

32-203 (7)

STATISTICS STATISTIQUES
CANADA CANADA
AUG 18 1987
LIBRARY
BIBLIOTHÈQUE

CANADA
DEPARTMENT OF TRADE AND COMMERCE
DOMINION BUREAU OF STATISTICS
CENSUS OF INDUSTRY

REPORT
on the
BREAD & OTHER BAKERY^{Products} INDUSTRY
in
CANADA
1926



+++

Published by authority of the Hon. James Malcolm, M. P.,
Minister of Trade and Commerce

+++

OTTAWA
1928



32-503-28

NOTE.- The statistics published in the present statement include only the statistics of such manufacturing establishments as make Bread, Pastry etc., as their principal product. The statistics relating to specific products are therefore not to be regarded as comprehensive, as products like, bread, buns, pies, cakes and puddings are also found as secondary products of other industries such as Biscuits and confectionery.

(See summary table, page 2.)

CANADA
DEPARTMENT OF TRADE AND COMMERCE
DOMINION BUREAU OF STATISTICS
CENSUS OF INDUSTRY

Dominion Statistician: R. H. Coats, B.A., F.S.S. (Hon.), F.R.S.C.
Chief, Census of Industry: J. C. Macpherson

THE BREAD AND BAKERY PRODUCTS INDUSTRY IN CANADA, 1926.

Ottawa, March 25th, 1928. The annual report on the Baking Industry in Canada for the calendar year 1926 is herewith presented. This report is distinct from the Biscuit and Confectionery industry and yet similar items of production appear in both reports so that in order that a complete and comprehensive survey of the industry may be obtained a study of both reports will be found necessary. A subsequent paragraph under the head of "Production" deals specifically with this feature.

The number of individual establishments reporting to the Bureau during the year was 2,214, an increase of 38 over the previous year as will be seen from the following table showing the location of the various plants by provinces for the calendar years 1925 and 1926.

Location of Plants by provinces, 1925 and 1926.

| Province | 1925 | 1926 | + | Increase and - Decrease |
|----------------------------|--------------|--------------|----------|----------------------------|
| Prince Edward Island | 6 | 6 | + | - |
| Nova Scotia | 49 | 61 | + | 12 |
| New Brunswick | 45 | 44 | - | 1 |
| Quebec | 740 | 764 | + | 24 |
| Ontario | 877 | 890 | + | 13 |
| Manitoba | 94 | 92 | - | 2 |
| Saskatchewan | 96 | 85 | - | 11 |
| Alberta | 116 | 110 | - | 6 |
| British Columbia and Yukon | 153 | 162 | + | 9 |
| Totals for Canada | 2,176 | 2,214 | + | 38 |

Comparative Statistics.

Comparative statistics of the industry are shown by principal items in the following summary table for the calendar years 1925 and 1926 for the Dominion and the provinces. The number of establishments reporting for the whole of Canada increased by almost 1.8 per cent, capital investment by 10.6 per cent, the number of persons employed by 7.6 per cent, salaries and wages paid by nearly 6.1 per cent, the cost of materials by 3.6 per cent, and the value of products by 4.2 per cent. The provinces showing increases in all items of the table were in order, Nova Scotia, Ontario and Br. Columbia, whilst the remaining provinces show decreases in respect to one or more of the items included in the table.

PRINCIPAL STATISTICS OF THE BAKING INDUSTRY IN CANADA, BY PROVINCES, 1925 and 1926.

| Provinces | Estab- lish- ments Report. | Capital Invested | Emloy- ees | Salaries and Wages | Cost of Materials | Value of Products |
|----------------------|-------------------------------------|---------------------|---------------|--------------------------|----------------------|----------------------|
| | 1925 No. | \$ | 1925 No. | \$ | \$ | \$ |
| CANADA | 2,176 | 33,810,501 | 12,438 | 13,825,401 | 31,795,203 | 60,392,439 |
| P.E. Island | 6 | 57,642 | 22 | 16,374 | 55,859 | 101,197 |
| Nova Scotia | 49 | 512,647 | 217 | 187,888 | 584,021 | 1,035,485 |
| New Brunswick | 45 | 510,667 | 206 | 213,169 | 615,018 | 1,020,526 |
| Quebec | 740 | 10,962,216 | 3,852 | 4,010,426 | 9,106,802 | 17,776,097 |
| Ontario | 877 | 13,459,466 | 5,886 | 6,720,214 | 15,438,996 | 26,552,332 |
| Manitoba | 94 | 1,812,054 | 659 | 779,356 | 1,599,873 | 3,303,467 |
| Saskatchewan | 96 | 1,210,027 | 345 | 422,321 | 862,835 | 1,785,181 |
| Alberta | 116 | 1,424,502 | 485 | 558,681 | 1,250,665 | 2,523,276 |
| Br. Columbia & Yukon | 153 | 1,861,230 | 766 | 976,972 | 2,221,074 | 4,234,878 |
| 1926 | | | | | | |
| CANADA | 2,214 | 37,416,979 | 13,389 | 14,732,139 | 32,928,065 | 62,920,009 |
| P.E. Island | 6 | 59,133 | 24 | 15,900 | 67,062 | 120,149 |
| Nova Scotia | 61 | 631,859 | 302 | 256,951 | 791,551 | 1,475,993 |
| New Brunswick | 44 | 547,366 | 218 | 225,536 | 665,533 | 1,206,287 |
| Quebec | 764 | 11,647,553 | 4,041 | 4,165,919 | 9,356,208 | 17,567,988 |
| Ontario | 890 | 17,156,580 | 6,347 | 7,295,259 | 15,753,267 | 30,125,253 |
| Manitoba | 92 | 1,795,324 | 728 | 745,362 | 1,571,379 | 3,174,424 |
| Saskatchewan | 85 | 1,256,063 | 358 | 431,720 | 960,033 | 1,850,207 |
| Alberta | 110 | 1,551,171 | 502 | 502,413 | 1,333,173 | 2,816,547 |
| Br. Columbia & Yukon | 162 | 2,771,430 | 869 | 1,087,079 | 2,429,709 | 4,583,161 |

THE BREAD AND BAKERY PRODUCTS INDUSTRY IN CANADA, 1926.

Size of Establishments

In view of the tendency towards concentration in industrial enterprises a series of tables has been prepared presenting in a threefold way the size of establishments in the Baking industry measured by (a) capital investment, (b) gross value of production and (c) employment, all within certain specified groups or limitations for the calendar years 1925 and 1926. The tables further indicate the movement in capital, production and employment within the industry.

