farming.

Turner, Allan R.

"W.R. Motherwell and Agricultural Education," Saskatchewan History, XII, No. 3 (Autumn, 1959).

Turner, Allan R.

"W.R. Motherwell: The Emergence of a Farm Leader," Saskatchewan History, XI, No. 3 (Autumn, 1958) pp. 94-103.
Early political career of Motherwell.

BOOKS AND THESES

Bracken, John

Crop Production in Western Canada. Winnipeg: Grain Growers' Guide, 1920.

This was one of the most important books published on prairie agriculture. It is a summation of all knowledge on crop production obtained through practice and experimentation to 1920. It contains chapters on successful cultivation of wheat, oats, barley, rye, flax, alfalfa, potatoes, corn, etc. It signifies the culmination of an era: the attempt to make the prairies productive.

Bracken, John

Dry Farming in Western Canada. Winnipeg: Grain Growers' Guide, 1921.

This is the companion volume to Crop Production and is as significant as the previously cited work. It deals with all areas of dry farming such as summer fallowing, tillage, crop rotation, breaking, etc. It is the culmination of knowledge on prairie dry farming up to 1921.

Clark, George A. and Malte, M. Oscar

Fodder and Pasture Plants. Ottawa: Department of Agriculture, 1913.

A study of the cultivation of forage crops such as alfalfa, clover, brome grass, and rye. Each crop is listed individually and its suitability for cultivation in various parts of Canada is explained.

Ellis, L.W. and Rumely, A.

Power and the Plow. New York: Doubleday, Page & Company, 1911.

A highly technical study of the operational principles of steam and gasoline engines and their component parts.

Gray, R.B.

Development of the Agricultural Tractor in the United States. Volume I United States Department of Agriculture, 1954.

A catalogue of tractors (with the emphasis being placed on gasoline-powered ones) up to 1919. The book provides photographs and technical specifications.

Hargreaves, Mary W.M.

Dry Farming in the Northern Great Plains 1900-1925. Cambridge: Harvard University Press, 1957.

A study of dry farming solely as a movement begun by Hardy Campbell and utilized by land and railroad companies in the

United States to obtain favourable publicity for the sale of their lands. Hargreaves' conclusion is that dry farming south of the border constituted more of a commercial publicity campaign than a scientific one and that experimentation was primitive. This analysis is of little use to the Canadian situation where the scientific accomplishments were real and wide ranging.

Ingles, Ernest B.

Some Aspects of Dry Land Agriculture in the Canadian Prairies to 1925. Unpublished M.A. Thesis, University of Calgary, 1973.

The most important study of dry farming on the prairies yet attempted. While Ingles tends to downplay the agricultural advances of the period and omit the writings of Bracken and Wheeler, his work is still useful. He delves into summer fallowing, ploughing, and subsoiling techniques, mechanization on prairie farms, and custom threshing. His bibliography is superbly detailed.

Jones, Robert L.

History of Agriculture in Ontario, 1613-1880. Toronto: University of Toronto Press, 1946.

This book is of some use to the historian studying prairie field crops. A chapter entitled "The Wheat Farmer, 1815-1850" is particularly complete. It allows the researcher to obtain insights into wheat cultivation before wheat was introduced to the prairie dry belt. Unfortunately, Jones' analysis of "The Grain Trade and Grain Growing, 1886-1880" is much weaker. It fails in its lack of an attempt to analyze grain growing techniques during the period. Another omission is the lack of an attempt to study the activities of the Ontario Agricultural College during its formative years, 1874-80. Of some interest however are the sections on agricultural societies and exhibitions in pre-1880 Ontario.

MacEwan, Grant

Agriculture on Parade. Toronto: Thomas Nelson & Sons, 1950.

A very general history of agricultural fairs in Western Canada. There is little of importance re dry farming and field agriculture. The only useful section is the piece on agricultural exhibitions at Regina.

MacEwan, Grant

Between the Red and the Rockies. Toronto: University of Toronto Press, 1952.

MacEwan's book is a very general account of the "agricultural"

revolution in Western Canada. It deals with cattle production as well as field crops. It covers such diverse areas as the Hudson's Bay Company and agriculture, the Selkirk Settlers, agricultural colleges, and agricultural fairs. As a result of its overly general nature it is of limited use to the field crop historian.

MacEwan, Grant

Fifty Mighty Men. Saskatoon: Modern Press, 1958.

