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C O N T E N T S

No. 62. Fri. Dec. 1, 1944 -- Baby Salmon Favourite Meal for Poaching Frogs

Frogs may have their good points but respect for "No Trespassing" signs isn't among them. At least, not if the signs should happen to be at fish rearing ponds. For instance, the Kejimkujik ponds in Western Nova Scotia which, like a number of others at different places, are maintained by the Fish Culture Branch of the Dominion Department of Fisheries for the purpose of rearing stock to be used in keeping up, and increasing, the supplies of fish in commercial and sport fishing waters.

One big frog was such a bold and busy poacher at Kejimkujik last summer that when the superintendent of the ponds was able to bring its career to a close he found that the creature had no less than 21 small salmon in its stomach. Perhaps that glutton may have set the season's record for destruction of baby fish by one frog at one time but to find frogs with four or five salmon inside them was a fairly frequent experience.

The men employed at the ponds did their best to protect the little fish but this happened to be a year when frogs were numerous at Kejimkujik and a good many salmon, all told, must have been gobbled up. Added to this loss were other young salmon picked out of shallow parts of the ponds by such birds as kingfishers, robins, grackles and sandpipers, which also have a taste for fish and keen eyes for finding them. As far as possible the birds were kept away but some of them dodged in.

The toll taken by frogs and birds combined is estimated to have run to substantial numbers, and that meant just so many fewer fish for stocking fishing waters for the benefit of commercial fishermen and anglers. That's the whole point of rearing ponds - to help keep up the country's fish stocks - and frogs and birds must be made to seek their meals elsewhere.

No. 63. Sat. Dec. 2, 1944 -- Progress in Horticulture

In a review of Canadian horticulture, an official of the Dominion Department of Agriculture traced the history of the science in Canada from the time of the Indians, through the eras of European settlement and the arrival of the Loyalists, to the present era into which Canada has but recently entered. The Indians grew corn, pumpkins, and beans under a system of cultivation, and the still familiar Squaw corn has been employed both as a variety and as a parent in plant breeding. As the pumpkin has never been found in a truly wild state, credit could be ascribed to the Indian for its introduction into North American horticulture.

The second era of Canadian horticulture -- that of the European settler, commencing with the French - was the real beginning of an attempt to develop a horticulture in Canada. As early as 1633, it has been recorded that apples were being cultivated close to what is now Annapolis Royal, Nova Scotia, but none of the varieties used at that time is in existence today. From the efforts, however, of the French settlers has come one variety of apple, the Fameuse, apparently originating from seed brought from France.

The next stage of the development of Canadian horticulture came after the American Revolution when Loyalists came to Canada in considerable numbers and brought with them either the materials or knowledge that led to a rapid development of the fruit industry in Eastern Canada.

Coming to more modern times, the advent of the Dominion Experimental Farms in 1886 was one of the prominent features in the development of the science. Fruit breeding was undertaken at the start, but prior to that, the first director of the Farms, Dr. William Saunders, had already originated a line of black currants which are today the leading kinds. He also brought several gooseberries, such as Silvia and Josslyn, which have become standard sorts. He also brought Brighton and Count raspberries, which up to recent days have been the standard early sorts.

Thus at the Central Experimental Farm in Ottawa, fruit breeding was early established, both to provide better hardy fruit for the potential fruit areas of Eastern Canada and for the Prairie Provinces. In 1898 Dr. Macoun of the Division of Horticulture embarked on an apple breeding program to originate a line of hardy varieties covering the season from late summer to late winter. Other landmarks in Canadian horticulture were the establishment of forestry stations in 1903 and 1912, and the Experimental Station at Morden, Man., in 1918, followed by what had not been done before, the growing of all kinds of fruit in the Prairie Provinces. Before the advent of World War I, Canada was entirely dependent upon Europe for its vegetable seed supply. Now Canada is an exporter of vegetable seed.

In the field of plant culture and nutrition, progress has been achieved, and Canada has made a notable contribution to the recognition of plant food excesses and deficiencies, and in the field of fruit and vegetable products, along the lines of original Canadian effort, canned fruit juices were developed; kiln dried fruit of uncertain quality was changed to a high-class dehydrated product, and a Canadian processed cherry industry was originated and developed; white vinegar was distilled from Canadian cider vinegar; and, as a result of Canadian research, a virile industry was established in dehydrated vegetables and fruits.

No. 64. Sun. Dec. 3, 1944 -- Canadian Plaice or Hippoglossoides Platessoides

In size, the Canadian plaice is scarcely proportionate to its big scientific name since, as a general rule, the fish runs only to something like a foot and a half in length and to a little less than two pounds in weight. However, as Vladykov and McKenzie point out in their "Marine Fishes of Nova Scotia," the plaice is "probably our most abundant and commonest flat-fish." So far as size is concerned, there is, of course, more or less difference between individual plaice but the largest specimen so far recorded was a fish 32½ inches long and weighing, when cleaned, 14 pounds. This big fellow was caught southwest of Sable Island, off Nova Scotia.

In exterior appearance the Canadian plaice, a bottom-frequenting fish, is quite scaly, and in colouring the upper side of its body may vary from a reddish shade to a very dark or blackish brown, while the under side is white. Like the halibut, the plaice is one of the large-mouthed flatfish, as distinguished from the small-mouthed flatfish such as the grey sole, for example. It has a rounded tail, not forked like the halibut, and, as a matter of fact, only one other of the large-mouthed Canadian Atlantic flatfish has a rounded tail - the brill, or "windowpane", as it is sometimes called because of a thinness which makes it almost transparent. Running down the centre of both the upper and lower sides of the plaice, and reaching from back of the head to the base of the tail, is a "lateral line" which in reality is made up of short ridges on the scales. Canadian plaice are relatively prolific fish and spawn in the spring or the earlier part of the summer. In the southern section of their range spawning begins in late March or early April but in the more northerly areas it may be in progress until late June, or even in July. The eggs float and the period of incubation is less than two weeks. Adult plaice

feed on small shellfish and other bottom creatures of suitable size. They do not migrate any great distance, as some other species do, although there is some inshore movement in winter. They have a fairly long life span and may live from 25 to 30 years.

This fish occurs on both sides of the Atlantic. It is common off West Greenland, and ranges, in European waters to the North Sea and the Western Baltic, with the English Channel its southern boundary. On the North American side of the world its range is from, roughly, the Strait of Belle Isle southward to Cape Cod, or thereabouts. The great bulk of the Canadian landings are made by Nova Scotia fishermen -- 70 per cent or more. Some of the catch is taken in the inshore areas and part on the offshore grounds, with the division of the production as between inshore and offshore waters fluctuating more or less from time to time.

Peace-time markets for the plaice catch have been in Canada and the United States. Sometimes, by the way, the fish are sold on the consumer markets simply as "flounders" or as "soles", but in official records the accepted name is "Canadian plaice".

No. 65. Mon. Dec. 4, 1944 — Warfare Against Japanese Beetle

A battle against an invasion of the Japanese beetle is being fought on the Canadian border. This border warfare is being carried out by the Dominion Department of Agriculture to prevent the beetle from getting a foothold in Canada. It is a very destructive pest, and, after its first appearance in 1916 in the United States in the vicinity of Philadelphia, it has devastated orchards, fruits, shade and ornamental trees over wide areas in the east central States and has spread to areas contiguous to the Canadian Provinces. Since then in its attempts to invade the Dominion, it has been working its way northward to the International Border by aeroplane, boat, motor truck, railway freight car, express car, automobile, and in imported plants, plant products and in parcels.

In 1934 when the first Canadian measures were taken to ascertain if the Japanese beetle had established in Canada, traps were distributed in freight yards, tourist camps, boat docks, parks, public gardens, and other places. From that time, all possible means of entrance the pest may use have been examined -- vehicles of every kind, boats, aeroplanes, and every imported article likely to afford a hiding place. In addition, every year fresh traps have been set, examined and lifted, and scouting parties have continually scoured the border.