In 1925 the number of establishments reporting was 276 with a total capital investment of \$33,810,501, a total gross value of output or production of \$60,392,439 and a total employment of 12,438. Of the total number of establishments nine had a capital investment of \$7,333,242 or 21.7 per cent of the total investment and an average investment of \$814,805. In gross value of output sixteen establishments had \$16,388,436 or 27.1 per cent of the total output and an average output per establishment of \$1,024,027. In employment fourteen plants had 2,866 persons on the payrolls of 23 per cent of the total employment and an average employment of 205 per establishment.

In 1926 the number of establishments reporting was 2,214 with a total capital investment \$37,416,979, a total gross value of output of \$62,920,009 and a total employment of 13,889. Of the total number of establishments eleven had a capital investment of \$8,648,478 or 23.1 per cent of the total investment, with an average investment of \$786,225 per establishment. In gross value of production seventeen establishments had a total production of \$16,583,643 or 26.3 per cent, the total output of the industry and an average output per establishment of \$975,508. In employment seventeen establishments had a total payroll of 3,269 or 23.6 per cent of the total number employed and an average employment of 192 per establishment.

Size of Establishments by groups of Capital investment, Value of Output and Employment, 1925 and 1926.

| (a) Groups of Capital Investment | 1925 | | | 1926 | | |
|----------------------------------|--------------------|------------|--------------------------------------|--------------------|------------|--------------------------------------|
| | Establishments No. | Capital \$ | Average Capital per Establishment \$ | Establishments No. | Capital \$ | Average Capital per Establishment \$ |
| Under \$50,000 | 2,089 | 14,330,525 | 6,860 | 2,121 | 16,527,217 | 7,792 |
| \$50,000 to under \$100,000 | 39 | 2,762,120 | 70,824 | 37 | 2,633,599 | 71,178 |
| \$100,000 to under \$200,000 | 17 | 2,310,944 | 135,938 | 27 | 3,613,369 | 133,829 |
| \$200,000 " " \$500,000 | 22 | 7,073,670 | 321,530 | 18 | 5,994,316 | 333,017 |
| \$500,000 " " \$1,000,000 | 6 | 3,825,462 | 637,577 | 7 | 4,395,699 | 627,957 |
| \$1,000,000 and over | 3 | 3,507,780 | 1,169,260 | 4 | 4,252,779 | 1,063,195 |
| Totals | 2,176 | 33,810,501 | 15,538 | 2,214 | 37,416,979 | 16,901 |

| (b) Groups of Values of Output | 1925 | | | 1926 | | |
|--------------------------------|--------------------|--------------------|-------------------------------------|--------------------|--------------------|-------------------------------------|
| | Establishments No. | Value of Output \$ | Average Output per Establishment \$ | Establishments No. | Value of Output \$ | Average Output per Establishment \$ |
| Under \$50,000 | 2,007 | 24,828,789 | 12,371 | 2,021 | 25,114,130 | 12,427 |
| \$50,000 to under \$100,000 | 91 | 6,403,451 | 70,368 | 109 | 7,691,737 | 70,566 |
| \$100,000 " " \$200,000 | 40 | 6,164,795 | 154,120 | 41 | 6,012,489 | 146,646 |
| \$200,000 " " \$500,000 | 22 | 6,606,968 | 300,317 | 26 | 7,518,010 | 289,154 |
| \$500,000 " " \$1,000,000 | 10 | 7,258,661 | 725,866 | 11 | 8,228,293 | 748,027 |
| \$1,000,000 and over | 6 | 9,129,775 | 1,521,629 | 6 | 8,355,350 | 1,392,559 |
| Totals | 2,175 | 60,392,439 | 27,754 | 2,214 | 62,920,009 | 28,419 |

| (c) Groups of Employment | 1925 | | | 1926 | | |
|--------------------------|--------------------|----------------------|--|--------------------|----------------------|--|
| | Establishments No. | Persons Employed No. | Average persons employed per Establishment | Establishments No. | Persons Employed No. | Average Persons employed per Establishment |
| Under 20 persons | 2,084 | 6,392 | 3.07 | 2,115 | 7,514 | 3.56 |
| 20 but under 50 | 57 | 1,685 | 29.56 | 66 | 1,981 | 30.00 |
| 50 but under 100 | 21 | 1,495 | 71.19 | 16 | 1,125 | 70.31 |
| 100 but under 200 | 9 | 1,394 | 154.89 | 10 | 1,443 | 144.30 |
| 200 but under 500 | 5 | 1,472 | 294.40 | 7 | 1,321 | 260.14 |
| 500 and over | - | - | - | - | - | - |
| Totals | 2,176 | 12,438 | 5.71 | 2,214 | 13,889 | 6.27 |

Production Statistics.

The statistics of production in Table 1 of this report refer only to the Baking Industry and are presented by items for Canada and the provinces during the calendar year 1926. The production of bread rose from 754,618,565 pounds in 1925 to 819,205,502 pounds in 1926, an increase of 64,586,937 pounds or 8.56 per cent. In the production of buns there was an increase in value of \$706,301 and in pies, cakes and pastry of \$1,317,541, whilst puddings show a decrease in value of production of \$22,419. Biscuits, plain and fancy, made in baking establishments decreased from 249 tons worth \$110,976 in 1925 to 238 tons of the value of \$107,424 in 1926, a decrease in the quantity produced of 4.4 per cent and in value of more than 3.2 per cent. Confectionery made in baking establishments also shows a large decrease both in quantity and in value of production, the former having fallen from 793,987 pounds in 1925 to 291,862 pounds in 1926, and the latter from \$204,493 in 1925 to \$87,955 in 1926. Ice cream production shows a decrease of 15,043 gallons or 20 per cent and a decrease in value of \$20,608 or a little more than 18.6 per cent. All other products fell from \$1,484,475 in 1925 to \$668,879 in 1926 or nearly 55 per cent.