A series of brief biographical sketches on important prairie historical figures. Included in the volume are sections on W.R. Motherwell and Seager Wheeler. These short articles are too general and too devoid of detail to be of much use.

MacEwan, Grant

Power For Prairie Plows. Saskatoon: Western Producer Books, 1971.

A well written popular history of the evolution of farm traction power. For the researcher it serves as an excellent introduction to the subject of horse, steam, and internal-combustion ploughing and threshing power. The work is profusely illustrated.

MacEwan, Grant

The Sodbusters. Toronto: Thomas Nelson & Sons, n.d.

A very useful collection of biographical sketches on pioneers in dry farming. Accounts of the lives of Angus Mackay, W.J. Rutherford, Archibald Wright, W.R. Motherwell, and Seager Wheeler are provided. The sketches are sufficiently detailed to be of use to the researcher.

Murray, Stanley M.

The Valley Comes of Age: A History of Agriculture in the Valley of the Red River of the North, 1812, 1920. Fargo: North Dakota Institute for Regional Studies, 1967.

A very useful study of farming techniques in North Dakota and the experimentation that was being conducted there simultaneously with work at Indian Head and Brandon. The book also contains a very detailed section on agricultural techniques practiced by the Selkirk settlers.

Paterson, Elizabeth.

Massey, McIntosh, Saunders: Pioneers in Agriculture. Toronto: Clarke, Irwin, 1957.

A children's book on agricultural pioneers. Absolutely useless to the historian studying prairie field crops.

Rasmussen, Wayne D.

Readings in the History of American Agriculture. Urbana: University of Illinois Press, 1960.

This work is a collection of contemporary articles on farming as it existed at various stages in U.S. history: a source-book. Several of the introductions to the sources written by Rasmussen are informative and useful.

Stephenson, James H.

Traction Farming and Traction Engineering. Chicago: Frederick Drake & Company, 1915.

A study of the mechanical components of gasoline-traction engines. A major section of the book is devoted to elucidating the attributes of various makes of tractors. The book contains a useful section which assesses the benefits in using kerosene as a tractor fuel.

Turner, Allan R.

W.R. Motherwell and Agricultural Development in Saskatchewan, 1905-1918. Unpublished M.A. Thesis, University of Saskatchewan, 1958.

Turner carefully assesses Motherwell's record as Saskatchewan's Minister of Agriculture. The thesis is of limited value in examining field agriculture on the prairies.

Wheeler, Seager.

Seager Wheeler's Book on Profitable Grain Growing. Winnipeg: Grain Growers' Guide, 1919.

Along with John Bracken's two studies published at roughly the same time Wheeler's book constitutes an authoritative guide to the principles of dry farming as they have evolved to 1919. Wheeler's book is full of intricate details of breaking, ploughing, summer fallowing techniques, selection of grain seed, and all other relevant advances. Along with Bracken's works Wheeler's book is ample evidence of the complexity of dry farming in 1919.

Wik, Reynold M.

Steam Power on the American Farm. Philadelphia: University of Pennsylvania Press, 1963.

A useful study of the evolution of American steam-power on the farm complete with statistics.

CONTEMPORARY JOURNALS

Canadian Farm Implements. Winnipeg, Manitoba, 1905-19. This journal was published as a trade journal for agricultural implement dealers in Winnipeg and on the prairies. Articles on traction ploughing occasionally made their appearance. Below is a list of useful articles of some relevance to field crop cultivation:

"Hints on Handling Gasoline Engines," November, 1906, pp. 38-9.
Article provides tips to salesmen on how to market gasoline engines to farmers.

"Manitoba Agricultural College Opened," November 1906, p. 18.

L.W. Ellis, "Development of Traction Plowing,"
Part One June, 1910, pp. 7-10
Part Two July, 1910, pp. 9-12
Part Three September, 1910, pp. 7-9
Part Four October, 1910, pp. 7-9
Part Five November, 1910, pp. 7-9
An assessment of the tractor up to and including 1910 providing explanations of engines, ploughs, operational costs, and profit potential from successful operations.

"Steam and Gasoline Engineering Course at Manitoba Agricultural College," June, 1910, p. 20.
Announcement of a short course for threshermen and farmers on servicing and operation of various engines.

"Buying Implements from the Farmers' Standpoint," December, 1910, p. 44.
An assessment of the criteria that the farmer should base his purchase of any piece of machinery on.

