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Manitoba's Red River Settlement: Manuscript Sources for Economic and Demographic History

by DOUGLAS SPRAGUE AND RONALD FRYE

It is possible that the history of the Red River Settlement is the most thoroughly documented of all proprietary colonies in English colonial experience. Surviving Hudson's Bay Company papers document individual employments and expenditures, land allotments, land use and the growth of population. Many church registers have also survived as a record of marriages, baptisms and burials. But this is not all. A vast amount of additional information on the same families was generated by the Canadian government after the transfer of Rupert's Land from the Hudson's Bay Company (HBC) to Canada. The government conducted a full-scale census of Manitoba in 1870, and later, the same population was enumerated a second time for genealogical purposes. In all, there are six major groups of manuscript materials which record most of the significant events covering nearly every household in the twenty-four parishes of the settlement. The purpose of this short paper is to describe each group of documents and to outline methods that the authors are currently using to file each item of information by individual household, and to link households across generations.

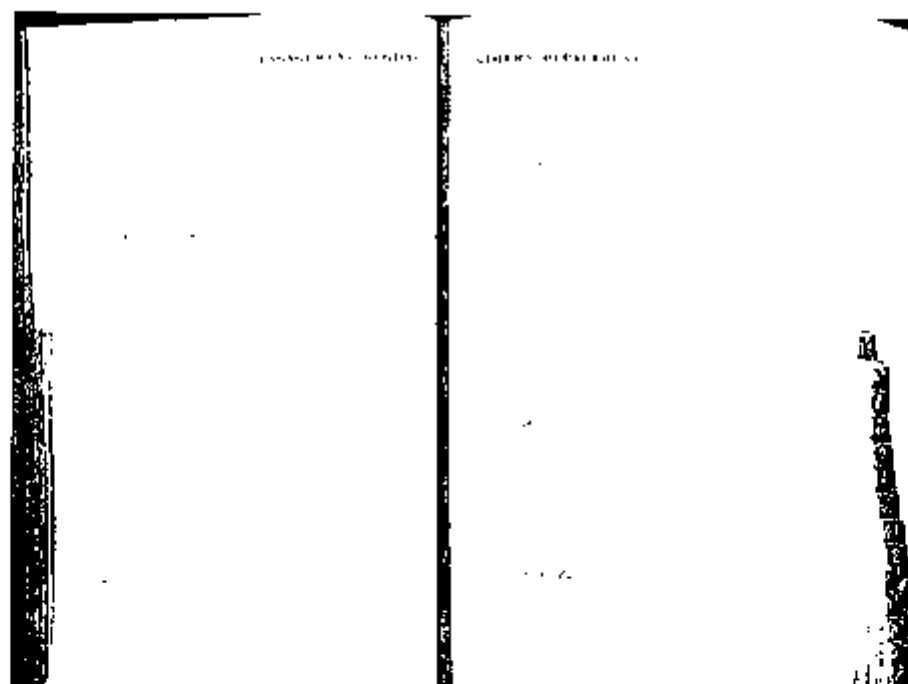
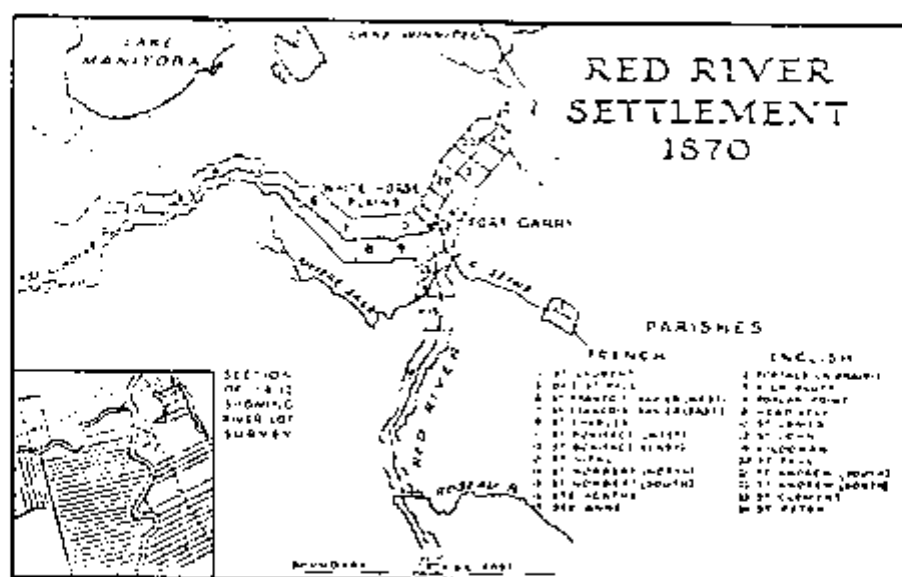
A. SOURCES