The following table shows the total production for the Baking, Biscuit and Confectionery industries for the calendar year 1926 for 8 of the principal items of production.

| Items | Made in Bakeries | | Made in biscuit and confectionery establishments | | Total Production | |
|--------------------------|------------------|------------|--|------------|------------------|-------------|
| | Quantity | Value | Quantity | Value | Quantity | Value |
| Bread | Lb. 819,205,502 | 50,438,458 | 4,526,708 | 328,964 | 823,732,210 | 50,767,422 |
| Buns | - | 2,521,934 | - | 76,125 | - | 2,598,059 |
| Pies, cakes, etc. | - | 8,894,184 | - | 664,269 | - | 9,558,453 |
| Puddings | - | 110,827 | - | 19,716 | - | 130,543 |
| Biscuits, plain, etc. | ton 238 | 107,424 | 42,289 | 14,802,404 | 42,527 | 14,909,828 |
| Confectionery, all kinds | lb. 291,862 | 87,955 | 100,610,748 | 26,265,709 | 100,902,610 | 26,353,264 |
| Ice cream | gal. 57,888 | 90,348 | 2,130,281 | 3,035,486 | 2,188,169 | 3,125,834 |
| All other products | - | 668,879 | - | 3,986,563 | - | 4,655,442 |
| Total value | - | 62,920,009 | - | 49,178,836 | - | 112,098,845 |

The per capita consumption of "bakers bread" on an estimated population of 9,390,000 in 1926, was 87.7 pounds as compared with 81.9 pounds in 1925. A table showing the per capita consumption of biscuits, confectionery and ice cream is given in the report on that industry and is here repeated for the calendar years 1924, 1925 and 1926 by quantity and value.

| Items | 1924 | | 1925 | | 1926 | |
|--------------------------|-----------|-------|----------|-------|----------|-------|
| | Quantity | Value | Quantity | Value | Quantity | Value |
| Biscuits | Lb. 8.09 | 1.47 | 8.51 | 1.53 | 9.27 | 1.60 |
| Confectionery, all kinds | Lb. 10.66 | 2.87 | 11.46 | 2.96 | 11.56 | 3.02 |
| Ice cream | gal. .60 | .81 | .63 | .86 | .72 | 1.00 |

The weight of a loaf of bread throughout the Dominion is not standardized but is regulated by municipal by-laws in the various provinces, except in Ontario where under R.S.O. ch. 224 the standard weight of the loaf is fixed at 24 and 48 ounces, except that in the case of "small bread" the limit is fixed at 12 ounces. According to information collected by the Bureau of Statistics the average weight of a loaf in the provinces may be stated as follows:

- P.E. Island, Nova Scotia and New Brunswick at 1½ pounds or 24 oz.
- Quebec, in certain municipalities at 1½ pounds or 24 ounces, while in the remaining parts of the province it is variously stated at 4, 5 and 6 pounds.
- Ontario at 24 and 48 ounces except in the case of "small bread."
- Manitoba generally at 16 and 20 ounces except in outlying portions of the province where it is stated at 3 pounds.
- Saskatchewan, Alberta and British Columbia report 16, 18 and 20 ounces as the average weight of the loaf which is regulated by municipal by-laws.

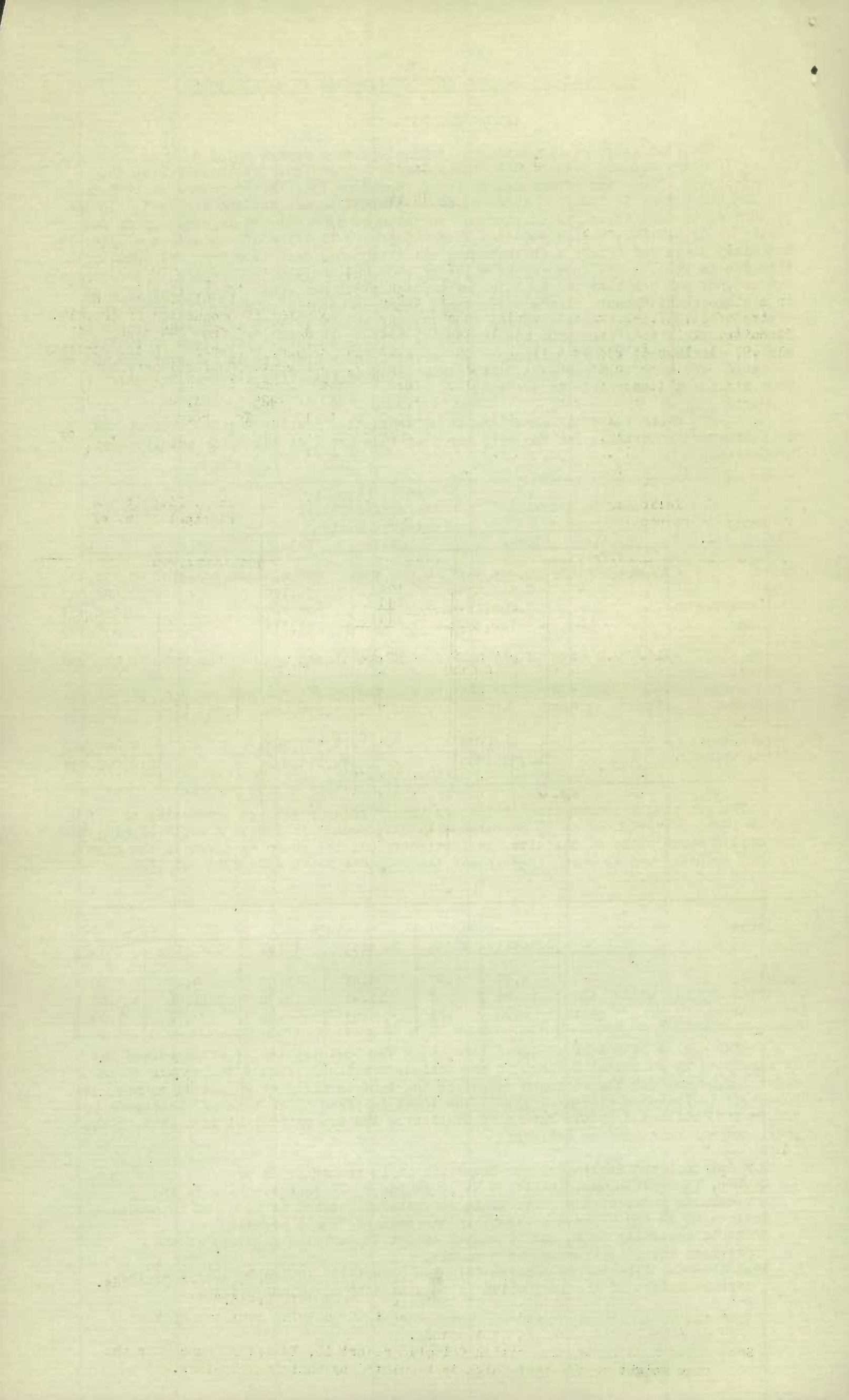
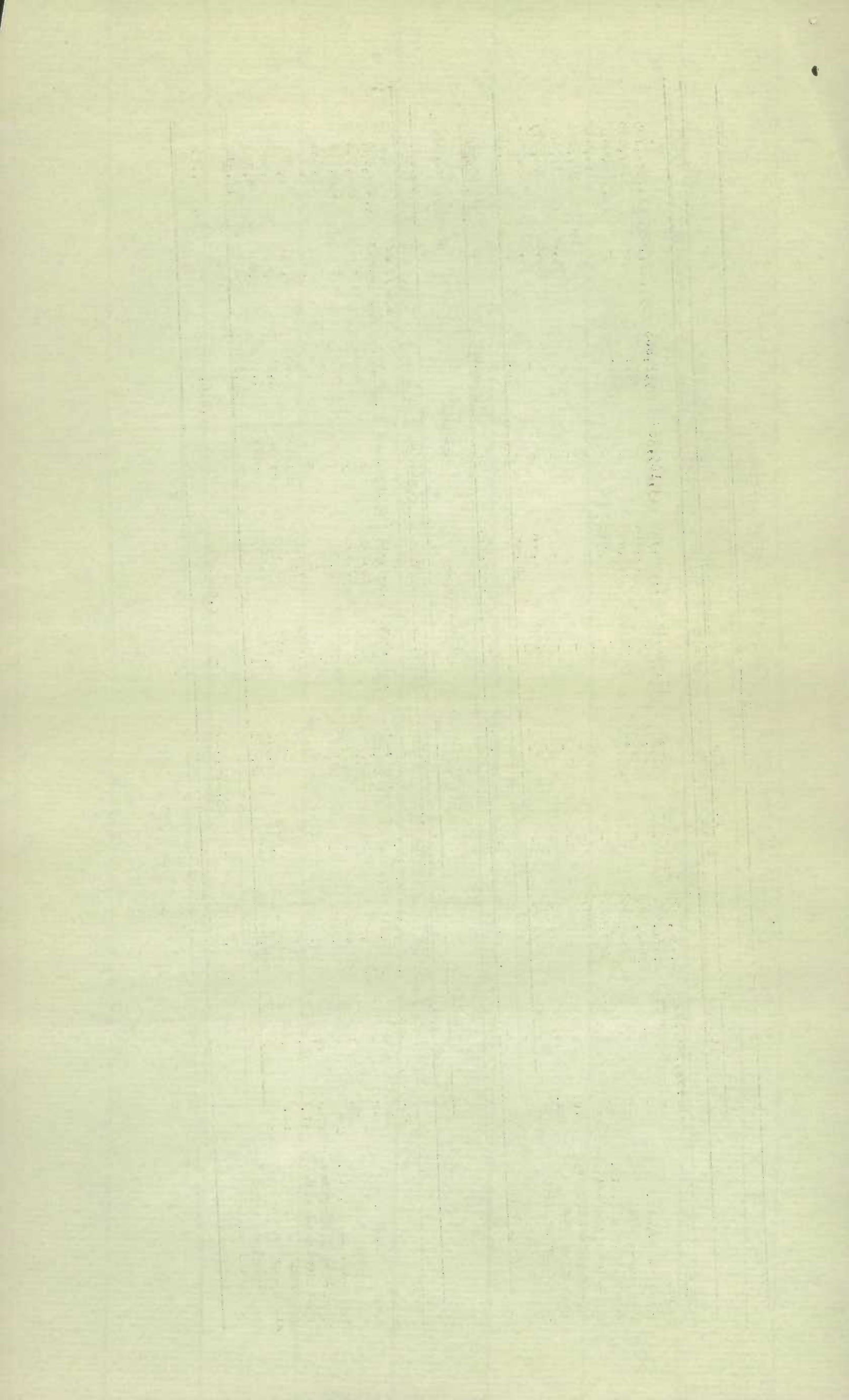