Farm Crops, Winnipeg, Manitoba, 1907-10 (preceded by The Grain Dealer's Journal, 1905-06)). This journal had a checkered history. It began publication as The Grain Dealer's Journal in 1905. In 1907 it was renamed Farm Crops in an attempt to appeal to farmers as well as grain dealers. In its Farm Crops format it existed until March, 1910 when it became Bulman's Magazine - a family farm journal. In August, 1910 the publication was renamed Bulman's Farm & Motor Magazine in an attempt by its publisher to capitalize on the lucrative business of advertising

automobiles and tractors. In this format it folded at the end of 1910. A number of very useful articles appeared in this publication. The most important was a lengthy article on Manitoba Agricultural College - a piece which will prove to be the definitive early study of that institution circa 1908. Articles found useful are the following:

"Expert Information on Wheat Growing," The Grain Dealer's Journal, February, 1906, p. 6.

An account of the dry farming techniques of E. Stueck, W.R. Motherwell's neighbour at Abernethy.

"Manitoba Agricultural College," July, 1908, pp. 36-48.

A study of the facilities at the Manitoba Agricultural College, regulations applying to student attendance, and an assessment of courses taught and their content.

"Eradication of Noxious Weeds," May, 1909, pp. 18-22.

This article explains the weed problem and provides suggestions for the destruction of weeds.

W.R. Motherwell, "Wheat Growing in the Canadian West," June, 1909, pp. 5-7.

A guide to the successful cultivation of wheat using dry farming principles.

Angus Mackay, "Hints to Homesteaders on Breaking Land," June, 1909, p. 11.

Instructions to newly arrived farmers on how to bring land into cultivation.

"The time, the Place and the Man," Bulman's Magazine, March, 1910, p. 22.

A biographical and character sketch of W.R. Motherwell.

Gas Power Age, Winnipeg, Manitoba, 1910-14.

A publication devoted to the popularization of the internal-combustion engine in tractors and automobiles. This journal contains a number of useful articles on traction ploughing.

A.M. Brown, "Threshing with Gas Power," January, 1911, p. 26.

An early account of threshing with an internal-combustion engine at Scott, Saskatchewan.

"Gas Tractor Experiences," March, 1911, pp. 24-5.

Ploughing experiences using gasoline tractors related by various farmers.

"The invention of Dry Farming," May, 1911, pp. 11-3.
A history of the discovery of scientific farming techniques during the 1700s.

"A Thresherman's Experience with Steam and Gas Engines," May, 1911, p. 27.
A brief account of a thresherman's experience with an early gasoline-powered thresher.

M.R.D. Owings, "New Method Machines for the Farm," June, 1911.

A general survey of farm mechanization in North America.

"Alfalfa Growing," July, 1911, pp. 18-9.
Instructions on how to grow alfalfa.

"Gasoline Engine Courses by Saskatchewan College of Agriculture," January, 1912, p. 23.
A bulletin on a course offered in Saskatoon.

L.J. Smith, "Power on the Farm," March, 1912, pp. 12-3.
A general assessment of the role tractors can play in prairie agriculture.

"The Great Gas Engine Educational Movement," April, 1912, pp. 16, 18-23.
Courses on traction ploughing offered by tractor manufacturers.

C.V. Hull, "Successful Operation of the Gas Tractor," September, 1912, pp. 11-4.
How to drive a tractor.

"Deep Plowing with dynamite," October, 1912, pp. 11-4.

"The Gas Engine Schools of 1913," April, 1913, pp. 11, 15-7.

A survey of short courses in tractor operation offered by manufacturers.

"Agricultural College Education," November, 1913, pp. 14-5.
A brief account of the new facilities erected by the Manitoba Agricultural College.

"The Engine Schools of 1914," February, 1914, p. 35.
An account of the short courses in tractor operation offered by manufacturers.

"The Passing of the Primitive," March, 1914, 3 pages unnumbered.
An assessment of technical advances in seeding from 1904-14.

"The Gas Engine Schools of 1914," March, 1914, 2 pages unnumbered.
An account of short courses in tractor operation.

"Manitoba Agricultural College," March, 1914, 1 page unnumbered.
An account of the formal opening of the new facilities at the Manitoba Agricultural College.

A.F. Mantle, "Mixed Farming," May, 1914, 3 pages unnumbered.
Reasons for entering mixed farming.