HUDSON'S BAY COMPANY ENGAGEMENT REGISTERS

Generally speaking, there were two classes of persons employed by the Hudson's Bay Company. One group consisted of low ranking employees who were hired to perform a specific task to be completed in one season (usually the summer of one fiscal year). Of this group, the "trampier", very little is known. There are scattered references in correspondence and occasional lists in the account books of particular posts. But no master list or register of such casually employed labourers was maintained. Fortunately, detailed employment records were kept on the second category of Hudson's Bay Company employees, the Officers and Servants working for a period of at least one complete "Outfit" year, hired under the bond of a contract between themselves and the company. The annual Abstract of Servants recorded the monetary obligations of the firm to such employees. Personal data was entered in another ledger, the Engagement Register, Northern Department.

1. Hudson's Bay Company Archives (1690-), Archives of Manitoba (hereafter cited as HBC, PAM) Abstract of Servants, Northern Department, B 239, 2.

2. HBC, PAM, Engagement Register, Northern Department, B 239, 1-3.



Servants' Encumbrance Register, Northern Department, 1846-77, detail (HRC, PAM B.239 or 2.108-175J-176)

There are three volumes of Engagement Registers, each provides an alphabetical list of employees in the chronological order of their engage. The first volume covers the period from 1821 to the 1840s; volume two runs to the 1870s; volume three contains some entries from as recently as the 1890s. A complete entry gives the employee's name, his age at the time of employment, parish of birth, occupation or rank, place and date of employment, term of service, date and place of discharge and annual wages for the period under contract. The relevance of the Engagement Registers to the history of the Red River Colony is that they provide a fairly complete record of the origins of settlers who migrated to Rupert's Land by way of employment with the Hudson's Bay Company. Thus, entry number 1045 shows that Samuel Leask, from Sandwich, enrolled as a labourer in the Orkney Islands in 1853. He served in this capacity for five years earning £17 p.a. Two contracts later, he was serving as a carpenter with almost twice his starting salary. Then Leask retired from service in 1860. As the last column suggests, he settled at Red River.

Another use of the Engagement Register is to document the relative importance of the colony as a source of labour for the company. Entry 1049, for example, shows that Baptiste Lepine, born at Red River in 1824, served as a tripman in a long succession of contracts at relatively high wages; he earned more for his services as a guide than Leask made working as a carpenter. In this sense, the labour recruited locally was valued as highly as that imported from abroad.

SETTLERS' ACCOUNTS

Naturally, it would be useful to know how the Lepines and Leasks disposed of their earnings. Unfortunately, this is impossible to determine in all cases; but, approximately one third¹ of the householders in the Red River Settlement spent a large portion of their incomes through the company. The detailed records of the transactions of these settlers have survived.²

Consider, for example, the case of Joseph Bird. Bird's account for the period from 1 June 1845 to 31 May 1846 (the 'Outfit' or fiscal year) is reproduced here-with. Notice, first, that the entries are nothing more than quantities of credit for or against the person in whose name the account is held. Joseph Bird, in this case. Negative credits appear in the Debit (D) column. Positive credits are in the settler's favour. Since they tend to clear his account, they appear in the Credit (C) column. In this sense, Debit entries document withdrawals from the account and Credits record deposits. Also notice that withdrawals are pre-iced with the word 'To' and the keyword 'By' goes with all deposits. Some entries which are dated 31 May or 1 June are special cases. A 'To Cash' entry in the Debit column dated 1 June can signify a deficit carried over from the preceding fiscal year. Conversely, a 'By Cash' entry for the same date in the Credit column can signify a balance of credit, a kind of savings carried over to the next year. By the same logic, a 'To Cash' entry in the Debit column on 31 May predicts 'By Cash' in the same amount in the Credit column on 1 June, and, 'By Cash' 31 May becomes 'To Cash' on 1 June in the subsequent year.

¹ Using 'wages' values from the Engagement Registers as an indicator of personal incomes, it is possible to compute a median salary by year. On this basis, it seems that the third of the settlers' (with accounts ranked among the upper strata of the population) spent the majority of their Red River Settlement Accounts significantly higher than the salaries of average company employees.

² HBC, PAM, Settlers' Accounts, B 255, d.

The image shows a page from a ledger with multiple columns. The columns are mostly illegible due to the low contrast and blurriness of the scan. There are approximately 10-12 columns visible, with the first column likely representing dates and the subsequent columns representing monetary values. The entries are organized in rows, typical of a ledger format.