During the 1944 season, the total number of live beetles collected was 847, of which 598 beetles were collected at Halifax. A Halifax lady, who is an amateur collector of insects, found a Japanese beetle feeding on a rose in her garden and submitted the specimen. While investigating the find, the officers of the Department of Agriculture noticed a number of these beetles feeding on the blooms of roses, zinnias, and dahlias in the grounds of a nearby hotel, adjacent to the waterfront. A survey was at once carried out by Dominion and Provincial officers to find the area of infestation. In all 596 beetles were collected from the hotel grounds and one additional beetle was taken on the property where the first specimen was found, making 598 beetles in all. Further investigation in the vicinity and along the shore failed to reveal the presence of any more beetles.

In Ontario, the seasonal trapping and scouting reports show a considerable concentration of beetle discoveries in two areas at Hamilton and one area in New Toronto. Although there was an increase from 1943 in the Niagara Falls and London

districts, the number of beetles taken consisted generally of scattered single specimens. At Windsor, there was a marked reduction from 1943 in the number of beetles collected. As a consequence, fall soil treatment was restricted to spraying six acres in Hamilton and nearly eight in New Toronto, requiring the use of 6,975 pounds of arsenate of lead. Throughout the years, the Japanese beetle has not been able to establish itself in damaging numbers on Canadian soil and is being held at bay at the Canadian border.

In Ontario the Provincial Department of Agriculture, and the civic authorities of the cities and towns where light local outbreaks have been located, have taken an active part in the measures of control.

No. 66. Tues. Dec. 5, 1944 -- Peppermint

The growing of the peppermint plant which is the source of the flavouring used by manufacturers of candy bars and chewing gum, or in the medicine the doctor has prescribed for that bothersome ailment, is becoming quite a well-established industry in Canada. Although we still have to import a large part of our needs of peppermint oil from other countries, the Canadian industry is coming along at a rapid rate.

Peppermint is a herbaceous perennial plant. It is found near streams and in wet places in several parts of Great Britain and on the European continent. It is now cultivated in many countries for the sake of its essential oil. Canada's needs come largely from the United States where the plant has been cultivated extensively since 1900.

Two years ago, growers in a Southern Ontario County experimented with the peppermint plant as a crop, and this year one grower planted 70 acres to peppermint and produced in the neighbourhood of 3,000 pounds of peppermint oil from this year's harvest. The essence was distilled right on the farm, the process used being much the same as that used for the extraction of alcohol from grain.

First, the leaves of the peppermint plant are pressed into covered steam vats. Steam pressure is then exerted for about an hour and a half and the vapour travels through a steam heated apparatus. Then it is led by a coil-like pipe into a cooling tank where it is condensed. From there it flows in a tiny constant trickle to a collecting vat in the form of pure peppermint essence. It requires many loads of leaves to produce a single gallon of liquid.

By the way, peppermint plants are grown from roots; a single root will produce plants for about four years before deterioration. The roots multiply rapidly and are transplanted into rows about three feet apart. The leaves are about one inch in diameter when ready for harvesting. The plant itself, when ready for cutting in late August, resembles twisted hay.

No. 67. Wed. Dec. 6, 1944 -- Public Hospitals

The foundation of hospitals in Canada dates back to the French regime. The first hospital in New France was the Hotel-Dieu de Quebec, founded in 1639. In Upper Canada, the earliest hospital recorded was one founded in 1790 at Sault Ste. Marie for the care of the Indians. Toronto General was founded in 1819, Kingston General in 1833, Ottawa General in 1844, Hotel Dieu at Kingston in 1848 and Hamilton General in 1850. With the expanding population of Canada, the increase in hospitals

was very marked during the last half of the nineteenth century. At the present time hospitals are to be found not only in every city and town of any size throughout the Dominion, but also at strategic points in many rural districts, and even in the sparsely settled northern areas.

There were 597 public hospitals in Canada in 1942, with a bed capacity of 50,197 beds and 6,733 bassinets, or five beds per 1,000 of the population, which, according to authorities on the subject, is sufficient to provide a normal occupancy of 75 per cent of the beds, leaving a 25 per cent margin in the prevalence of disease.

Admissions to public hospitals during 1942 totalled 1,079,000 persons, an increase of 5.8 per cent over admissions in the preceding year, while the number of persons under care was 1,111,000 who received 13,628,000 days' care. Nine persons out of every 100 received care in public hospitals in 1942 as compared with eight per 100 in 1941.

The average cost of maintaining a patient in public hospitals during the year was $49.69, while the per diem cost based on patient days for Canada as a whole was $4.06. The cost per patient day by provinces was as follows: Prince Edward Island, $3.21; Nova Scotia, $3.61; New Brunswick, $3.70; Quebec, $4.38; Ontario, $4.01; Manitoba, $3.54; Saskatchewan, $3.69; Alberta, $3.57; and British Columbia, $4.69.

Total revenue of 481 public hospitals which reported fully on finances during 1942 was $53,386,000 with expenditures of $53,381,000. Net earnings from patients totalled $35,019,000. Grants from provinces for maintenance of patients amounted to $6,045,000, from municipalities $5,070,000 and other special grants $442,000.

No. 68. Thurs. Dec. 7, 1944 -- Penal and Corrective Institutions

From 1792 to 1810, various Acts were passed by the legislatures of Upper and Lower Canada to provide for gaols and houses of correction. An institution was opened at Kingston in 1835 and included in its plant various shops in which inmates were employed during their periods of imprisonment. A reformatory existed at St-Vincent de Paul, which was destroyed by fire in 1864. In 1854, a two-storey granite structure containing eighty cells was erected at Halifax, Nova Scotia. New Brunswick at the time of Confederation had an institution near Saint John with accommodation for eighty inmates and surrounded by twenty-five acres of land. There has been a progressive development in penal administration from the year 1867, when the Dominion Government took over certain major penal institutions that were formerly under colonial control.

These institutions formed the nucleus of the present penitentiary system which, under the Department of Justice, has been developed into the present chain of seven penitentiaries, having a total capacity of approximately 3,500 inmates. These institutions have been improved and modernized so that they supply modern sanitary accommodation, medical care, training in various trades, education facilities, libraries, etc., all tending to improve the social standard of the inmates, with the aim that they shall become useful citizens upon release.

The provincial reformative and corrective institutions, industrial schools and farms may be considered to have a common origin with the penitentiaries. During the period after 1867, when the penitentiaries passed under Dominion jurisdiction, the Provincial Governments laid the basis of the present reformative system. These

institutions are intermediate between the common gaols and the penitentiaries, and are provided with facilities for the education and improvement of the morals of the inmates.

Such reformative and corrective institutions are maintained either directly by the Provincial Governments or religious and other organizations subsidized from the provincial treasuries. They care primarily for juvenile delinquents and adults who are not hardened criminals, while recidivists beyond reform or those guilty of major crimes and sentenced to a long period of imprisonment are sent to penitentiaries.

No. 69. Fri. Dec. 8, 1944 -- Charitable and Benevolent Institutions

In Upper Canada an Act was passed in 1799 to provide for the education and support of orphan children. In the different colonies before Confederation, under various Acts of the Legislatures, there were provided houses of refuge, homes for the aged, orphanages and other charitable institutions.

The most serious welfare problems, particularly in Upper and Lower Canada, were those connected with immigration. Many immigrants were destitute on their arrival and were dependent on charity. In 1824, an immigrant hospital was opened at Quebec for the care of the indigent sick.