Nor-West Farmer, Winnipeg, Manitoba (examined 1884-93).
The Nor-West Farmer is most useful for the early record of summer fallowing, early development of suitable dry belt farming techniques, and the development of suitable farm machinery. Articles are short but generally well written. For the 1884-93 period this journal is the only publication in existence.

"A Northwest Farm," July, 1885, p. 134.
Agricultural activities on a farm near Regina.

"White vs. Red Fyfe," July, 1885, p. 144.
A discussion on which type of wheat is most suitable for prairie cultivation.

"Steam Plowing," August, 1885, p. 179.
The introduction of steam ploughing to the prairies.

"Hard vs. Soft Wheat," November, 1885, p. 283.
A discussion on which type of wheat is most suitable for the prairie climate.

"Prize Essay on Summer Fallowing," April, 1886, p. 440.

"Summer Fallowing," May, 1886, pp. 469-70.
Principles of summer fallowing.

"Summer Fallowing," June, 1886, p. 501.

"The Farm Garden," May, 1888, p. 127.
How to cultivate it and the appropriate vegetables to plant.

"Press Drills," September, 1889, pp. 246-7.
The introduction of press drills to the prairies.

"Cultivation after Fallowing," April, 1890, p. 455.
How to sow wheat after summer fallowing has been completed on the land.

"Mr. William Saunders," August, 1890, p. 557.
Biographical sketch of William Saunders, Director of Dominion Experimental Farms.

"The Press Drill," May, 1891, p. 130.
Advantages of press drill.

Angus Mackay, "Barley Growing," June, 1891, pp. 157-8.
Information on barley cultivation.

R. Waugh, "Summer Fallowing," July, 1891, pp. 187-8.
The first article to state that summer fallowing is carried out for the purpose of preserving soil moisture.

S.A. Bedford, "Varieties of Wheat," April, 1892, pp. 103f.
Varieties of wheat that can be grown on the prairies.

T.L. Morton, "Seeding," April, 1892, p. 100.

"How to Bluestone," January, 1893, pp. 24-5.
How to use this technique to guard against wheat smut.

"Noxious Weeds," April, 1893, pp. 104-5.
Article identifying harmful prairie weeds.

"The Failure of Ladoga," April, 1893, p. 106.
The failure of this North Russian variety of wheat at Indian Head.

Public Services Monthly, Regina, Saskatchewan, 1914-19.

This journal was the "House" publication of the Saskatchewan Civil Service from 1914-19. A number of useful articles were published in this journal. They are the following:

"Work of a Field Representative," September, 1914, pp. 49-50.
This article analyzes the functions of field representatives of the Saskatchewan Department of Agriculture.

"The Dry Farming Congress," November, 1914, pp. 103-4.
An assessment of the accomplishments of the International Dry Farming Congress held in Wichita, Kansas.

"Report of the Commission of Inquiry into Agricultural Implement Sales," July, 1915, pp. 311-2.
A comment on evidence given to the inquiry.

"Dry Farming Congress," November, 1916, pp. 58-9.
An account of the prizes taken by Saskatchewan farmers at the Dry Farming Exposition at El Paso, Texas.

"Ford Tractors," March, 1918, p. 145.
Information on the federal government's programme to sell Ford tractors to farmers at cost price.

"Resignation of Mr. Motherwell," January, 1919, pp. 90-1.
Assessment of Motherwell's career as Saskatchewan's Minister of Agriculture.

The Canadian Thresherman. Winnipeg, Manitoba, 1903-19.
This journal was published as a trade journal for custom threshermen on the prairies. Articles on the operation of steam and gasoline threshing machines and ploughs are numerous. Articles on the cultivation of various crops appeared periodically, occasionally written by such authorities as John Bracken. Below will be found a list of useful articles.

"Pointers for Handling Engines," July, 1904, pp. 4-5.
This article explains the operation of the water pump on steam-driven threshing machines and ploughs.

"A trip Among the Threshers of Portage Plains," October, 1904, pp. 4-5.
An account of steam threshing circa. 1904.

"The Care of a Threshing Outfit," October, 1904, pp. 36-7.
How to look after a threshing machine in the off-season.

"Grain Smuts and Their Prevention," April, 1906, pp. 32, 74-6.
How to treat wheat seed to prevent smut.

"Barley Culture," May, 1906, p. 50.
How to cultivate barley.

"Handling a Traction Engine," August, 1906, pp. 196-207,
Part I; September, 1906, pp. 36, 66, Part II.
How to drive a steam-powered tractor.