Red River Settlement Account Book, Outfit 1845-46. Settlers' Accounts, Joseph Bird (HBC, PAM B 235 d 95, fo. 181)

The Bird account for 1845-46, however, shows a settler who carried neither a deficit nor a surplus from one year to the next. Bird made five cash withdrawals totalling £30 between August and November. On 30 December, his household was charged £4.5 (approximately) for sundries. At the same time, Bird was credited with a little more than £30 for his having provided freighting service between the Red River Colony and York Factory. Then came another series of withdrawals - including £7 credit paid by Joseph Sutherland through the HBC. The Bird family purchased additional sundries in April; and Joseph made one last cash withdrawal for £4.5. Then, in anticipation of the end of the Outfit, Bird balanced his account by depositing a kind of money order: Bills Receivable No. 82 (the Bills Receivable ledger will indicate the name of the person against whose account the cheque is drawn).

Occasionally, there are many more transactions involving much larger sums. Also, on occasion, the account covers just a few shillings. For instance, in the Joseph Bird account, there might have been a 'To Lepine amount transferred' entry. Turning to the 'U.S.', one finds an Ambrose Lepine and this credit: 'By

Joseph Bird, for cutting firewood'. On the withdrawal side, Lepine's items of expenditure are listed. Often, the smaller the amount, the more detailed the accounting of the purchases. Thus, the Settler's Accounts provide a useful indication of the way account holders earned and spent their incomes.

HUDSON'S BAY COMPANY CENSUS RETURNS

No matter how detailed the Accounts or the Engagement Registers, the information they provide covers a relatively small number of settlers: forebears and the wealthier representatives of later generations. Also, the information from such sources depicts persons as independent individuals. There are references to spouses and sometimes to children, but passively and the people are usually anonymous. To a certain extent, missing family information is obtainable from Red River Census Returns which have survived.

Beginning in 1824, the Hudson's Bay Company counted the households of the colony along with an inventory of the settlers' major possessions and developments. It is possible that the census was conducted on an annual basis, every April, from 1824 through 1856 (sending one copy to London and retaining another copy in the colony). Surprisingly few of these valuable documents have survived; but, for some exceptional years, both copies are available. For others, there are none. The years which are covered by at least one copy of one complete census are 1824, '27, '28, '29, '30, '31, '32, '33, '35, '38, '40, '43, '46, '47, and 1849.⁵

5. The 1824 census is not catalogued as a "Census Return". This document is a roll of papers called "Red River Settlement - Index to Plan by William Kemp" (HBC, PAM, F. 6-11). Other years are available in the Hudson's Bay Company Archives, F. 5-1-11, Public Archives of Manitoba, MG-2, B3, or from the Public Archives of Canada with the Census of the Province which was done in 1870, microfilm C-2170.

Census, Red River Settlement, 1843 (HBC, PAM, F. 5-11, nos. 130-141)

Reference to case number 335 shows that Jean Baptiste Lepine, a fifty-one year old *arrivé*, lived in a family of nine people: four sons, three daughters, his wife and himself. All of his daughters were under the age of fifteen. Two of his sons were over sixteen, and thus, probably an advantage in looking after the menagerie of livestock and the twenty-two acres under cultivation.

The Census Return for Lepine, therefore, provides a more complete view of the man as the head of a family than might be seen in the Engagement Register or Settlers' Accounts alone. Regrettably, however, the series of Census Returns runs out in 1849. Also, the family information is aggregative rather than at an individual level; spouses and children were counted but not named. The only named person is the male head of household. He too is the only person whose age is reported. Spouses are anonymous, even as single parents. Furthermore, natural children are not distinguished from adopted dependents. This is a serious flaw because other sources suggest that in the event of the death of a female head of household, children below the age of puberty customarily left the home of their natural father to be raised by maternal aunts or grandparents.⁶ The Census Returns are not particularly helpful in tracing the pattern of these adoptions.

The Census Returns are also quite useless for determining geographical location since the family aggregates are listed alphabetically by religious affiliation rather than by parish in the order of their occupancy of the river lots. The standard format for reporting the enumeration called for one long list labeled 'Protestant Settlement', another lengthy list called 'Catholic Settlement', and two much smaller appendices labeled 'Grantown' and 'Indian Mission'. Since these categories were not co-extensive with 1870 parish boundaries, there is no way of knowing whether some areas were systematically ignored.

PARISH REGISTERS

The entries recording marriages, baptisms and burials in Parish Registers help to identify anonymous spouses and children. In all, there are thirteen such registers, dating from various beginnings from the 1830s to the 1860s.⁷ Only three (St. John's, St. Andrew's and that of St. Francis Xavier) date from the periods of early settlement.

Another problem is uneven reporting. In nearly all of the Protestant parishes, clergymen tended to record family events as milestones in the lives of individuals. Thus, a burial entry is usually no more than the decedent's name, age at death and date of interment. Baptisms sometimes were recorded with parents' names, marriage records usually name just the bride and groom. Such sparse reporting

6. A fragment of an 1886 census has survived but both complete copies have disappeared. The fragment is in PAM, MG 2, B3.

7. This is evident from the date adoptions recorded in the Parish Registers and the pattern of relationships in the 1870 census.