Table 1. Production of Bread and Other Bakery Products by provinces,
1926

| | CANADA | | P.E. ISLAND | | NOVA SCOTIA | | NEW BRUNSWICK | | QUEBEC | |
|-------------------------|---|------------|-------------|-----------|--------------|-----------|---------------|-----------|-------------------------------------|------------|
| | Quantity | Value | Quantity | Value | Quantity | Value | Quantity | Value | Quantity | Value |
| Bread | 778,705,582 Lb. 817,205,502 | 50,438,458 | 1,321,033 | 92,505 | 17,092,173 | 1,194,708 | 13,165,385 | 958,888 | 253,217,083 | 14,982,785 |
| Buns | - | 2,521,934 | - | 11,710 | - | 24,164 | - | 27,956 | - | 437,048 |
| Pies, cakes, etc. | - | 8,894,184 | - | 15,922 | - | 227,403 | - | 217,013 | - | 1,966,001 |
| Puddings | - | 110,827 | - | 12 | - | 823 | - | 396 | - | 10,042 |
| Biscuits, plain, etc. | ton 238 | 107,424 | - | - | - | - | - | - | 238 | 107,424 |
| Chocolate confectionery | lb. 170,153 | 51,785 | - | - | - | - | - | - | 79,287 | 21,364 |
| Sugar confectionery | lb. 121,709 | 36,170 | - | - | - | - | - | - | 36,089 | 10,959 |
| Ice Cream | gal. 57,888 | 90,348 | - | - | 1,350 | 2,470 | - | - | 7,602 | 14,563 |
| All other products | - | 668,679 | - | - | - | 26,425 | - | 2,034 | - | 17,802 |
| Total Value | - | 62,920,009 | - | 120,149 | - | 1,475,993 | - | 1,206,287 | - | 17,567,988 |
| | Ontario | | Manitoba | | Saskatchewan | | Alberta | | British Columbia | |
| | Quantity | Value | Quantity | Value | Quantity | Value | Quantity | Value | Quantity | Value |
| Bread | lb. 345,245,043 | 23,239,831 | 42,734,679 | 2,717,348 | 21,715,908 | 1,542,106 | 31,934,535 | 2,314,780 | 52,279,663 92,779,663 | 3,396,257 |
| Buns | - | 1,627,158 | - | 84,845 | - | 65,374 | - | 99,112 | - | 144,567 |
| Pies, cakes, etc. | - | 4,566,227 | - | 315,862 | - | 222,771 | - | 364,414 | - | 998,571 |
| Puddings | - | 25,524 | - | 50,676 | - | 1,275 | - | 8,448 | - | 13,631 |
| Biscuits, plain, etc. | ton - | - | - | - | - | - | - | - | - | - |
| Chocolate confectionery | lb. 52,873 | 19,379 | 300 | 180 | 28,800 | 7,790 | 4,361 | 1,850 | 4,532 | 1,222 |
| Sugar confectionery | lb. 72,583 | 20,625 | 800 | 180 | 900 | 325 | 4,652 | 1,451 | 6,685 | 2,630 |
| Ice Cream | Gal. 32,646 | 46,817 | 2,079 | 2,972 | 5,510 | 9,885 | 2,895 | 4,672 | 5,806 | 8,972 |
| All other products | - | 580,445 | - | 2,361 | - | 681 | - | 21,820 | - | 17,311 |
| Total value | - | 30,125,253 | - | 3,174,424 | - | 1,850,207 | - | 2,816,547 | - | 4,583,161 |