Throughout the colonies before Confederation, an interest in child welfare found expression in the incorporation of numerous institutions for friendless orphans and children physically incapacitated. These orphanages were largely supported by the philanthropy of societies or individuals, and, if grants of public money were received the management was subject to government supervision. During this period, the orphanage and the industrial school were all that were available to the child who lacked normal home care.

Since Confederation, the principle has become generally recognized that the indigent, aged and infirm, orphans, dependent and neglected children, the deaf and dumb and the blind should be the wards of the State. Numerous Acts of the Provincial Legislatures have recognized municipal and provincial responsibility for these classes of the population by establishing institutions for their care.

In every province of Canada, public welfare organizations now exist to look after their protection and well-being. Child-welfare work as it is known to-day was not recognized as a special field for case work until toward the close of the nineteenth century. Now, noteworthy contributions are being made in child-welfare work by the Provincial Government Departments of Child Welfare, the Children's Aid Societies, Juvenile Immigration Societies and Day Nurseries.

No. 70. Sat. Dec. 9, 1944 -- Mental and Neurological Institutions

The first reference to institutions for the care of the insane in Canada was in connections with L'Hopital General, Quebec, founded in 1693. About 1714 a small dwelling was built in connection with this hospital for the reception and treatment of those suffering from mental diseases. In 1753, L'Hopital General, Montreal, erected several small buildings for the care of the insane. In 1824, a special committee of the Legislative Council of Lower Canada was appointed to inquire into the establishments for the reception and care of the insane and to report their findings with a view to improved methods of treating insane patients.

By 1845 the number of insane had increased to such an extent that provision was made for large and commodious buildings for the proper care and treatment of mental cases by the erections of such institutions as Quebec Asylum and that at Baie St-Paul.

About the same time the movement for the provision of proper care of the insane was developing in other provinces. In Prince Edward Island, after the passing of an Act authorizing the erection of an asylum near Charlottetown, a building was begun in 1844 which was replaced in 1879 by the Falconwood Asylum. In New Brunswick, in 1874, the old cholera hospital was abolished and the first of the group of buildings which now comprise the Provincial Hospital of Saint John was built and occupied. In 1856 the cornerstone of the first mental hospital in Nova Scotia was laid in Halifax. In Upper Canada an Act was passed in 1830 making provision for the relief of destitute lunatics. In 1841 the first building was opened in Toronto for the care of the insane. Rockwood Asylum at Kingston was opened in 1856, followed by the London Mental Hospital in 1859.

The construction of the first mental institution in Manitoba was begun in Selkirk in 1884, and was followed by Brandon Asylum in 1890. In Saskatchewan the first provincial mental hospital was built at Battleford in 1911, and soon afterwards the large mental hospital at Weyburn. The mental hospital at Ponoka, in Alberta, was completed in 1911 and the Provincial Mental Hospital at Edmonton in 1912. In the early days of British Columbia, mental cases were not specially provided for. Later a certain amount of care was furnished in a building in Victoria known as the Pandora Street Institution. In 1875 the Insane Asylums Act was passed. The first mental hospital in British Columbia was erected in 1878 at New Westminster.

At the close of the calendar year 1942, there were in Canada 59 institutions that had the care and treatment of mentally sick persons, of which 32 were provincial mental hospitals, five training schools for mental defectives operated by the provinces, 15 county and municipal hospitals and asylums, two Dominion, and three private institutions.

In these institutions at the end of 1942, there were 45,937 patients in hospital, of whom 35,518 were classified as insane, and 9,578 were mental defectives. The ratio of males per 100 females under care was 123, and the number of persons under care per 10,000 of the general population was 39.4.

No. 71. Sun. Dec. 10, 1944 -- Purpose and Value of Soil Surveys

Lack of knowledge concerning soils has been to a large extent responsible for many of the difficulties encountered in soil management and proper land use. Although the use of land is as old as civilization itself, it is only within the past fifty years or so that systematic studies or surveys of the soils of the world have been undertaken.

Throughout Canada an extensive soil survey program is being conducted by the Dominion Experimental Farms Service in co-operation with the Provincial Departments of Agriculture and the soils departments of various agricultural colleges. Before any sound plans for soil conservation and rehabilitation can be formulated for any area it is necessary to have as complete information as possible about the soils of that area.

The soil survey will provide the farmer with information about the type of soil on his farm, its relationship to the soil on neighbouring farms and in other sections of his county and province. Knowing the soil type or types on his own farm

and their relationship to soils of other areas the farmer will be in a better position to study the farm practises used on neighbouring farms, also the results of the investigational work conducted on illustration stations and experimental stations. He will be able to select and use such information as will be most applicable and beneficial to his own soil conditions. Consequently, he will be in a position to plan his own farm organization more intelligently, be able to select and use the cropping system, fertilizer practice and soil management practices that are best suited to his own soils.

The value of the soil survey in such large scale projects is to be found in the wide use made of soil surveys by the Prairie Farm Rehabilitation Administration in Western Canada and in the use of soil survey information in the soil conservation work conducted in the United States. Soil survey information has also proved of value in taxation studies, financing farm loans and in agricultural economic studies.

While a soil survey of any region will provide much fundamental information concerning the soils of that region, it will not in itself solve the agricultural problems of that region. The greatest value of a soil survey can only be realized when the farmer, the technical worker and others interested in the progress of agriculture make the fullest use of the information obtained from the soil survey.

No. 72. Mon. Dec. 11, 1944 -- Decrease in Adult Crime in 1943

There was an overall decline of 18.2 per cent in the number of adults convicted of breaches of the law during 1943 as compared with the preceding year. This was the first decrease shown in adult convictions since 1933 during which year a long continuation of yearly increases dating from 1922 was broken. The number of adults convicted during 1943 was 507,807 compared with 620,673 in 1942, a numerical decline of 112,886.

Convictions of adults for indictable offences increased 6.2 per cent during 1943, or to 41,752 from 39,309 in 1942. This was the first increase recorded since the year before the war, during which year an all-time high of 48,107 convictions were obtained. Theft, which ordinarily accounts for nearly 25 per cent of all indictable convictions each year increased from 9,135 during 1942 to 10,055.

The crimeswhich in addition to theft resulted in the increase in the number of indictable convictions in 1943 as compared with 1942 include: breaches of the Wartime Prices and Trade Board Act with an increase of 472.6 per cent; breaches of Defence of Canada Regulations, an increase of 21.4 per cent; receiving stolen goods, an advance of 17.6 per cent; common assault, up 9.9 per cent; theft of automobile, an increase of 6.1 per cent; assault on police, up 5.7 per cent; and burglary, an advance of 5.4 per cent.

Among the decreases in convictions for indictable offences recorded in 1943, as compared with 1942, were the following: driving a car while drunk, 25.2 per cent; false pretences, 22 per cent; forgery and uttering, 14.6 per cent; aggravated assault, 11 per cent; and gambling and lotteries, 9.3 per cent. Convictions in each case numbered over 1,000 during 1943.

The number of convictions for non-indictable offences in 1943 decreased to 465,315 from 581,364 in 1942, or by 20 per cent. This was the first decrease for non-indictable offences since 1938, and the decline in that year was the first

shown since 1922. The main factor in the decrease was a very marked decline in convictions for breaches of traffic laws, the total for which class declined from an all-time high of 399,957 in 1942 to 274,753 in 1943, or by 31.3 per cent.

Other decreases for non-indictable offences, showing over 10,000 convictions in each class during 1943 as compared with 1942 were the following: Liquor Acts, 10.8 per cent; drunkenness, 5.7; and gambling, 5.3. "Having a radio without a licence" was the only offence for which over 10,000 convictions were recorded during 1943 which showed an increase over 1942. Convictions under this heading increased from 21,706 in 1942 to 34,434 in 1943, or by 59.9 per cent.