A. Burness Greig, "Traction Plowing by System," September,
1906, pp. 3-10.
How to become established as a custom ploughman: the business
angle.

Letters from Traction Plowmen, September, 1906, pp. 3-9.
How to become established as a custom ploughman: the business
angle.

Letters from Traction Plowmen, September, 1906, pp. 8, 10,
12, 14-6, 18-9, 22-5, 69-73.
These letters explain the types of equipment used by prairie
operators, their overhead costs, reliability of their
equipment, etc.

W.J. Black, "Manitoba Agriculture and the Agricultural
College," December, 1906, pp. 5-6, 8, 101.
A study of the effect the college is having on technological
advances in Manitoba farming.

John Bracken, "How Can we Produce the Best Seed Grain?",
January, 1907, pp. 8, 63-5.
Bracken discusses how to prevent weeds from becoming
lodged in wheat seed.

"Fresh Vegetables for the Farm," March, 1907, pp. 12-3, 16-7,
53.
Information on successful cultivation of vegetables on the
farm.

"Counting the Cost," May, 1907, p. 26.
An assessment of the overhead cost of custom threshers.

"Is Threshing a Business?", October, 1907, pp. 22-3.

"Farm Mechanics as Taught in the Manitoba Agricultural
College," December, 1907, pp. 22-3.
A short study of one of the areas where courses are taught.

"The Gasoline Traction," January, 1910, p. 26.
The advantages of the gasoline-powered tractor.

John Bracken, "The Culture of Alfalfa in Saskatchewan,"
June, 1911, pp. 7-11.
How to cultivate alfalfa.

"Place of the Disc Harrow in the New Agriculture," February, 1913, pp. 7-9.

The use of the disc harrow in dry farming.

C.A. Gilmore and A. Milne, "The Grain Drill," March, 1913, pp. 7-9.

Construction and usage of the grain drill.

"Seager Wheeler's Success with His Gas Power," April, 1914, pp. 7-10.

How Seager Wheeler operates his power machinery.

The Farmer's Advocate, Winnipeg, Manitoba, 1890-1903 (years covered for this project).

This journal was published simultaneously at Winnipeg and London, Ontario. All articles are short and are of a general nature. Except for the articles cited below (and these are of limited value) there is little that is useful for the study of prairie field crops.

"Harvesting Frozen Wheat," August, 1891, p. 292.

"The Preparation of the Soil for the Reception of Seed," August, 1891, pp. 128-9.

"Summerfallowing," July, 1892, pp. 266-7.

"Notes From the Agricultural College," September 20, 1894, p. 363.

What everyday life at the Ontario Agricultural College was like.

"The Farmer's Fruit and Vegetable Garden," July 5, 1895, p. 258.

"The Staff of the Ontario Agricultural College," July 5, 1895, p. 254.

"Scientific Farming," July 20, 1895, p. 274.

"Advantages of the Ontario Agricultural College," November 5, 1896, p. 427.

"Summerfallowing," June 21, 1897, p. 269.

"Drifting Soil and Other Problems in Connection with Summer-fallow," July 20, 1898, p. 316.

"Summerfallowing Indispensable," July 5, 1899, pp. 345-7.

Angus Mackay, "Wheat Cultivation in the Territories," April 5, 1899, p. 164.

"Some Lessons from a Dry Season," August 20, 1900, p. 456.

"Breaking Prairie Land," May 20, 1902, p. 367.

The Grain Growers' Guide, Winnipeg, Manitoba, (1908-22 examined).

The Guide is the most complete of the journals examined for the study of field agriculture. Articles are numerous for every aspect of field agriculture. Below is a complete listing of useful articles.

"College Bred Farmers," November, 1908, p. 35.
The advantages of an agricultural college education for farmers.

"Better Seed and More of It," November, 1908, pp. 36-8.
A brief study of seed fairs.

"Here Farmer's Sons are Trained for Life's Battle," October 6, 1909, pp. 3-4.
Curriculum of Manitoba Agricultural College.

S.A. Bedfore, "Requisites to Success," March 9, 1910, pp. 7, 9.

D.W. Warner, "Tillage Processes," March 16, 1910, pp. 7, 10-1.
Dry farming techniques of cultivating wheat.

"Winnipeg's Great Fair," August 3, 1910, pp. 7, 18, 32.
The Winnipeg Industrial Exhibition which features the exhibition of farm implements.