Capital Invested

Capital invested in the baking industry is shown in Table 2 by items and provinces for the calendar year 1926. A further division shows fixed capital as distinct from working capital. Fixed capital comprising land, buildings, fixtures, machinery and tools totalled \$26,800,082 in 1925 as against \$29,928,435 in 1926, an increase over the preceding year of \$3,128,353 or 11.67 per cent. Working capital made up of materials, supplies and stocks on hand together with cash, trading and operating accounts etc. totalled \$7,488,544 as against \$7,010,419 the previous year an increase of \$478,125 or 6.8 per cent.

Apportioned by provinces Ontario leads in invested capital with 45.85 per cent of the total, Quebec being second with 31.13 per cent and the remaining provinces following in the order named: British Columbia 7.4, Manitoba 4.8, Alberta 4.15, Saskatchewan 3.36, and the Maritime Provinces 3.3 per cent.

Table 2.- Capital invested in the Baking Industry by items and provinces, 1926.

| Provinces | Fixed Capital | | Working Capital | | Total Capital |
|----------------------|--|--|---|--|---------------|
| | Land, buildings, fixtures, machinery and tools | | Materials, supplies, and stocks on hand | Cash, trading and operating accounts, etc. | |
| | \$ | | \$ | \$ | \$ |
| CANADA | 29,928,435 | | 3,231,950 | 4,256,594 | 37,416,979 |
| P. E. Island | 44,462 | | 9,613 | 5,058 | 59,133 |
| Nova Scotia | 460,250 | | 77,513 | 94,096 | 631,859 |
| New Brunswick | 371,375 | | 65,400 | 110,591 | 547,366 |
| Quebec | 9,439,931 | | 1,044,637 | 1,162,985 | 11,647,553 |
| Ontario | 14,056,192 | | 1,385,418 | 1,714,970 | 17,156,580 |
| Manitoba | 1,427,791 | | 113,176 | 254,857 | 1,795,824 |
| Saskatchewan | 849,311 | | 115,299 | 291,453 | 1,256,063 |
| Alberta | 1,202,095 | | 126,926 | 222,150 | 1,551,171 |
| Br. Columbia & Yukon | 2,077,028 | | 293,968 | 400,434 | 2,771,430 |

Employment Statistics

Statistics relating to employment during the calendar year 1926 are presented in Tables 3, 4 and 5. Table 3 gives the number of persons employed during the year by sex and remuneration for the Dominion and for each of the provinces. The total amount paid for salaries in 1926 shows an increase of \$18,539, whilst wages increased by \$828,199 making an net increase in the payments for salaries and wages over 1925 of \$846,738, or 6.1 per cent. The number of persons employed whether on salaries or wages increased by 951 during the period, whilst the average payment per employee rose from \$1,123 in 1923 to \$1,133 in 1924, but falling to \$1,116 in 1925 and in 1926 to \$1,100. Ontario and Quebec gave employment to over 77 per cent of all engaged in the industry and also account for 77 per cent of the total payments for salaries and wages.

Table 3.- Employees, Salaries and Wages by provinces, 1926.

| Provinces | Number of Salaried Employees | | | Number of Wage-earners | | | Total Employees | | |
|------------------------|------------------------------|--------|---------------|------------------------|--------|------------|-----------------|--------|--------------------|
| | | | Salaries paid | | | Wages Paid | | | Salaries and Wages |
| | Male | Female | | Male | Female | | Male | Female | |
| | No. | No. | \$ | No. | No. | \$ | No. | No. | \$ |
| CANADA | 549 | 239 | 1,258,897 | 11,059 | 1,542 | 13,473,242 | 11,608 | 1,781 | 14,732,139 |
| P.E. Island | 1 | 1 | 1,500 | 18 | 4 | 14,400 | 19 | 5 | 15,900 |
| Nova Scotia | 11 | 11 | 24,242 | 234 | 46 | 232,709 | 245 | 57 | 256,951 |
| New Brunswick | 6 | 5 | 21,281 | 165 | 42 | 204,255 | 171 | 47 | 225,536 |
| Quebec | 82 | 38 | 181,874 | 3,668 | 253 | 3,984,045 | 3,750 | 291 | 4,165,919 |
| Ontario | 211 | 113 | 532,918 | 5,170 | 853 | 6,762,341 | 5,381 | 966 | 7,295,259 |
| Manitoba | 113 | 28 | 187,627 | 524 | 63 | 557,735 | 637 | 91 | 745,362 |
| Saskatchewan | 22 | 6 | 61,299 | 289 | 41 | 370,421 | 311 | 47 | 431,720 |
| Alberta | 27 | 16 | 76,557 | 380 | 79 | 431,856 | 407 | 95 | 508,413 |
| Br. Columbia and Yukon | 76 | 21 | 171,599 | 611 | 161 | 915,480 | 687 | 182 | 1,087,079 |

Table 1

Initial investment in the industry is shown in Table 1. The industry is shown to have a high initial investment, which is consistent with the high initial investment in the industry. The initial investment is shown to be high, which is consistent with the high initial investment in the industry.

Table 1. Initial investment in the industry.

| Year | Investment | Investment | Investment |
|------|------------|------------|------------|
| 1970 | 100 | 100 | 100 |
| 1971 | 100 | 100 | 100 |
| 1972 | 100 | 100 | 100 |
| 1973 | 100 | 100 | 100 |
| 1974 | 100 | 100 | 100 |
| 1975 | 100 | 100 | 100 |
| 1976 | 100 | 100 | 100 |
| 1977 | 100 | 100 | 100 |
| 1978 | 100 | 100 | 100 |
| 1979 | 100 | 100 | 100 |
| 1980 | 100 | 100 | 100 |

Table 2

Table 2 shows the results of the regression analysis. The results show that the initial investment in the industry is a significant determinant of the industry's performance. The results show that the initial investment in the industry is a significant determinant of the industry's performance.

| Variable | Coefficient | t-statistic | p-value |
|-------------------------|-------------|-------------|---------|
| Initial investment | 0.15 | 2.5 | 0.01 |
| Industry size | 0.05 | 1.2 | 0.25 |
| Industry age | 0.02 | 0.5 | 0.60 |
| Industry growth | 0.01 | 0.2 | 0.85 |
| Industry profitability | 0.03 | 0.8 | 0.40 |
| Industry risk | 0.04 | 1.0 | 0.30 |
| Industry innovation | 0.06 | 1.5 | 0.10 |
| Industry competition | 0.07 | 1.8 | 0.05 |
| Industry regulation | 0.08 | 2.0 | 0.02 |
| Industry globalization | 0.09 | 2.2 | 0.01 |
| Industry sustainability | 0.10 | 2.5 | 0.01 |

Employment Statistics - Con.