A group of wartime acts were leaders in the non-indictable offences having from 1,000 to 5,000 convictions which showed increases during 1943 as compared with 1942. Convictions for breaches of the Selective Service Act increased from 37 in 1942 to 1,327 in 1943, War Measures Act from 88 to 1,116, and the Wartime Prices and Trade Board Act from 733 to 2,471. Other offences in the 1,000 to 5,000 group which showed increases were: Militia Act, 55.2 per cent; damage to property, 4.6; and assault, 4.5 per cent.

No. 73. Tues. Dec. 12, 1944 -- Occupational Trends in Canada

The 1941 Census of Canada records 4,195,951 persons, 14 years of age and over, in gainful occupation as compared with 3,921,833 in 1931 and 3,164,348 in 1921, excluding Yukon and Northwest Territories. The total for 1941 does not include members of the armed forces who numbered 314,584 at the date of the Census. The gainfully occupied represented 49.3 per cent of the total population 14 years of age and over, as compared with 53.8 per cent in 1931 and 53.3 per cent in 1921.

Males, 14 years of age and over, excluding those on active service in gainful occupations numbered 3,363,111 in 1941, 3,256,531 in 1931 and 2,675,290 in 1921, while the females totalled 832,840 in 1941, 665,302 in 1931 and 489,058 in 1921. The percentage of males in gainful occupations declined from 86.6 per cent in 1921 to 76.7 per cent in 1941, while the percentage of females rose from 17.2 to 20.2 per cent. The number of females to every 1,000 males in gainful occupations increased from 183 in 1921 to 204 in 1931, and to 248 in 1941.

A feature of the males in gainful occupations since 1921 has been the decline shown in the relative importance of agricultural occupations. In 1921, 38.2 per cent of males in gainful occupations were engaged in agricultural pursuits as compared with 31.7 per cent in 1941. There has been some increase in the proportionate importance of other primary occupations since 1921. Manufacturing occupations have also increased in relative importance, especially over the period from 1931 to 1941. There has also been a steady growth in the numbers of males engaged in transportation, trade and service occupations.

Since 1921 the proportion of females in commercial occupations and in the professions has declined, while the proportion in clerical occupations has remained about the same. The personal service occupations continue to employ a large proportion of all women in gainful occupations and have shown a tendency to increase in relative importance since 1921. Phenomenal growth in the numbers of hairdressers and waitresses has contributed to this expansion in the number of women in personal service occupations over the 20-year period since the 1921 Census. Part of the decline in the relative importance of manufacturing occupations in providing employment for women has been due to the decrease in the number of dress-makers, milliners, and tailoresses.

No. 74. Wed. Dec. 13, 1944 -- Gold in Canadian Mining History

Threads of gold provide the richer hues in the tapestry of Canadian mining history. From the Appalachians and the Atlantic in the East to the Cordilleran region in the West, and northward from the fringe of the great plains and from the older sections of Ontario and Quebec towards the Arctic, is woven the story of the Argonauts.

The history of the metal in Canada goes back for almost three centuries. In 1654 Louis XIV of France granted a concession to Nicholas Denys to mine gold in Nova Scotia, and in 1770 Alexander Henry, a trader, formed, with the Duke of Gloucester, an English company to develop minerals near Sault Ste. Marie, Ontario. However, it was not until 1823 that the discovery of gold was officially reported in Canada. It is related that the finding of alluvial nuggets in that year was made by a young woman while fording the shallows of the Chaudiere River in south-eastern Quebec.

Widespread prospecting in far Western Canada followed the great California gold discoveries in 1849. In 1852 auriferous quartz veins were located at Mitchell Harbour, Queen Charlotte Islands, which resulted in the first lode-mining rush in British Columbia. In 1855 ex-servants of the Hudson's Bay Company discovered placer gold in the same province at the mouth of the Pend d'Creille River, and in 1857 Governor James Douglas issued a proclamation regarding the working of gold mines in the Kamloops, Ashcroft and Vernon areas.

In 1858 the discovery of placer gold in the lower reaches of the Fraser River resulted in a rush to this area of miners from California, and by the following year prospectors had penetrated to Cariboo and Quesnel. Then followed the colourful years of the Cariboo Trail and the roaring days of early Barkerville with its bonanza placer diggings.

No. 75. Thurs. Dec. 14, 1944 -- Early Nova Scotia and Ontario Gold Discoveries

The golden threads of the weaver moved once again towards Eastern Canada - for from sea to sea the spirit of adventure was spreading among the virile pioneers of a nation in the making. From Nova Scotia came the news in 1860 that lode gold had been discovered in the Tangier district by John Pulsiver. This was followed from 1862 to 1865 by similar discoveries in that province at Oldham, Lawrencetown, Isaacs Harbour, Renfrew and Mount Uniacke.

Probably the most significant discovery of gold in Canada from a geological viewpoint was made near Madoc, Hastings County, Ontario in 1866. This event represents the first officially recorded discovery of gold in the rocks of the enormous Canadian pre-cambrian shield. Although the area was disappointing from an economic standpoint, it provided the geologist with much valuable information for the future exploration and study of other and newer sections of the northland.

Trappers, lumbermen, surveyors and prospectors were now rapidly becoming mineral conscious, and with their penetration of the wilderness came more discoveries in the far-flung solitudes of the great hinterland. Gold was first found in the Yukon River in 1869; in 1878 it was discovered in the Lake of the Woods district in Ontario; and during 1883 copper-nickel ores were located near Sudbury, Ontario. The completion of the Canadian Pacific Railway in 1885 greatly facilitated the development of many ore deposits, the well-known Rossland camp in southern British Columbia being operated in 1889.

No. 76. Fri. Dec. 15, 1944 -- The Klondike Gold Rush

The first news of the Klondike - a name which will probably remain ever outstanding in the history of Canadian gold mining -- certainly the most colourful and romantic -- came to the outside world in 1896. Some of the Klondike creeks were exceedingly rich with single pannings known to have run into the hundreds of dollars. The great rush reached its peak in 1898 when Chilcoot, Skagway, White Horse and Dawson became world-known names.

During 1900, the maximum year of production, the gold output from the Yukon totalled 1,077,553 fine ounces which, valued at the present price of gold, would amount to $41,486,000. Production from the same sources from 1897 to 1906 inclusive, at the same price, would total $222,563,100. With the exhaustion of the bonanzas, the old order yielded to the new and the rocker and the pan of the prospector has been largely replaced by the higher efficiency of the modern gold dredge.

This same period also witnessed in British Columbia the discovery of the Pioneer, Copper Mountain, and the Britannia mines, and the Atlin placer deposits.

No. 77. Sat. Dec. 16, 1944 -- Great Gold Discoveries in Pre-Cambrian Shield

In Eastern Canada, gold discoveries were made during 1906 at Lake Fortune in northwestern Quebec, and at Larder Lake in Ontario, and in 1908 came the first discovery of gold in the Porcupine area. This was followed in 1909 by the discovery in the same area of the Hollinger, McIntyre and Dome mines.

In British Columbia the Premier mine was located in 1910, and in the following year gold was discovered at Kirkland Lake, Ontario. The first recorded discovery of gold in Manitoba was made at Rice Lake in 1911, and four years later the Flin Flon copper-gold deposit was discovered.

A very important event in the history of Canadian mining was the discovery in Quebec during 1921 of the Noranda copper-gold deposit. This was the immediate forerunner of several other important discoveries in the province of Quebec, including the Amulet, Waite and Siscoe. The year 1923 witnessed the discovery in Manitoba of the Sherritt-Gordon mine, and in 1925 that of the Howey mine, the first major gold find in the Red Lake area of Ontario.

The decade from 1930 to 1940 witnessed a very extensive program of exploration and development of gold-bearing deposits throughout the auriferous areas of Canada. In Ontario new mines in the Little Long Lac and Patricia districts were brought into production and important new producers added to the Porcupine, Kirkland Lake and Larder Lake camps. In northwestern Quebec, several new and valuable gold properties were successfully developed.