8. The Hudson's Bay Company also maintained a Register of Marriages and Burials from 1842 to 1851 (HR, PAM, 1, 4, 6, 2). These entries are almost always duplicated in one of the Church records (PAM, MG 2). The Church Parish Registers in the Public Archives of Manitoba include St. Mary's (Portage La Prairie, 1855-1887), St. Andrew's, 1835-1910, St. Peter's (Dunlop, 1839-1917), St. Paul's, 1836-1941, St. John's, 1873-1961, St. James, 1853-1908, St. Clement's, 1862-1928, Holy Trinity, 1857-1928, Kildonan, 1881-1932, Sisters of Charity (St. Joseph's), 1741-1941, St. Francis Xavier, 1834-1900, St. Boniface (fragments) (comp. 1860-1869, 1874), and St. Norbert, 1857-1944.

poses severe linkage problems. But in the Catholic parishes, a family event was recorded in a family context. For the parish of St. Francis Xavier, for instance, the register reports that on 26 November 1839, Jean Baptiste Malaterre (son of Jean Baptiste Malaterre and Angélique Adam) married Therese Courtois (daughter of Jean Baptiste Courtois and Angélique Paille). Later, with the baptism of each child, the priest would record the son's or daughter's name and also the full name of each parent. When Therese died in "early January 1846" the priest recorded that the funeral on 15 February was for "Therese Courtois wife of Jean Baptiste Malaterre" (notice the small change in the spelling of her maiden name). Four years later, Jean Baptiste remarried, and, in this marriage entry, identified the bride in the usual manner, but since the groom had a family status of husband more recently than son, Jean Baptiste was identified at the time of his second marriage as the "widower of Therese Courtois." In the next year, four months after the birth of the first child by the second marriage, Malaterre himself appeared as a decedent. But since he was one of the fallen in the terrible war with the Sioux in 1851, his burial received a martyr's embellishment. For 13 July, the priest recorded that Jean Baptiste Malaterre had been "massacred by Sioux near the Cheyenne River . . . hands and feet severed, scalp lifted, skull smashed . . . 3 bullet holes, 67 arrows and 3 knife wounds."

Parish registers such as that of St. Francis Xavier (see photograph) pose no linkage problems. Family reconstitution is simply a task of recording all events and sorting by household. But St. Francis Xavier, one of the largest parishes, was still less than one fourth of the population of the Red River Settlement overall. Also, after surmounting some of the linkage difficulties posed by the records of the Protestant parishes, identification of spouses and children from the registers still leaves the question of geographical location unanswered.

GEOGRAPHICAL LOCATIONS

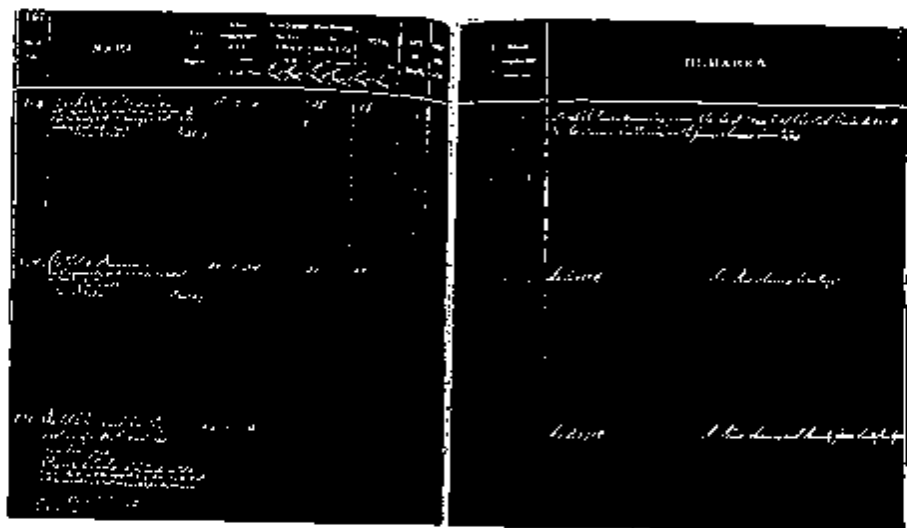
In 1835, the Hudson's Bay Company employed George Taylor to resurvey old lots and extend the limits of vacant surveyed land north and south along the Red River, and westward along the Assiniboine. The limits of these newly numbered lots fell between parishes 6 and 7 to the west, 14 to 15 to the south, and 23 and 24 at the northern limit (see map). At the same time that the survey proceeded, Taylor prepared memoranda which reflected existing occupancy. The company then entered these fieldnotes into account books indicating whether the occupant had received a prior grant from Lord Selkirk, and how much land had been granted gratuitously or for a fee payable to the Hudson's Bay Company. There are approximately 500 entries in the Memoranda Respecting Grants of Land.⁹ Since the two volumes are arranged alphabetically by grantee, it is relatively simple to correlate the names of persons listed in the Census Return for 1835. There are few nominal duplicates and the orthography of names is the same in both records.