Table 4 presents statistics of employment by months and by sex for the Dominion in 1926. Employment was fairly constant throughout the year, the maximum being reached in September with a total of 12,671 of whom 11,119 were males and 1,552 females, whilst the minimum employment was attained in January with 10,579 males and 1,438 females or a total of 12,017. The average employment during the year totalled 12,601 of whom 11,059 were males and 1,542 were females.

The average employment by months in the tables of this report is the sum of the averages of individual plants based on the number of months that each plant was in actual operation and not the average for the calendar year.

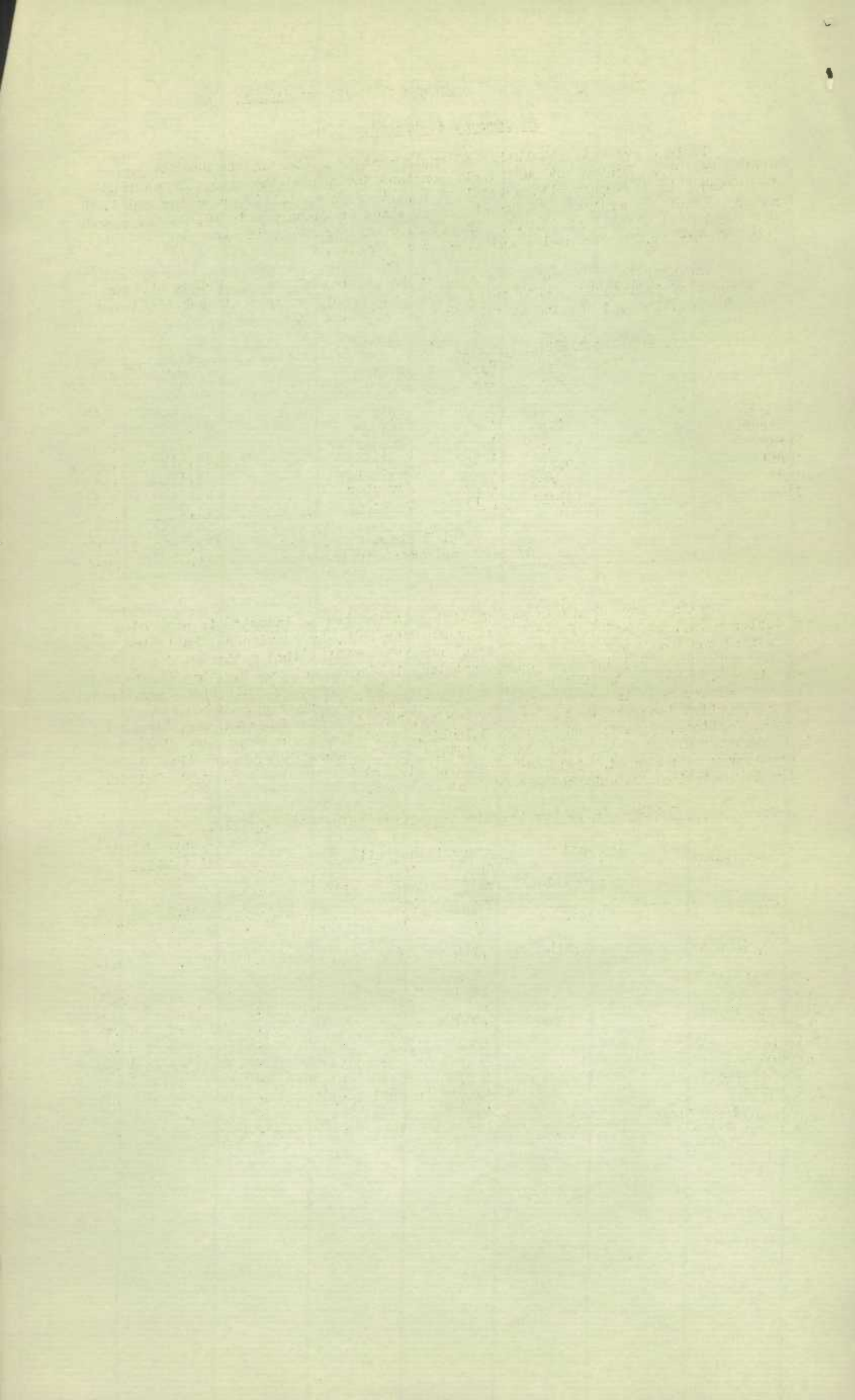
Table 4.- Employees by months and sex, 1926.

| Months | Male | | Female | | Months | Male | | Female | | | |
|--------------------------------|--------|-------|-----------|--------|--------|----------|--------|--------|----------|--------|-------|
| | No. | No. | No. | No. | | No. | No. | No. | No. | | |
| January | 10,579 | 1,438 | July | 11,094 | 1,533 | February | 10,582 | 1,436 | August | 11,099 | 1,541 |
| March | 10,650 | 1,445 | September | 11,119 | 1,552 | April | 10,731 | 1,452 | October | 11,118 | 1,534 |
| May | 10,880 | 1,500 | November | 11,114 | 1,534 | June | 11,017 | 1,513 | December | 11,125 | 1,536 |
| Total Employment in year | | | | | | 131,108 | 18,014 | | | | |
| Average employment during year | | | | | | 11,059 | 1,542 | | | | |

Working time of plants and employees in the baking industry is presented in tables 5 (a), (b) and (c) for the calendar year 1926, by provinces. Full time operations was 94.19 per cent of the total possible working time estimated for census purposes at 313 days per year, part time 1.18 per cent and the time plants were idle 4.63 per cent. The provinces exceeding the average of full time operations in the Dominion were in order, Prince Edward Island, New Brunswick, Quebec and Alberta, whilst those below the average for the Dominion were Saskatchewan, Nova Scotia, Manitoba, Ontario and British Columbia. Part time operations were highest in Saskatchewan, while in Prince Edward Island and New Brunswick no part time operations were reported. Idle time was also highest in Saskatchewan, with British Columbia, Ontario and Manitoba next highest in order.