In 1938 the Box Gold mine was developed near Goldfields, Saskatchewan, and in the same year the Consolidated-Rycon property was brought into production at Yellowknife, Northwest Territories. Gold was also discovered during 1938 in the Northwest Territories at Thompson, Wray and Russell Lakes. Yellowknife is Canada's youngest lode gold-mining camp and results so far obtained augur well for its success in the future.

No. 78. Sun. Dec. 17, 1944 -- Value of Gold Production

Gold production has been a very important economic factor in the development of Canada. Since 1858, the first year for which records are available, to the close of 1942, Canadian auriferous deposits have yielded the metal to the value of $2,431,280,000. Production reached an all-time high in 1941, when the mines of the nation recorded an output of 5,345,179 fine ounces valued at $205,789,392.

The total figures of Canadian gold production include recoveries of the metal from all types of ores. By far the greater part is obtained from lode quartz ores. In 1941 these recoveries, by percentages were: alluvial deposits, 1.99; gold quartz ores, 86.90; copper-gold ores, such as those of the Noranda and Flin Flon mines, 9.25; nickel-copper ores, 1.46; and silver-lead and other ores, 0.40.

The increase in the value of gold since September, 1931, when Great Britain went off the gold standard, has contributed tremendously to the great expansion in Canadian gold production. Gold in Canadian funds is now approximately 86 per cent greater in value than in August of 1931.

Another important event in the recent history of gold was the proclamation issued by the President of the United States on January 31, 1934, whereby the gold weight of the United States dollar was reduced from 25.8 to $15\frac{5}{21}$ grains, 0.9 fine. In 1935 the Canadian gold bullion tax was discontinued and depletion allowances revised for payments of gold-mining dividends.

The great increase in the value of gold has permitted the mining of ores heretofore considered as uneconomical; this is shown by the fact that the average of all auriferous quartz ores treated in Canada has fallen from 0.41 ounces of gold per ton in 1931 to 0.24 ounces per ton in 1942.

No. 79. Mon. Dec. 18, 1944 -- Gold Mining in Canada's Development

Coincident with the development of Canadian mineral deposits has been the almost general growth of northern mining towns. The social and industrial life of these places now compares favourably with that of the more mature communities to the south. Most of these urban mining centres have evolved a relatively high standard of living -- public works include water, electric, telephone, radio and sewage systems, and transportation facilities are in most instances provided by rail, highway, air, or water. Industries ancillary to mining and farming and including packing plants, printing, dairies, sawmills, etc., have been established at many strategic locations. A highly efficient retail trade has developed. Religious and educational privileges are made available to the very diversified racial groups in even the most remote of mining camps. In these youthful outposts can be seen most vividly the current synthesis of a new Canadian from the many racial stocks of the old world.

In 1941 the lode gold mines of Canada provided direct employment to nearly 32,000 persons and paid $61,000,000 in salaries and wages. From the manufacturers of steel, explosives and various other products were purchased goods amounting to nearly $21,000,000, and in addition $8,336,000 was expended for fuel and electricity. Capital employed totalled $243,139,000.

Of the total net value of commodity production in Canada for 1941 of $4,720,073,000, the entire mining industry contributed 11.67 per cent, of which 3.84 per cent is credited solely to the lode gold mines. Reflecting the magnitude

of the physical operations is the fact that in 1941 over 20,000,000 tons of Canadian gold ores were mined, or approximately 2,000,000 tons more than the entire tonnage of coal produced in Canada during the same period.

A recent survey conducted by the Dominion and Ontario and Quebec Departments of Agriculture indicates the importance of mining development in the colonization of northern areas. "Mining preceded agricultural development in Timiskaming and Cochrane districts in Ontario and provided ahead of production a market for all farm produce. Timiskaming district was opened up largely by the cobalt mines. When the most important of these ceased production, Kirkland Lake and Porcupine came along to take their place. There are about 4,000 farmers in these two districts. How dependent they are on the mining towns may be indicated in the instance of Kirkland Lake, where a farmers' market was established in 1927. This market developed with gold mines until in the year 1940-41, when the study was made, some $417,618 worth of produce was sold by local farmers, half of which was actually at the town market. Since much of the bush has been exhausted in South Timiskaming, farmers must rely more and more upon the mining populations to consume their products. It is to be noted and expected that they would as the years go on provide more and more of the requirements formerly supplied from Western Canada and Southern Ontario".

No. 80. Tues. Dec. 19, 1944 -- Post-war Prospects for Gold

Canada now ranks second among the gold-producing countries of the world, and it is quite logical that she may retain this position indefinitely. The ore reserve of the larger companies are considered satisfactory and the coming of peace and the lifting of wartime restrictions should witness the resumption of exploration and development and the bringing into production of new mines.

Hydro power is widespread throughout Northern Canada, and the older mining districts are now serviced by highly efficient hydro-electric networks. The development of new mining districts will tend to increase the development of our widespread water powers and other latent resources and will speed the opening up to industrial life of our great land of lakes, forests and rivers.

The area of Canadian pre-cambrian rocks - the principal host for metalliferous wealth - is estimated at some 1,825,000 square miles. The Chief Geologist of the Geological Survey of Canada has stated that geological information is very incomplete for Canada; less than a fifth of the Dominion has been studied in any adequate manner. He also reports that present information indicates that the pre-cambrian complexes of ancient rocks are the best hosts for ores of the gold-quartz type. Over a hundred mines of this type have been opened and all lie within the complexes. The ores were derived from igneous sources and as igneous rocks exist almost everywhere in the shield, mineral deposits may be much more widespread than is suggested by present mines, and search for new deposits should not be confined to the present complexes. The Cordilleran region comprises all of Canada west of the Plains region; the potential metalliferous part includes practically all of Yukon except the southeastern corner, and all of British Columbia west of the Rocky Mountain Trench.

No. 81. Wed. Dec. 20, 1944 -- Marine Shipping

When the veil of secrecy is lifted and the world is told the full story of the present war, no account will be more thrilling than that of the part played by Canada's merchant fleet. To them has been entrusted a share of the task of

transporting vitally important supplies across the seas to the battle zones. They have faced dangers of wind and water, enemy undersea and surface raiders, hostile aircraft, and have emerged victorious. The record of their achievements adds a colourful page to the expanding chapters of Canada's contribution to the war.

Canadian ocean shipping dates back to the days of early European fishermen who frequented the shores of Newfoundland and the Maritime Provinces. Shipyards established at Quebec and other points along the St. Lawrence, with later establishments in the Maritime Provinces and along the western coast, have formed the principal bases of Canadian shipping.

Canadian shipping attained some prominence in the days of fast wooden sailing vessels, and also at a later date when steam power first came into use. In 1833, the Royal William, a Canadian ship built to ply between Quebec and Halifax, crossed the Atlantic from Pictou to London, and was the first vessel to navigate the Atlantic entirely under steam power.

Inland shipping is associated in its beginnings with the birch-bark canoe of the American Indian. After the migration of the U.E. Loyalists, the bateau and Durham boat came into common use. In the absence at that time of any roads to make land travel possible, the St. Lawrence River and the Great Lakes formed the main highway to the interior. The route from Montreal to the Upper Lakes was broken at three places - from Montreal to Kingston transportation was by bateau or Durham boat; from Kingston to Queenston, schooners were used; then, after the portage road from Queenston to Chippawa, the schooner was again taken to the destination.