Tracing the shifting pattern of land ownership from 1835 to 1870 is a much more difficult problem. Sometime between 1835 and 1840, the company copied the alphabetical memoranda into a register organized by lot number. The sample on the next page shows some typical entries. Like the memoranda, Land Register

⁹ HBC, PAM, Memoranda Respecting Grants of Land, No. 1 and 2, 1:6-7.

'B' indicated whether the grant was from Lord Selkirk or the company and whether it was gratuitous or payable. Space was also provided to record successive owners. In this respect, Land Register 'B' resembled an Abstract Book for a Land Titles Office more than a copy of the memoranda books by lot number.

Using Land Register 'B' as an Abstract Book poses two problems, however. The first is a matter of validity. It was company policy for clerks to maintain duplicate copies of all records. The copy available to the general public today in the Hudson's Bay Company Archives appears to have been the duplicate record, periodically updated. Unfortunately, the entries in this copy are suspiciously sparse, suggesting that maintenance of the duplicate record did not receive particularly high priority.¹⁰ Another copy (one which was delivered to the Winnipeg Land Titles Office in 1871) has more complete entries. During the resistance of 1869-70, however, this copy of the Land Register disappeared and



Land Register 'B'. (Public Archives of Canada)

did not reappear until the spring of 1871. It was suggested that fraudulent entries had been made in the interim. Governor Archibald was convinced that these allegations were false, ordered the wayward version copied, and sent this new duplicate to Ottawa.¹¹ This was the copy which the bureaucracy used in its administration of Manitoba parish land in the 1870s, and the version which is reproduced here.¹²

The other problem is linking the several different kinds of entries in the Land Register to the demographic material on households. One kind of entry is a grant from the company after 1835. A second type is a transfer by inheritance to a family relation, and, the last is a gift or sale of the land to a friend or stranger. Assuming ideal information on Red River family history, the second type of

¹⁰ HBC, PAM, Land Register 'B', E.6/2.

¹¹ The perambulations of the Land Register were described in detail in a long dispatch from Governor Archibald to Joseph Howe, 9 April 1871 (Public Archives of Canada, RG 15, Vol. 229).

¹² Available from the Public Archives of Canada on aperture cards, book number 185.

entries is relatively easy to match with households: an 1835 occupant dies and leaves his lot to identifiable heirs. But the other types of transactions are more difficult to link to households because of the increasing number of nominal duplicates.

Thus, the intricate network of ownership documented by Land Register 'B' is probably impossible to unravel completely. For the year 1870, however, one may reconstruct the pattern of landholding with fair certainty and considerable simplicity. The reason is that the government of Canada enumerated the population of Manitoba for two purposes: first, to identify the residents of the province at the time of the transfer; and, secondly, to list these persons by parish in the order of their appearance on riverlots thus establishing a list of householders for the first elections in the province.¹³

The sample portion of the 1870 census shows the format of the reporting which was used. Each entry enrolls an individual as a person with a unique case number within a particular parish. There is other vital information (such as age, and father's name, and marital status) and these data enable one to draw boundaries between nuclear families within the series of cases for a whole parish (observe the relations between case numbers 993 to 996 or 999 to 1002). Having identified the boundaries between one set of relatives and another such family, household

13 The reasons for the 1870 census are found in two dispatches from Governor Archibald to Joseph Howe, one dated 27 December 1870 and the other 9 April 1871 (Public Archives of Canada, RG 15, Vol. 229). The Census itself is available with the Red River Census materials, on microfilm from the Public Archives of Canada, reel number C-2170.

| Case No. | Name | Parish | Age | Sex | Marital Status | Other Info |
|----------|----------------|------------|-----|-----|----------------|------------|
| 991 | John Leitch | St. Andrew | 30 | M | Married | |
| 992 | Mary | | 27 | F | Married | |
| 993 | John Leitch | | 25 | M | Single | |
| 994 | Margaret | | 24 | F | Single | |
| 995 | Michael | | 22 | M | Single | |
| 996 | Thomas | | 20 | M | Single | |
| 997 | William | | 17 | M | Single | |
| 998 | John | | 15 | M | Single | |
| 999 | Michael Leitch | St. Andrew | 25 | M | Married | |
| 1000 | Margaret | | 22 | F | Married | |
| 1001 | Elizabeth | | 20 | F | Married | |
| 1002 | Thomas | | 18 | M | Married | |
| 1003 | James Leitch | | 20 | M | Single | |
| 1004 | William | | 18 | M | Single | |
| 1005 | Mary | | 16 | F | Single | |
| 1006 | John | | 14 | M | Single | |
| 1007 | James Leitch | | 12 | M | Single | |
| 1008 | William | | 10 | M | Single | |
| 1009 | John | | 8 | M | Single | |
| 1010 | Mary | | 6 | F | Single | |
| 1011 | Thomas | | 4 | M | Single | |
| 1012 | Elizabeth | | 2 | F | Single | |
| 1013 | John | | 1 | M | Single | |
| 1014 | William | | 1 | M | Single | |
| 1015 | Thomas | | 1 | M | Single | |
| 1016 | Mary | | 1 | F | Single | |

numbers can be assigned to this group while recording the other information on individual persons. Then, once the census is in machine-readable form, the population of a parish can be listed by household number and name, and this sequence can be compared with other evidence specifying land ownership.