Table 5 (a).- Working time of plants by provinces, 1926.

| Provinces | Plants in operation | Days in operation | | | Average days worked per plant | | |
|----------------------|---------------------|-------------------|--------------|--------|-------------------------------|--------------|-------|
| | | On full time | On part time | Idle | On full time | On part time | Idle |
| | | No. | No. | No. | No. | No. | No. |
| CANADA | 2,214 | 652,765 | 8,167 | 32,050 | 294.83 | 3.69 | 14.48 |
| P. E. Island | 6 | 1,824 | - | 54 | 304.00 | - | 9.00 |
| Nova Scotia | 61 | 17,489 | 790 | 814 | 286.71 | 12.95 | 13.34 |
| New Brunswick | 44 | 13,165 | - | 607 | 299.20 | - | 13.80 |
| Quebec | 764 | 227,049 | 1,966 | 10,117 | 297.19 | 2.57 | 13.24 |
| Ontario | 390 | 262,242 | 2,957 | 13,371 | 294.65 | 3.32 | 15.03 |
| Manitoba | 92 | 27,076 | 387 | 1,333 | 294.30 | 4.21 | 14.49 |
| Saskatchewan | 85 | 23,531 | 1,110 | 1,964 | 276.83 | 13.06 | 23.11 |
| Alberta | 110 | 32,653 | 603 | 1,174 | 296.85 | 5.48 | 10.67 |
| Br. Columbia & Yukon | 162 | 47,736 | 354 | 2,616 | 294.67 | 2.18 | 16.15 |



Employment Statistics - Con.

The number and percentage of wage-earners in month of highest employment working specified hours per day is shown in Table 5(b), for Canada and the provinces. From a study of the table it will be seen that an eight-hour day is prevalent in Alberta, British Columbia and Prince Edward Island, a nine-hour day in Manitoba, Ontario, Saskatchewan, New Brunswick and Quebec. In the Dominion as a whole the average percentage falls in the group working 9 hours per day, being 59.95 as compared with 21.07 per cent in the 8 hour group, 17.38 per cent in the 10 hour group, whilst but 1.6 per cent was in the group working more than 10 hours a day.

Table 5(b).- Hours worked by wage-earners in month of highest employment, 1926.

| Provinces | Wage-earners in month of highest employment working per day of | | | | Percentage of wage-earners working per day of | | | |
|----------------------|--|---------|----------|---------------|---|---------|----------|---------------|
| | 8 hours or less | 9 hours | 10 hours | Over 10 hours | 8 hours or less | 9 hours | 10 hours | Over 10 hours |
| | No. | No. | No. | No. | p.c. | p.c. | p.c. | p.c. |
| CANADA | 2,765 | 7,866 | 2,281 | 209 | 21.07 | 59.95 | 17.38 | 1.60 |
| P. E. Island | 15 | - | 8 | - | 65.22 | - | 34.78 | - |
| Nova Scotia | 119 | 55 | 82 | 26 | 42.20 | 19.50 | 29.08 | 9.22 |
| New Brunswick | 40 | 149 | 25 | 3 | 18.44 | 68.66 | 11.52 | 1.38 |
| Quebec | 505 | 2,528 | 943 | 76 | 12.46 | 62.39 | 23.27 | 1.88 |
| Ontario | 1,068 | 4,070 | 1,095 | 79 | 16.92 | 64.48 | 17.35 | 1.25 |
| Manitoba | 77 | 497 | 30 | 17 | 12.40 | 80.03 | 4.83 | 2.74 |
| Saskatchewan | 71 | 207 | 57 | 4 | 20.94 | 61.07 | 16.81 | 1.18 |
| Alberta | 265 | 189 | 9 | 4 | 56.75 | 40.47 | 1.93 | .85 |
| Br. Columbia & Yukon | 605 | 171 | 32 | - | 74.88 | 21.16 | 3.96 | - |

The number of hours worked per day in the month of highest employment and the standard working hours per week are shown by provinces in Table 5 (c). It should be noted that whilst the statistics relating to hours of labour in columns 1, 2 and 3 are based on figures compiled for the month of highest employment, those in columns 4 and 5 represent the total and average of standard weekly hours of labour for the number of establishments reporting to the Bureau. For this reason the relation between daily and weekly hours of labour is to some extent impaired. The average daily hours of labour on the above basis was for the Dominion 8.99, whilst the average standard weekly hours worked out at 53.86 per plant.

Table 5(c).- Hours of Labour per day and per week, 1926.

| Provinces | Total daily hours and number of wage-earners in month of highest employment | | | Standard working hours per week | |
|----------------------|---|--------------------|---------------------------------------|---------------------------------|---------|
| | Total hours | Total Wage-earners | Average hours per day per wage-earner | Total | Average |
| | No. | No. | No. | No. | No. |
| CANADA | 118,023 | 13,121 | 8.99 | 119,236 | 53.86 |
| P. E. Island | 200 | 23 | 8.70 | 300 | 50.00 |
| Nova Scotia | 2,553 | 282 | 9.05 | 3,261 | 53.46 |
| New Brunswick | 1,944 | 217 | 8.95 | 2,395 | 54.43 |
| Quebec | 37,058 | 4,052 | 9.14 | 41,794 | 54.18 |
| Ontario | 56,993 | 6,312 | 9.03 | 47,987 | 53.92 |
| Manitoba | 5,576 | 621 | 8.98 | 4,963 | 53.94 |
| Saskatchewan | 3,045 | 339 | 8.98 | 4,568 | 53.74 |
| Alberta | 3,955 | 467 | 8.47 | 5,748 | 52.25 |
| Br. Columbia & Yukon | 6,699 | 808 | 8.29 | 8,220 | 50.74 |