Walter C. Murray, "A Farmers' Training School," August 17, 1910, p. 4.
Establishment of an agricultural college at the University of Saskatchewan.

"Dry Farming Progress," September 14, 1910, p. 22.
A guide to events at the International Dry Farming Congress at Spokane, Washington.

G.A. Sproule, "Training Farmers," September 28, 1910, pp. 7, 15, 32.

A prospectus to students intending to enrol at Manitoba Agricultural College.

"Plowing vs. Discing," September 28, 1910, p. 23.
Information on when to plough and disc.

"Moving the Corn Line North," October 5, 1910, p. 17.
How to cultivate corn.

"Central Experimental Farm," January 18, 1911, pp. 7, 9.
An assessment of the work carried on at Ottawa under the direction of William Saunders.

"The Flax Industry of To-day," March 1, 1911, pp. 10, 38.
The uses of flax as a product.

"Dry Farming for the West," March 22, 1911, p. 25.
An assessment of dry farming in Utah.

"Tree Planting in the West," May 3, 1911, pp. 10-1.
A guide to suitable trees for the prairie dry belt.

"Control of Noxious Weeds," June 21, 1911, pp. 8, 24.
A study of how weeds spread.

"Timely Hints on Farming," July 5, 1911, p. 8.
Information on alfalfa growing in Saskatchewan.

J.E. Gustus, "Alfalfa - A Prosperous Yankee Settler,"
March 20, 1912, pp. 8, 28.
Alfalfa growing in Alberta.

"Gardening on the Farm," April 10, 1912, pp. 13-5, 22, 32.
Letters to the editor on gardening techniques.

"The Modern Farm Horse," June 26, 1912, pp. 7, 32.
An account of 1912 circa. tractors.

John T. Burns, "Dry Farming and the Congress," August 14,
1912, pp. 7, 14.
A history of dry farming in the U.S.A.

"The Wild Oat," August 27, 1913, p. 8.
Identifying this weed.

"Farming for Profit," November 12, 1913, p. 8.
Alfalfa growing in Western Canada.

Edward J. Fream, "Alberta's Schools of Agriculture,"
February 25, 1914, p. 12.
A tour through the School of Agriculture at Olds, Alberta.

Alex Stewart, "Alfalfa and How to Grow it," February 25,
1914, p. 14.

F.W. Broderick, "The Farm Garden," March 11, 1914, pp. 7,
24-6.

How to garden successfully.

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

J.E. Gustus, "Plain Facts about Alfalfa," May 20, 1914,
pp. 14-5.
General information on alfalfa.

J.E. Gustus, "Alfalfa for Western Canada," June 10, 1914,
pp. 10, 17-8.
How to grow alfalfa.

"Farm Weeds," July 1, 1914, pp. 16-22.
Description of farm weeds.

E.J. Trott, "The Modern Grain Separator," August 19, 1914,
pp. 7, 11.
Explanation how grain separators function. Instructions
for servicing.

"Are Light Tractors Wanted?" October 21, 1914, pp. 9, 22.
Advantages and problems with light tractors.

"The Profit Robber," December 2, 1914, pp. 11, 15.
How to control smut.

"Corn Growing on the Prairies," February 24, 1915, pp. 7,
23-4.
Experiences of several farmers who cultivated corn.

Seager Wheeler, "The Soil and the Seed," March 3, 1915,
pp. 11-2, 22; March 10, 1915, pp. 9, 23.
Information on how to sow crops.

"Does a Tractor Pay?" March 17, 1915, pp. 28-30.
An analysis of criteria to be used by farmers to determine whether they require tractors.

Seager Wheeler, "Dry Land Potatoes," April 28, 1915, p. 8.
How to apply dry farming techniques to potato cultivation.

"The Light Farm Tractor," June 9, 1915, p. 8.
Advantages of light tractors.

H. Higginbotham, "Teaching by Example," August 25, 1915,
p. 7.
Teaching methods of College of Agriculture at Olds, Alberta.

"The World's Best Wheat," October 13, 1915, p. 7.
How Seager Wheeler grew high quality wheat.

"Western Agricultural Schools," October 27, 1915, p. 7.
A brief article on agricultural schools on the prairies.

John Bracken, "The Year of Plenty," November 24, 1915, pp. 6,
26-7.
Experimental work conducted at the Saskatchewan Agricultural
College in 1915.