The most useful indicator for land ownership is the field information of surveyors who recorded the names of occupants as they worked through all twenty-four parishes confirming boundaries of Hudson's Bay Company lots or running completely new lines in parishes which had never been surveyed before.¹⁴ In every case of an occupied lot, they recorded the name of the reputed owner at the time of the survey (1871-73). Assigning lot numbers to households in the 1870 census is thus no more complicated than correlating the surveyors' lists of occupants by lot number with the order of households in the census roll. At the minimum, good profiles of landownership are thus possible for 1835 and 1870. Land Register 'B' provides some information for the years in between—assuming ideal information on households. But from the descriptions of the company Census Returns and church Parish Registers already given, it should be evident that the demographic material is far from perfect.

14. The surveyors' field notes are uncatalogued and in extremely poor condition but available to users of the Public Archives of Manitoba on application.

Handwritten text from a Parish Register extract:

1835
 1836
 1837
 1838
 1839
 1840
 1841
 1842
 1843
 1844
 1845
 1846
 1847
 1848
 1849
 1850
 1851
 1852
 1853
 1854
 1855
 1856
 1857
 1858
 1859
 1860
 1861
 1862
 1863
 1864
 1865
 1866
 1867
 1868
 1869
 1870

GENEALOGICAL AFFIDAVITS, 1875

One final major source of information tends to correct many of the imperfections of the Parish Registers and pre-1870 Census Returns. This last record group is the affidavits collected in 1875 by the Department of the Interior to determine eligibility for bonus lands under the Manitoba Act and its amendments. Officials were commissioned to sort the entire population of Manitoba into four categories: partly Indian heads of families in 1870; partly Indian children in 1870; Canadian or Selkirk settlers entering the vicinity of the "Red River Country" between 1815 and 1835; and last, all others. Concise family histories were collected from persons in the first three groups, roughly nine thousand affidavits in all. Nearly all the affidavits have survived and are available to users of the Public Archives of Canada.¹⁵ Recently, the information on the affidavits was abstracted in typescript for use as a finding aid to the originals.

Reference to a sample of the typescript version of the affidavits (Fig. 1) illustrates the importance of these documents. Unlike any of the other sources discussed previously (including even the Parish Register of St. Francois Xavier) the affidavits tend to provide complete information on parentage, age, spouse and ethnicity—all in one place. This means that once each case is coded for machine processing, each head of family in 1875 can be counted twice: the first time as a sibling, secondly as a mate. The method is to code father's name, father's ethnicity, mother's name, mother's ethnicity in adjoining fields and define this string of alphabetical and numeric characters as one variable 'MATES'. Subject's name, spouse's name, and subject's date of birth are coded along with other variables; and, the computer is programmed to sort MATES by KIDS. The output is approximately four thousand groupings illustrated by those listed in Figure 2. The first example lists six Manitoba householders as siblings, the children of William Smith and Mary Swain. Notice that the computer prints them in three sets because the first four children identify their mother as Mary Swain 717 equals partly Indian; another reported that her mother was simply Mary 7; and the last listed her parents as William Smith and Mary Swain, ethnicity unknown. The second illustration shows one of the siblings as a parent. The John Smith bracketed in the first list (a son born in 1820) appears on the second page as the mate of Elizabeth Moore. In this way, two brief lists trace three generations of surviving Smiths along the paternal line of descent, and the same method is equally useful for tracing maternal lines.

B. LINKAGE METHODS

The six record groups described in the preceding pages all pertain to one population, divided into approximately five thousand different households. The challenge of record linkage is developing sorting methods to link each element of information with the family to which it pertains. The task is analogous to fitting together pieces in a vast jigsaw puzzle because all of the record groups are nominal rather than numerical; cases are identified by names rather than by unique numbers. Since different people have the same name and since all names are subject to variation in spelling the sorting operations must take this into account.