PHYSICS DEPARTMENT

PHYSICS 551
LECTURE 10
THERMODYNAMICS
ENTROPY
REVERSIBLE PROCESSES
CARNOT CYCLE
HEAT ENGINES
SECOND LAW OF THERMODYNAMICS
MAXWELL RELATIONS
GIBBS FREE ENERGY
PHASE EQUILIBRIUM
VAN DER WAALS EQUATION OF STATE
CRITICAL POINT
TRIPLE POINT
HEAT CAPACITY
DEBYE MODEL
EINSTEIN MODEL
DUALITY

| Topic | Notes |
|---------------------------------|--|
| Entropy | $S = k_B \ln \Omega$ |
| Reversible Processes | $dS = \frac{dQ_{rev}}{T}$ |
| Carnot Cycle | Efficiency $\eta = 1 - \frac{T_c}{T_h}$ |
| Heat Engines | Second Law of Thermodynamics |
| Maxwell Relations | $\left(\frac{\partial T}{\partial V}\right)_S = -\left(\frac{\partial P}{\partial S}\right)_V$ |
| Gibbs Free Energy | $G = H - TS$ |
| Phase Equilibrium | Clausius-Clapeyron Equation |
| Van der Waals Equation of State | $\left(P + \frac{a}{V^2}\right)(V - b) = RT$ |
| Critical Point | T_c, P_c, V_c |
| Triple Point | T_t, P_t, V_t |
| Heat Capacity | C_V, C_P |
| Debye Model | Low temperature limit |
| Einstein Model | High temperature limit |
| Duality | Legendre Transformations |

Fuel Consumption

The quantity and cost value delivered at the factory or works of the classes of fuel consumed by the baking industry in 1926 is shown in Table 6. By comparison on the basis of costs, wood was the principal fuel used, being 25 per cent of the total, followed in order by coke with 22.7 per cent, gas, artificial and natural, 18.8 per cent, anthracite coal 12.4 per cent and bituminous coal 11.12 per cent. The total cost of all fuel rose from \$1,404,933 in 1925 to \$1,546,678 in 1926 or a little more than 10 per cent. The total cost of electricity purchased was \$254,147 equivalent to .026 cents per k.w.h. for the 9,959,689 kilowatt hours reported.

Table 6.- Fuel consumed by classes, 1926

| Classes of fuel | Unit of measure | Quantity | Cost value at the factory or works \$ |
|----------------------------|-----------------|-----------|--|
| Coal, bituminous | Short ton | 18,017 | 172,058 |
| Coal, anthracite | " " | 13,515 | 192,530 |
| Coal, lignite | " " | 1,361 | 11,360 |
| Coke | " " | 30,510 | 351,160 |
| Gasoline | Imp. gal. | 166,670 | 52,331 |
| Fuel oil | " " | 2,753,583 | 81,086 |
| Wood | cord | 77,804 | 389,922 |
| Gas, artificial or natural | M.c.ft. | 370,005 | 291,721 |
| Other fuel | - | - | 4,510 |
| Total cost of fuel | - | - | 1,546,678 |

Power Equipment

The classes of power employed in the industry are shown in Table 7 by (a) the number of units in each class and (b) the indicated horse-power according to manufacturers' rating. Eighty-three point one per cent of the power employed in the industry was developed by electric motors, 16.9 per cent by internal combustion engines and the remaining 1 per cent by steam engines. The cost of electricity purchased was \$254,147 or an average of \$29.52 per horse-power purchased. The number of boilers installed for any purpose whatever is reported in the table but does not form any part of the power installation.

Table 7.- Power employed by classes, 1926.

| Classes of power | Number of units | Total Horse-power according to manufacturers' rating |
|---|-----------------|--|
| Steam engines and turbines | 13 | 233 |
| Oil, gas and gasoline engines | 405 | 1,482 |
| Hydraulic turbines or water wheels | - | - |
| Total Primary power | 418 | 1,715 |
| Electric motors operated by purchased power | 2,057 | 8,610 |
| Total power for manufacturing purposes | 2,475 | 10,325 |
| Electric motors operated by power generated by establishments | 11 | 24 |
| Total motor installation | 2,068 | 8,634 |
| Boilers installed for any purpose | 85 | 2,203 |

Faint, illegible text at the top of the page, possibly a header or introductory paragraph.

Second section of faint, illegible text, appearing to be a list or a series of entries.

Third section of faint, illegible text, continuing the list or entries.

Fourth section of faint, illegible text, possibly a concluding paragraph or a summary.

Fifth section of faint, illegible text at the bottom of the page.

Materials Used.

The quantity and cost value of all materials used in the baking industry in 1926 are shown in Table 8 for the Dominion. The total cost, which in 1925 was \$31,795,203, rose in 1926 to \$32,928,065, an increase of \$1,132,862, or approximately 3.6 per cent. The single item of flour constituted more than 67.7 per cent of the total cost of all materials used. Yeast, sugar, shortening and eggs each with a cost exceeding a million dollars were next in order. Containers of all kinds and labels cost \$500,872, or about seven-tenths of one per cent of the selling value of the products of the entire industry.

Table 8.- Materials used by quantity and cost value, 1926.

| Classes of Materials | Unit of measure | Quantity | Cost Value \$ |
|--|-----------------|------------|-------------------|
| Flour | barrel | 3,069,176 | 22,192,863 |
| Hops | pound | 97,292 | 15,272 |
| Malt | " | 3,582,886 | 411,280 |
| Yeast | " | 5,995,644 | 1,706,699 |
| Salt | barrel | 48,205 | 128,496 |
| Sugar | pound | 21,173,696 | 1,256,613 |
| Butter | " | 1,050,087 | 382,019 |
| Cooking oils | " | 510,217 | 70,689 |
| Lard | " | 3,894,540 | 596,806 |
| Shortening | " | 8,951,122 | 1,339,153 |
| Cream | gallon | 108,215 | 186,125 |
| Milk, fresh and skim | " | 512,707 | 147,046 |
| " condensed | pound | 3,846,189 | 275,770 |
| " dried or powdered | " | 1,537,232 | 182,953 |
| Eggs | dozen | 3,327,968 | 1,058,273 |
| Fruits | pound | 4,524,491 | 645,768 |
| Nuts | " | 354,769 | 123,241 |
| Glucose | " | 242,867 | 13,125 |
| Chocolate | " | 140,853 | 32,543 |
| Cocconut | " | 332,657 | 59,945 |
| Syrups | gallon | 41,060 | 25,386 |
| Extracts, essences, etc. (value only) | - | - | 64,118 |
| All other materials (value only) | - | - | 1,513,010 |
| Boxes, cases, tins, labels, etc. (value only) | - | - | 500,872 |
| Total cost of Materials | - | - | 32,928,065 |

Imports and Exports

The imports of manufactured commodities in the baking industry are not of sufficient importance to have a separate import classification but are included in imports under the item "flavoring powders, custard powders, jelly powders, sweetened breads, pies, cakes and puddings". One item only is shown separately that of Passover bread - which in the calendar year 1926 was valued at \$105,545, all of which came from the United States.

Exports similarly are combined in the export classification under the head of "biscuits and bread" so that it is not possible to give separate information regarding the export of either commodity.

STATISTICS CANADA LIBRARY
BIBLIOTHEQUE STATISTIQUE CANADA



1010712292