Seager Wheeler, "Seed Selection," December 1, 1915, pp. 19,
55-6.
How to select grain seed for sowing.

F.S. Jacobs, "Horse or Tractor Power?" March 15, 1916, pp. 7,
36-7.
Information aimed at allowing farmers to assess their needs
and whether these needs could be best filled by horse or
mechanical power.

J.M. Smith, "Plows and Plowing," March 15, 1916, pp. 8, 31.
The importance of ploughing properly.

Seager Wheeler, "Conserving Soil Fertility," April 12, 1916,
pp. 7, 33-6.
Information on how to preserve soil moisture.

"Canadian Wheat History," June 7, 1916, p. 36.

"Combination Threshing Outfits," June 28, 1916, pp. 7, 19-20.
Advantages of the combination thresher.

A.C. Campbell, "The Tractor Fuel Problem," March 14, 1917,
pp. 8, 44-5.

Gasoline vs. kerosene as a fuel.

F.W. Broderick, "Growing Farm Vegetables," May 9, 1917,
pp. 19-20.

Information on proper cultivation techniques.

Seager Wheeler, "When to Cut the Wheat Crop," May 30, 1917,
pp. 7, 15-7.

Seager Wheeler, "Growing Grain for Seed," February 13, 1918,
pp. 7, 26-7.

Instruction on correct techniques.

John Bracken, "The Crops of Permanence," April 24, 1918,
pp. 7, 28-32.

Growing forage crops on the prairies.

J.H. Haslam, "Growing Sweet Clover," January 8, 1919, p. 23.

W.C. McKillican, "The Why and How of Crop Rotation,"
January 22, 1919, p. 9.

Suggested rotation patterns.

Wayne Dinsmore, "Percheron Power in the Northwest," July 2,
1919, pp. 15, 62.

Instructions to efficiently use the draught horse.

W.F. Handschin, "The Horse and Farm Power," September 3,
1919, pp. 20-3.

How to use horsepower efficiently.

P.M. Abel, "Farm Power," January 4, 1922, pp. 9-10, 23.
How to use both horse and mechanical power in conjunction
with one another effectively.

PRIVATE LETTERS

W.R. Motherwell Papers

The Motherwell Papers are particularly rich in material relating to prairie field crop cultivation. Letters on such topics as the principles of dry farming, the cultivation of brome grass, various techniques of ploughing, subsoiling, as information on the International Dry Farming Congress, agricultural societies, and university extension programmes

are included. Included below is a listing of important material in the papers.

File 8

#549-86, Letters from a commercial school called the Correspondence School of Scientific Farming, 1911, 1912.

#596-7, Motherwell to P. Tullis, Swift Current elucidating his views on farming, September 5, 1913.

#604-7, Motherwell to Hugh McKellar, Moose Jaw elucidating his views on agriculture.

File 9

#617-8, Principal complaints of farmers against agricultural implement dealers.

#619, Farm implement warranties.

#623-4, Motherwell to T.M. McEwen, Kindersley, Saskatchewan relating the practices of farm implement companies, December 17, 1913.

#625-6, International Harvester Bill of Sale.

#659-61, Manuscript, "The Traction Engine in Dry Farming."

#692-4, Motherwell to Collection Department, Hart-Parr St., Charles City, Iowa accusing company of unjust seizure practices, October 22, 1914.

File 10

#737-9, Motherwell to Benjamin Ralph, Shellwood, Saskatchewan re provisions of Agricultural Societies Act, April 22, 1907.

#883-5, Motherwell to Robert Garvin Melville outlining criteria the government uses for granting incorporation to agricultural societies, April 24, 1911.

File 12

#987, W.R. Motherwell, "Ten Dry Farming Commandments."

#988-92, W.R. Motherwell, "The advance in Agricultural Work in Saskatchewan."

#999-1005, Letters on Dry Farming, J. Dixon to Motherwell, February 18, 1907; Motherwell to J. Dixon, March 20, 1907.

#1012-4, Letters on Ploughing, John Parker to Motherwell, August 12, 1910; Motherwell to Parker, August 25, 1910.

#1015-21, Dry Farming Letters, O.O. Winter to Motherwell, August 17, 1910; Motherwell to Winter, August 24, 1910; John Parker to Motherwell, September 5, 1910; Motherwell to Parker, September 9, 1910.