¹⁵ PAC, RG 15, Volume 1319-1324.

| Claimant | Scrip Record | Parish | Affidavit | Form |
|-----------------------|--|--------------|-----------------|------|
| Riel, Francis | Born Aug. 15, 1833 Father: Baptiste Riel (French Can.) Mother: Marguerite Boucher (Halfbreed) Claim No. 2559 Scrip No. 12137 Date of Issue: Apr. 17, 1877 Amount: \$160 | St. Boniface | 858 | C |
| Riel, Julie | Born July 23, 1822 Father: Jean Baptiste Lagendriere (French Can.) Original white settler from Muskonge, Quebec, entered Red River Country between 1813 & 1835 Mother: Marianne Gaboury (French Can.) Husband: Louis Riel (Deceased) | St. Vitals | 360 | D 2 |
| Ritchot, Alexandre | Edouard Ritchot Fleamore Magdeleine Ritchot AFFIDAVIT MISSING! | St. Vitals | 5404 to 5406 | |
| Ritchot, Andre | Born Oct. 1, 1828 Father: Joseph Ritchot (French Can.) Mother: Josephite Mallon (Halfbreed) Claim No. 2560 Scrip No. 12138 Date of Issue: Apr. 17, 1877 Amount: \$160 | St. Boniface | 857 | C |
| Ritchot, | Father: Jean Baptiste Ritchot (Half- breed) Mother: Louise Henault (Halfbreed) Born Feb. 10, 1870 Wishes to partake in allot- ment & distribution of land set apart for Halfbreed children | St. Vitals | 5403 | B |
| Ritchot, Baptiste | Born Jan. 1, 1823 Father: Joseph Ritchot (French Can.) Mother: Josephite Guilmet (Halfbreed) Claim No. 2492 Scrip No. 11345 Date of Issue: Oct. 2, 1876 Amount: \$160 | St. Vitals | 2722 | C |

Sometimes spelling becomes more phonetic. Thus, Gardupius became Garteyp and Orkenys became Harkness. At other times, a prefix to a name is dropped. Delaronde, for example, was shortened to Laronde. Still other dramatic changes occurred without any predictability. Laroeque is not part of Rockbrune, nor are the two names phonetically similar; but, by the set of other characteristics such as age, spouse's name and parentage, it is discovered that a man is identified by both names—sometimes simultaneously, Laroeque dit Rockbrune. In this way, a set of a number of variables together establish a person's identity regardless of the variation in the spelling of his given name or family name and regardless of the number of other people who might be named "John Swain". Since the elements in the set of other identifiers (age, parents' names, etc.) exhibit a unique pattern (but since each element exhibits small variations in its own turn) there is only a theoretical possibility that a computer programme could be devised to find what is visible to a human eye but invisible to a machine because string elements are not all precisely the same. To avoid losing time in potentially fruitless programme development the authors of this paper decided to use a combination of machine and manual methods in their attempt to sort the evidence by household.

John Smith (1820) as a Sibling

| | | MATES SMITH | | WILLIA SWAIN | MARY? | | |
|-----|-------|-------------|-----|--------------|-------|--------|------|
| OBS | KID | | SEX | SPOUSE | BIRTH | PARISH | ID |
| 1 | SMITH | JOHN | 1 | | 1820 | 18 | 844 |
| 2 | SMITH | MARY | 2 | | 1823 | 13 | 1585 |
| 3 | SMITH | CHARLO | 2 | N MORRISON | 1842 | 13 | 1604 |
| 4 | SMITH | EDWARD | 1 | A SABISTON | 1843 | 19 | 1056 |
| | | MATES SMITH | | WILLIA | MARY? | | |
| OBS | KID | | SEX | SPOUSE | BIRTH | PARISH | ID |
| 1 | SMITH | SARAH | 2 | R MASSEY | 1827 | 18 | 181 |
| | | MATES SMITH | | WILLIA SWAIN | MARY | | |
| OBS | KID | | SEX | SPOUSE | BIRTH | PARISH | ID |
| 1 | SMITH | ELIZAB | 2 | S BALLENDINE | 1829 | 18 | 2523 |

John Smith (1820) as a Mate

| | | MATES SMITH | | JOHN ? | MOORE ELIZAB? | | |
|-----|-------|-------------|-----|----------|---------------|--------|------|
| OBS | KID | | SEX | SPOUSE | BIRTH | PARISH | ID |
| 1 | SMITH | JOHN | 1 | M IRWIN | 1848 | 18 | 333 |
| | | MATES SMITH | | JOHN ? | ELIZAB? | | |
| OBS | KID | | SEX | SPOUSE | BIRTH | PARISH | ID |
| 1 | SMITH | ELIZA | 2 | W THOMAS | | 20 | 2044 |

Such a decision would not be appropriate for most populations, but the Red River case lends itself to this treatment rather tolerably. First, the ratio of family names to total population is favourable. This means that the problem of nomenclal duplicates is manageable (for all but a few exceptional families). The exceptionally large family sets were named Bird, Cook, Flett, McKay, Sinclair, Smith, Spence, Sutherland and Thomas. Each of these clans contained forty to seventy individual households likely to be headed by a male named John or James. Consequently, the potential unreliability of links within these groups is large. But altogether, these nine clans included less than nine percent of the total population, the bulk of which fell under about 700 other family names.