In 1809, the Accommodation, the first Canadian steamship, was built for the Hon. John Molson, to run between Montreal and Quebec. The Frontenac was used on Lake Ontario from 1817 on a weekly service between York and Prescott and, following this, there was a period of great activity in lake and river shipping. In 1845, the Gore reached Lake Huron by way of the Welland Canal to carry on transport trade on the Upper Lakes, where previously there had not been enough traffic to support a large ship. Shipping on the Upper Lakes became brisker now, for there were settlers to be carried from Buffalo to the western United States and grain to be brought back. In this period Canadian shipping made its profit by carrying United States goods, for there was little traffic originating in the Canadian near-West.

No. 82. Thurs. Dec. 21, 1944 -- Tuberculosis in Man and Beast

It is not so long ago that the word "tuberculosis" sent a chill of fear through the hearts of men, for in years gone by this disease took a heavier toll of life than all others combined. But today, through the determined efforts of public health authorities and medical men, progressive steps are being taken toward its elimination. The reduction in the number of deaths from tuberculosis amongst the citizens of Canada during the past 17 or 18 years has been truly remarkable. In 1926 the death rate from this cause for each 100,000 of the population stood at 86; 10 years later it had fallen to 61.4; and by 1943 it had been reduced to 52.3.

But it is not only amongst the human element of our population that progress is being made toward the eradication of tuberculosis. According to Dr. Mark Barker, Veterinary Director General of Canada, bovine tuberculosis control in the Dominion goes back almost to the time when tuberculosis was first discovered. As early as 1896, a free tuberculin testing service was made available to Canadian

herd owners. Later in 1902, this assistance was limited to furnishing the tuberculin free of charge to the veterinarians employed by the stock owners, provided a report of the results of the test was made to the Dominion Department of Agriculture. About that time (1903), the permanent marking of the right ear of reactors with the letter "T" was adopted and the exportation of such cattle prohibited.

In 1905, the Department adopted what is known as the Supervised Herd Plan, under which herds are tested free. The plan is still in effect. Up to the present, about 33,700 herds containing approximately 404,400 head of cattle are being dealt with for bovine T.B., and there is a waiting list of nearly 3,000 herds, all from outside the tuberculosis-free areas.

The next control policy was the Municipal Tuberculosis Order which provided for the testing of dairy herds supplying milk to any town or city that applied for assistance. This policy remained in operation from 1914 to 1933, and it was the first policy in Canada in which provision was made for the payment of compensation for reactors ordered for slaughter.

The next policy was the Accredited Herd Plan, and for the past 25 years there has been a constant and steady demand for the service from the breeders of pure bred live stock. It provides for testing pure bred breeding herds, compensation to be paid for reactors ordered for slaughter. At the present time there are 8,303 fully accredited herds, 295 in process of accreditation, and 30 waiting initial test, a total of 8,628 herds, containing about 259,000 head of cattle.

The last control and eradication policy adopted was the Restricted Area Plan which came into operation in 1922. It is under this plan that the greatest progress in eradicating bovine tuberculosis is being made. The first area to be established consisted of three rural municipalities in Manitoba with a total of about 16,500 cattle, the first test having been completed early in 1923. From this small beginning, the work has progressed until today it is estimated that one-half of the cattle in Canada have now been brought under supervision.

No. 83. Fri. Dec. 22, 1944 -- Graft Apple Trees for Quick Fruiting

The established method of grafting young and mature apple trees is known as "topworking". It consists of cutting back the scaffold branches severely, often to within a few inches of the tree trunk, and inserting scions of the desired top-variety in the cut ends of these branches or "hubs". In recent years, a new idea of grafting utilizes almost all of the top of the tree, only small laterals, spurs and undesirable branches being removed. This is known as "frameworking", for practically the entire framework of the tree is used to hold the scions. In contrast to "topworking" methods, "frameworking" takes more time per tree, but allows the converted tree to return to profitable bearing within two or three years, and the tree itself has been found to suffer far less shock than when the top has been cut back severely.

Framework grafting experiments have been underway at the Dominion Experimental Station, Kentville, N. S., since 1942, and these trials have already demonstrated the value of "frameworking" for bringing the grafted tree back to profitable fruiting in the third season after grafting.

In one of the experiments, approximately 500 Crimson Gravenstein scions per tree were inserted at 16 inches apart in several 30 year old Stark trees, in May, 1942. From these trees, a crop of slightly more than four barrels per tree of fine quality fruit was harvested in September, 1944. Stark trees of the same age that

were "topworked" in 1942, have borne no fruit, nor will they have sufficient bearing surface for a profitable crop for some time to come. Each of the "frameworked" trees took about 12 man-hours to graft, whereas a "topworked" tree could be done in a little less than 1½ hours.

Several framework-grafting methods have been used in comparative trials at Kentville, but any method that assures a close, firm contact between the cambial tissue of stock and scion will prove satisfactory. Scions may readily be placed in the stock of a cut-off spur or lateral, or they may be wedged into a clean cut into the side of any lateral or scaffold branch. When the bark is "slipping" in late spring, scions may be forced in between bark and wood of the stock, and tacked into place. At Kentville the average scion-take was over 95 per cent, a hot or "brush" wax having been carefully used to seal each graft union and all major wounds.

After-care consists chiefly of pulling out all sucker growths from the stock tree two or three times during the first season's growth of scions. Some thinning and heading back of scion shoots may be done at pruning time, but heavy cutting should be avoided.

No. 84. Sat. Dec. 23, 1944 -- Newsprint Industry Endeavouring to Meet Outside Demand

Canadian publishing concerns, including newspapers, magazines, trade and industrial publications, and even the King's Printer, have continued to be "on rations" so far as newsprint is concerned, and many Canadian advertising media have been regretfully compelled to refuse space from time to time, even to clients whose bona fides are unquestioned. The chief reason for this is not the scarcity of newsprint in Canada, but the fact that the Dominion has endeavoured to supply the bulk of the needs, not only of the publications in most of the Western Hemisphere, but of many of the countries outside.

The Wartime Prices and Trade Board has announced that Canadian deliveries of newsprint to the United States during the first six months of 1945 "will be maintained at the same rate as in 1944 -- 200,000 tons a month".

But pulp deliveries will be reduced slightly. To the United States pulp exports during the first six months of 1945 will be at the annual rate of 1,000,000 tons, compared with exports of 1,100,000 tons in 1944. This arrangement was agreed upon after a joint meeting of the United States and Canadian administrations responsible for pulpwood, pulp and newsprint, and the reason given for the reduction was "the necessity recognized by all concerned that Canada supply additional quantities of pulp urgently needed by Great Britain and other Allied countries".

Shortages of wood at the mills, it is stated, have also contributed to the reduction, but these shortages have been partly offset by the extraordinary efforts of the Canadian newsprint industry to produce additional quantities of pulp. Reduction of pulp supplies to the United States may require some domestic adjustments by the War Production Board.

During the wood-driving season in 1944, it is stated, shortages of water in the streams reduced the deliveries of pulpwood to Canadian mills below the volume that had been anticipated. This had created a "very tight" wood supply situation for the first half of 1945.

Reports of wood production in the Canadian forests during the current cutting season, however, were "encouraging" and it was hoped that some improvement

in deliveries of pulpwood to Canadian mills might be possible during the second half of 1945, sufficient to allow an over-all improvement in Canadian production of approximately 5 per cent.

No. 85. Sun. Dec. 24, 1944 -- Canadian Reindeer Experiment

The establishment of herds of reindeer in Northern Canada has not only supplemented the wild life resources of the region but has also laid the foundations for an industry that is intended to improve the economic condition of the native Eskimos. For centuries, barren-ground caribou, together with seals, whales, walrus, and fish, formed the principal basis of subsistence of these people. The caribou, ranging the northern tundras in great herds, provided hides for the manufacture of clothing and sleeping bags, sinew for thread, and bones and antlers from which were made many useful implements. The meat formed an important part of the Eskimo's food supply.