#1027-8, Subsoiling, Motherwell to T.H.T. Tweltridge, Springfield, Manitoba, November 11, 1911.

File 13

#1132-5, Competition for Best Farm in District, J. McDonnell to Motherwell, March 29, 1907; Motherwell to McDonnell, April 1, 1907.

#1162-5, Alfalfa Competition, W.H. Moore to Motherwell, February 22, 1910; Motherwell to Moore, March 18, 1910.

File 35

#3754, Motherwell elected vice-president of Dry Farming Congress, Motherwell to J.T. Burns, November 10, 1909.

#3986, Dry Farming Congress - List of Officers.

#4047-8, J.T. Burns to J. Robertson, Ontario Agricultural College, Guelph, August 5, 1910.
Letter sheds light on Canadian involvement in Dry Farming Congress.

#4061, J.T. Burns to Motherwell, August 30, 1910.
Information on Canadian participation in Dry Farming Congress.

#4076-82, Programme of Dry Farming Congress at Spokane, 1910.

#4231, Letter and list of Saskatchewan representatives on Dry Farming Congress, Motherwell to Burns, January 20, 1912.

#4238-9, Correspondence concerning speakers for International Dry Farming Congress. Letters Motherwell to Burns, Burns to Motherwell.

#4290, J.L. Manwaring to Motherwell, April 16, 1912.
Letter acknowledging funds from Saskatchewan Government to Dry Farming Congress.

#4321, Motherwell's Secretary to J.L. Burns, September 11, 1912.

List of faculty members of Saskatchewan College of Agriculture.

#4333, Speakers at International Dry Farming Congress: Rutherford, Bracken, Greig.
Motherwell's Secretary to A.M. McOmie, Tucson, Arizona, September 24, 1912.

#4343, Motherwell elected President of Dry Farming Congress, W.C. Palmer to Motherwell, November 6, 1912.

#4424, Delegates to Dry Farming Congress, Burns to Motherwell, November 6, 1912.

File 45

#5990, Establishment of Farmers' Institute, Motherwell to A. Stacey, Burr, Saskatchewan, January 7, 1909.

#5997-8, Attempts to provide lectures for farmers in foreign languages, Motherwell to E. Werner, January 27, 1911; Motherwell to F.H. Auld, January 27, 1911.

File 50

#6269, Varieties of wheat to be sown, Motherwell to Richard Waugh, September 13, 1907.

#6289-92, Durum Wheat, W.H. McFarlane to Motherwell, January 15, 1910; Motherwell to McFarlane, January 19, 1910.

#6301-5, Harvesting and Sowing Flax, Motherwell to C.S. Noble, Alberta, January 10, 1912; Noble to Motherwell, August 2, 1912; F.H. Auld to Noble, August 2, 1912.

#6328-32, Western Rye, Motherwell to W.R. Porter, Fargo, North Dakota, July 18, 1913; Motherwell to A.G. Holmes, Alsask, Saskatchewan.

#6336-8, Experimentation with Wheat, A. Rister, Winnifield, Alberta to Motherwell, September 21, 1915; Motherwell to A. Rister, September 23, 1915.

File 81

#11944-54, W.R. Motherwell, "Weeds."

#11998-9, W.R. Motherwell, "The Cause of Low Yields."

#12034-9, W.R. Motherwell, "The Use and Abuse of the Common Drag Harrow."

File 82

#12066-7, Motherwell's cultivation of brome-grass, 1906.

#12076-7, Problems with growing brome-grass.

#12079-80, Harvesting brome-grass, Motherwell to George Robinson, Girwin, Saskatchewan, July 16, 1908.

#12085, Impossibility of cleaning brome-grass, Motherwell to Robinson, October 30, 1908.

#12094, Problems with brome-grass, Steele-Briggs Seed Company to Motherwell, February 11, 1909.

#12112-3, Peculiarities of brome-grass, Motherwell to Dr. Webber, Cornell University, January 12, 1911.

#12115-6, Points re brome-grass, W.L. Oswald, St. Paul to Motherwell, May 6, 1912; Motherwell to Oswald, May 18, 1912.

File 105

#15992-3, "The Feeding Value of Rusted Straw."

File 125

#17705-7, W.R. Motherwell, "Wheat Rust."

File 151

#22215-20, "More Grasses Imperatively Needed if Soil Drifting on the Open Prairie is to be Controlled and Averted."

David Spector,
Prairie Region,
Parks Canada, Winnipeg