A second reality which permitted a certain amount of manual sorting was the manageable number of households, only about 5,000 (in round numbers). The output of the sorting and coding operations is a subtle structure of machine readable records which the computer can link by numbers to each case and household.¹⁶ Thus, Athanase Lepine, case number 5899, is the head of household number 2925. If this Athanase Lepine does not appear in the Engagement Register, there is no record 5889 in the Engagement Register subtitle. If there is a 5889, it is possible to link observations from this subtitle to all others. In other words, case numbers and household numbers—unique and invariable—make it possible to merge any two or all seven subtitles in Figure 3. This facilitates analysis with a broad spectrum of control variables in any test of a relationship between one specific pair of independent and dependent variables. Thus, it will be possible to test a broad range of explanations of the economic and social development of the Red River Settlement in particular and the development of new societies in general.

The coding scheme also permits genealogical mapping in many cases since the household numbers of mates' parents are coded whenever such links become evident in the sorting operation. This means that if one wished to trace the lineage of Jean Baptiste Lepine, born in the Red River Settlement about 1840, the first step is to scan computer output for the household number of a Jean Baptiste Lepine with this birth date. He is discovered under household number 2913. The household number of his parents is 2914, and the household number of the paternal grandfather is 2912, Jean Baptiste Lepine born about 1792. Here the line stops because he is the first Lepine recorded as a settler in Red River. Referral to the documents in the dossier on this case shows a marriage record copied from the Parish Register of St. Francois Xavier indicating that the Jean Baptiste of household 2912 was born in Berthier Parish, Lower Canada, the son of Jean Baptiste and Angelique Delorme. He settled in the Red River Colony sometime before 1834, the year he married an Indian woman called Charlotte Santeuse.

Hundreds of such cases link forebears of other Manitoba families to Berthier, St. Jacques, L'Achigan, Sorel and other places in Quebec—or the Orkney Islands. It is hoped that population historians in these other regions will find the data useful in studies of outmigration. With the permission of the Hudson's Bay Company Archives (from whose holdings so many of the data in the subtitles have been transcribed) computer tapes will be made available to all interested researchers after September 1981. It is also hoped that the historians of more recent

16. Some procedures for this operation and codebooks for the seven subtitles are available from the authors on request.

SUBTLE STRUCTURE OF DATA ON DISK STORAGE FOR THE
HISTORICAL DEMOGRAPHY OF THE RED RIVER SETTLEMENT

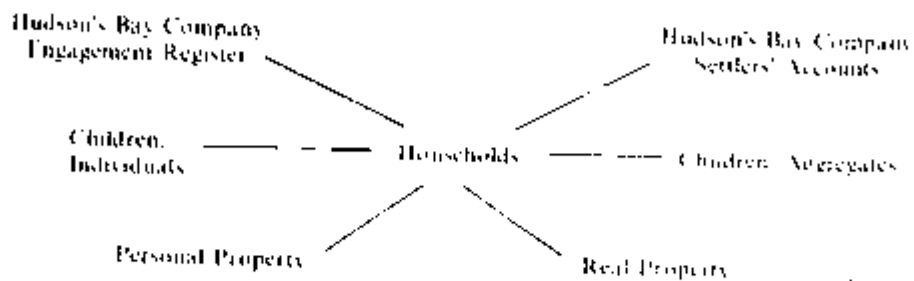


Fig. 3

All subtiles have one variable in common—household or case number. Thus, each may be processed alone, or in pairs or as one set. The data cover approximately five thousand families. The disk space required to store the seven subtiles is 140 tracks. In card form, the data would fill 18, two thousand card boxes.

Canadian history will find these data relevant once they are linked to survey material from the more recent past. This task is already well underway with the near completion of twelve additional subtiles pertaining to the land claims of Metis people between 1870 and 1885. A more ambitious study will cover the characteristics of persons who succeeded the Metis on their river lots and section land from 1876 to 1896. But these, the white pioneers, were succeeded in their turn, by the expansion of commercial agriculture and urban development between 1885 and 1914. Here, then, are successive populations whose emergence is open to study from the perspective of mass collective biography. The sources and research methods appropriate to these other sequel projects will be described in later articles.

Résumé

La colonie de la Rivière Rouge s'avère être, pour deux chercheurs de l'université du Manitoba, un important champ de recherche économique et démographique à exploiter. Ils ont isolé certains documents épars¹⁸⁷⁰ ou pouvant, après traitement par ordinateur, fournir des données statistiques. Ils décrivent dans cet article le genre de documents utilisés et la méthodologie qu'ils ont suivie pour les relier entre eux.