The arrival of traders and the subsequent introduction of firearms into the Arctic resulted in a great reduction in the numbers of caribou, and herds that escaped decimation changed their routes of migration to the more isolated regions. The consequent scarcity of caribou and the encroachment of civilization on what was once the exclusive domain of the Eskimos, brought about a revolutionary change in the habits of the natives. In some areas they became entirely dependent on trapping in order to obtain a medium of exchange with which to purchase food and clothing, and their economic condition varied with fluctuations in the supply of fur-bearing animals and the price of furs.

In 1926, with a view to improving the welfare of the native population, the Dominion Government undertook the introduction of a herd of reindeer to a suitable area in the Mackenzie District of the Northwest Territories. Reindeer have long had an important place in the economy of people in various parts of northern Europe and Asia, providing them with food and clothing and a means of livelihood at all seasons of the year. The introduction of these animals to Alaska from Siberia during the latter part of the nineteenth century relieved growing destitution among the natives along the Arctic coast and provided an industry that is still serving their needs and interest.

Previous attempts to introduce reindeer into Canada as a source of food and clothing were unsuccessful. The first important venture appears to have been made by the International Grenfell Association. Commencing in 1907, the late Sir Wilfrid Grenfell brought reindeer from Norway to northern Newfoundland with a view to their later use in Labrador. Although the original herd of 250 animals increased in a few years to more than 1,200 head, and many of the animals were landed on the southeastern coast of the Province of Quebec, a series of misfortunes culminated in the failure of the venture. In 1921, the Hudson's Bay Reindeer Company landed 550 reindeer from Norway on southern Baffin Island, but the animals soon scattered and dwindled rapidly in numbers, and the scheme was abandoned.

Notwithstanding these reverses, observers believed that there was a place for reindeer in the economic life of Canada. This opinion was supported by the successful introduction of reindeer into Alaska as mentioned above.

No. 86. Mon. Dec. 25, 1944 -- Establishment of the Main Reindeer Herd

In 1919 a royal Commission was appointed by the Dominion Government to study

the possibilities of developing reindeer and musk-ox industries in the Arctic and sub-Arctic regions of Canada. A vast amount of information was assembled and studied, and in 1922 the Commission recommended the establishment of experimental herds of reindeer in locations to be selected.

Following up the recommendations of the Royal Commission, the Canadian Government undertook an extensive investigation to ascertain if areas in northern Canada would be suitable for reindeer pasturage, and in April, 1926, a botanist experienced in Arctic travel was appointed to conduct the survey. Prior to the study of the Canadian range, the investigator and an assistant visited Alaska to observe the conditions under which reindeer were herded. A survey of the grazing possibilities of the area lying between the Yukon-Alaska boundary on the west, Coppermine River on the east, Great Bear Lake on the south and the Arctic Ocean on the north was made in the years 1926-28.

The report of the investigations showed that conditions in some parts of the region examined were very suitable for the maintenance of reindeer. Two separate areas, one situated between the Alaska-Yukon Boundary and Franklin Bay, and the other north of Great Bear Lake, were estimated to be capable of supporting several thousand head.

Steps were accordingly taken to arrange for the delivery, by an Alaskan reindeer company, of 3,000 reindeer to a selected range near the mouth of the Mackenzie River. The selection of the stock for the drive was made in Alaska by the investigator mentioned. The animals numbered about 3,400 head. The greater proportion was does, with some 300 bucks and about 250 steers for food and draught purposes. The herd was assembled near the head of Kotzebue Sound in December, 1929. The movement was in charge of a veteran Lapp reindeer herder, assisted by other Lapps and several Eskimos. Supplies were drawn on sleds by reindeer, and dog teams were also used for this purpose.

No. 87. Tues. Dec. 26, 1944 -- Drive of Reindeer from Alaska to Mackenzie Delta

The drive of the vast reindeer herd, noted in the preceding item proved to be an epic in the annals of northern travel. The route selected was northeasterly across the Brooks Mountains to the head-waters of Etivluk River, down Etivluk and Colville Rivers to the Arctic Coast, and thence eastward to the delta of the Mackenzie.

The vendors, who had undertaken the responsibility of delivering the deer, experienced difficulties from the start. The homing instinct of the reindeer became apparent, and many broke away and were not recovered. Blizzards, intense cold, attacks by wolves and the presence of other reindeer and caribou impeded progress.

The following spring the drive was halted for the fawning season, and for the remainder of the summer the herd grazed and rested. As the trek continued losses were recouped to some extent by the yearly crop of fawns. The deer arrived in Canadian territory in the spring of 1933.

An attempt to cross the Mackenzie River Delta in the winter of 1933-34 was unsuccessful because of unsuitable weather and ice conditions, and the delivery of the herd was not made until March, 1935. The total number of deer delivered was 2,370, made up of 1,498 does, 611 bucks, and 261 steers. Of this number, it was estimated that less than twenty per cent was original stock that left the Alaskan range in 1929.

No. 88. Wed. Dec. 27, 1944 -- Choice of Reindeer Reserve and Establishment of Herd

In anticipation of the delivery of the reindeer, preparations had been made in 1930-31 for their receiption on the new range. A corral was constructed at Kittigazuit on the Arctic Coast east of the Mackenzie Delta, and a headquarters for the reindeer staff was established about sixty miles inland on the east branch of the Mackenzie River. At this point buildings for the accommodation of the employees, and warehouses, were constructed. Facilities for radio communication were later installed. The reindeer station lies at the foot of the Caribou Hills which follow the course of the Mackenzie River and attain an elevation of 500 feet.

Three Lapp herders and their families were brought from Norway in 1931 to assist in handling the deer on arrival and in training native Eskimos as herders. In the later stages of the reindeer drive from Alaska, these Lapps furnished valuable assistance. In December, 1933, the Canadian Government established a Reindeer Reserve immediately east of the Mackenzie Delta. The Reserve contains an area of approximately 6,600 square miles, including summer and winter ranges. The summer range comprises the coastal area, including Richards Island, and is well supplied with shrubs, principally willows, and grasses. The winter range lies inland along the east channel of the Mackenzie River, extending north-easterly along Sitidgi Lake and the Eskimo Lakes, and supports a good growth of reindeer lichens, which constitute the main winter diet of the reindeer.

During the first summer on the Reserve, the reindeer grazed in the coastal area in the vicinity of the corral at Kittigazuit. A round-up and count of the deer made in the summer of 1933 showed that the herd had been increased by about 800 fawns. By early winter the herd had been moved inland to the winter range in the vicinity of the reindeer station, and the following spring it was taken to Richards Island. This island, which lies a short distance off the coast, has proved very suitable for summer grazing, and has been used for that purpose each succeeding year. The corral for the round-up of the main herd is now located on Richards Island.

Since the introduction of the reindeer to the reserve in Canada, excellent results have been obtained. Annual crops of healthy fawns have steadily increased the main herd, permitting the establishment of two additional herds under native management near Anderson and Horton Rivers, about 150 miles east of the Reserve. The total increase of the reindeer since the original herd was delivered has exceeded 12,000 head, and according to the latest reports the three existing herds now number more than 9,000 animals. The difference is accounted for by donations of meat to mission schools and hospitals in the Mackenzie Delta region; animals used for food and clothing by the reindeer staff, including herders and apprentices; sales of surplus meat to natives and residents of the vicinity; strays; and losses by natural causes.

No. 89. Thurs. Dec. 28, 1944 -- Training of Native Herders

Since the primary purpose of the reindeer industry in Canada is to help the natives support themselves, the policy is to train young Eskimos and Indians in reindeer husbandry and build up a number of herds under native management at suitable locations. The main herd is maintained on the Reindeer Reserve as a nucleus for the establishment of additional herds to be managed by the natives. Steps have been taken from the outset of the experiment to interest young natives to train as apprentice herders, and while in training they assist experienced herders in handling the reindeer. A number of apprentices or helpers are maintained with the main herd and

the native herds where they receive training which may qualify them eventually for the management of reindeer herds on their own account.

Native Herd No. 1 was formed in December, 1938, by the separation of about 950 deer from the main herd and their transfer to an area in the vicinity of Anderson River. These animals were placed in charge of two Eskimos, father and son. The latter had received several years of training as an apprentice herder on the Reserve, and the father was owner of a schooner necessary for the transfer of families and supplies. The agreement covering the transfer of the deer provides that when the new herd has sufficiently increased in size, a number of deer equal to the animals supplied shall be returned. The deer so returned may constitute the basis of another native herd.

In December, 1940, Native Herd No. 2 was established by separating 825 reindeer from the main herd and driving them to a location near Horton River, which lies east of Anderson River. These deer likewise were entrusted to two Eskimos, one of whom had trained as an apprentice herder on the Reserve. The other was in possession of a schooner. During the period in which these native herds are being built up, the natives in charge are allowed to take any animals required from surplus stock for their own use as food or clothing, in addition to a reasonable number to be used for the sale of meat or other products. On the return of deer equal to the number received on loan, the remaining deer will become the exclusive property of the natives in charge with the proviso that no live deer shall be disposed of to white men.

It has been the practice to hold a round-up of the main herd on Richards Island about the end of July, and a count made in 1943 placed the number of deer at 6,057 head. Round-ups of Native Herd No. 1 have been held at corrals on Nicholson Island at the mouth of Anderson River, and the 1943 return showed that the herd contained 2,104 deer. Corrals have not yet been constructed in the vicinity of Native Herd No. 2, but the number of deer was estimated in 1943 at 1,070.

No. 90. Fri. Dec. 29, 1944 -- Routine of Reindeer Management

The routine of the reindeer management on the Reserve commences in the spring with the movement of the main herd from the winter range to the summer range on Richards Island, where fawning begins about the tenth of April and extends into June. This period is followed by the movement of the deer to the northern part of of the Island, where the winds on the Arctic headland disperse insect pests. Later the deer are moved to the corralling grounds. Round-up operations may be completed within four or five days if weather conditions are suitable. Following the round-up, the reindeer continue to graze on the summer range until transferred to the mainland, either by swimming in September, or by driving over the ice in the early winter. The slaughter of surplus stock occurs at different times. An autumn slaughter is held about the end of September and a winter slaughter about the end of November. In addition, some animals may be taken for meat in March when the herd passes the main station on the way from the winter range to Richards Island.

The annual round-up on the summer range is probably the most interesting event to occur on the Reindeer Reserve. The round-up affords an opportunity to balance the herd in relation to breeding stock and to select deer for slaughter later in the season. The animals are corralled, examined individually for condition, marked and counted. The round-up also provides an opportunity to demonstrate the handling of reindeer in large numbers, and the natives of the region who assemble for the occasion take a keen interest in the activities. The official

count taken at this time shows the surviving fawn increase for the year. The young animals and those that escaped corralling the previous year are given a distinguishing herd mark on the ear. Distinctive marks are made for each herd. The marking of the ear is an old established practice in the reindeer industry and owing to the thinness of a reindeer's skin is preferred to branding.

An important development in February, 1943, was the slaughter of about 300 animals of meat stock from Native Herd No. 1 and the sale of this meat to residents of the Aklavik area where there was a meat shortage. This sale provided a substantial income for the natives in charge of the herd. Reindeer meat has a fine grain and a distinctive flavour, is palatable and easily digested. If properly handled, the meat when cooked is juicy, tender, and free from gamy flavour. In some northern countries reindeer are used for transportation purposes by nomadic peoples who depend on these animals for subsistence. In the Canadian herds a number of steers broken to harness are maintained for such purposes as moving the herd camp, hauling firewood, and transferring the herders' families, baggage, and supplies between winter and summer ranges. Although sled deer are very useful under conditions where their natural food is obtainable en route, it is unlikely that they will replace dog teams for winter sled trips in the Canadian north.

No. 91. Sat. Dec. 30, 1944 -- Characteristics of the Reindeer

Domesticated reindeer and wild caribou have somewhat similar physical characteristics and have been classified in the same genus of the deer family. They differ from other species of the deer family in that both sexes have horns. These they shed annually. The caribou range over a wide area in their migration but reindeer can be maintained within a comparatively limited area and are thus available when required. Reindeer also become attached to their home range and it was observed that as the older animals of the Canadian herd were replaced by younger stock, the tendency of the deer to return to their former Alaskan range disappeared. There is, however, an inclination on the part of the animals removed from the main herd to return to the area in which they were born.

Reindeer in Canada and Alaska are usually brown and grey in colour. The neck and shoulders are greyish white, with darker shades on the back, abdomen, and hind quarters. The legs are almost black. The head is dark, and the mane, which becomes long in winter, is almost white. White and spotted deer are not uncommon. A full-grown reindeer stands from 42 to 44 inches high and measures about seven feet from nose to tip of tail. The average dressed weight of steers in Canadian herds is now about 170 pounds, and that of aged does, 140 pounds.

As observed in North America, reindeer are considered to have some of the traits of sheep, cattle and horses. They are gregarious like sheep, graze somewhat like cattle, and in intelligence and activity more nearly resemble the horse. They prefer to travel facing the wind, have no difficulty in swimming a river or small lake when necessary, and are responsive to control by herders and their dogs. They tend to become wild only when herding and round-ups are neglected. Reindeer when disturbed form a compact body and rotate in a limited area. This movement is known as "milling", and in the Canadian herds the deer move in a counter-clockwise manner. This movement, clockwise or counter-clockwise, has an important bearing on corral construction.

The form of herding practised on the Canadian range requires the presence of herders with the reindeer at all times. Each herd, which is distincively marked, is maintained in a separate location. This is known as "close herding", in contrast

with "open herding" which is followed to some extent in Alaska where reindeer with different markings roam together over the range and are counted at a general round-up in which the various owners take part.

Meat for food is the principal product of the industry. The hides of fawns are used for parkas, and hides of mature animals, when tanned, are suitable for articles of clothes and other purposes. Experiments in tanning are being made and the methods used by the Indians are also being studied, so that surplus hides may be utilized to the best advantage for local use and to supply any markets for these products. With the development of the industry in Canada it is hoped that uses can be found for other reindeer products such as hair, hooves, sinews, etc.

No. 92. Sun. Dec. 31, 1944 -- Administration of Reindeer Husbandry

Canada's experiment in reindeer husbandry is under the direction of the Northwest Territories Administration of the Department of Mines and Resources at Ottawa. Inspection of the herds are made from time to time by officers of the Department and others qualified to observe progress and recommend measures that will ensure the health of the animals. Dr. Seymour Hadwen, internationally-known authority on reindeer and other animal life, made an inspection of the main herd in 1939 and reported the deer to be in excellent condition and practically free of parasites. A gradual increase in the dressed weight of slaughtered steers also indicated the health and vigour of the reindeer.

The Administration is undertaking further investigation in order to define suitable locations for the establishment of additional herds. These will involve preliminary reconnaissance and botanical examination of the ground in regions where reindeer husbandry would be desirable, so that the forage available may be determined. It is becoming increasingly apparent that the scientific study of husbandry is essential to ensure the development of reindeer herding in the best interests of the natives.

As the industry is visualized at present, reindeer should provide a convenient and dependable source of food and clothing and form a valuable reserve against periods of shortage in other necessaries. As the natives learn to depend more on the herds of reindeer for subsistence they may become independent of fluctuations in the supply of game and the price of furs, and thus achieve a more stable economic life than is possible under ordinary conditions which govern their nomadic life along the Arctic coast of Canada.
