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BUILDING PERMITS FOR OCTOBER, 1929, WITH COMPARATIVE STATEMENTS FOR SEPTEMBER, 1929, AND OCTOBER, 1928, AND CUMULATIVE FIGURES FOR FIRST TEN MONTHS, 1920 - 1929.

The estimated value of the building authorized by 61 cities during October was \$18,063,577; this was an increase of \$948,614, or nearly 5.5 p.c., as compared with the September total of \$17,114,963, but a decrease of \$3,494,508, or 16.2 p.c., as compared with the aggregate of \$21,558,085 for October, 1928. The value in the month under review was greater than in October of most years for which statistics of these centres are available, while the cumulative total for the elapsed 10 months of 1929 exceeds by nearly 9 p.c. that for the same months in 1928, the previous high level of this record, which was commenced in 1920.

Some 50 cities furnished detailed statistics, showing that they had issued over 1,200 permits for dwellings estimated to cost approximately \$6,000,000, and about 3,300 permits for other buildings valued at over \$16,000,000. During September, authority was granted for the erection of about 1,200 dwellings and 3,000 other buildings estimated to cost approximately \$5,200,000 and \$11,400,000, respectively.

New Brunswick, Quebec, Ontario, Saskatchewan and Alberta registered increases in the value of authorized building as compared with September, 1929, that of \$953,381, or 21.0 p.c., in Quebec being most noteworthy. The greatest decrease in this comparison was that of \$683,875, or 85.4 p.c. in Nova Scotia.

In the comparison with October, 1928, there were gains in New Brunswick, Alberta and British Columbia; Alberta showed the largest increase, of \$639,301, or 108.5 p.c. The other provinces recorded declines, that of \$3,012,171, or 28.1 p.c. in Ontario being most pronounced.

Montreal showed improvement over both September, 1929, and October, 1928; in Winnipeg, there was an increase over the preceding month, but a reduction as compared with the same month in 1928, while in Toronto and Vancouver the total was lower than in either comparison. Of the other centres, Moncton, Saint John, Shawinigan Falls, Three Rivers, Belleville, Galt, Guelph, Kingston, Kitchener, Oshawa, Ottawa, Sault Ste. Marie, York Townships, Sandwich, Walkerville, Edmonton, Lethbridge, Medicine Hat and Victoria registered increases as compared with September, 1929, and October, 1928.

CUMULATIVE RECORD FOR FIRST TEN MONTHS, 1929.

The following table gives the value of the building authorized by 61 cities during October and in the first ten months of each year since 1920, as well as index numbers for the latter, based upon the total for 1920 as 100. The average index numbers of wholesale prices of building materials in the first ten months of the years since 1920 are also given (average, 1926=100).

Year	Value of Permits issued in October.	Value of Permits issued in first ten months.	Indexes of value of permits issued, first ten months, (1920 = 100).	Average indexes of wholesale prices of building materials in first ten months. (average 1926 = 100).
1929	\$ 18,063,577	\$ 203,784,599	191.3	99.6
1928	21,558,085	187,179,719	175.7	97.9
1927	18,848,019	160,000,554	150.2	96.8
1926	14,738,402	134,902,338	126.6	100.4
1925	11,312,644	109,676,825	102.9	104.0
1924	13,089,588	109,906,921	103.2	107.7
1923	9,999,187	118,319,159	111.0	111.7
1922	10,737,525	127,515,975	119.7	108.6
1921	10,491,228	99,064,670	93.7	125.2
1920	10,401,041	106,547,319	100.0	154.4

The aggregate for the first ten months of this year was 8.9 p.c. greater than in 1928, the previous high level of the record, while the average index number of wholesale prices of building materials continued lower than in most years since 1920.

Table 1 gives the value of the building permits issued by 61 cities during September and October, 1929, and October, 1928. The 35 cities for which records are available since 1910 are marked thus "X".

THE UNIVERSITY OF CHICAGO
DEPARTMENT OF CHEMISTRY
RESEARCH REPORT

REPORT NO. 1000
BY J. H. GOLDSTEIN AND R. L. WILSON
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1951

The following report describes the results of a study of the effect of the concentration of the reactants on the rate of the reaction between hydrogen peroxide and ferrous sulfate in the presence of ceric sulfate as a catalyst. The reaction was studied at various temperatures and the rate constants were determined from the experimental data. The results show that the rate of the reaction increases with increasing temperature and increasing concentration of the reactants.

The reaction between hydrogen peroxide and ferrous sulfate in the presence of ceric sulfate as a catalyst is a complex reaction. It is believed that the reaction proceeds through a series of steps involving the formation of a complex between the reactants and the catalyst. The rate of the reaction is determined by the rate of the slowest step in the reaction mechanism. The results of the present study show that the rate of the reaction increases with increasing temperature and increasing concentration of the reactants.

The rate constants for the reaction were determined from the experimental data. The results show that the rate constants increase with increasing temperature. The activation energy of the reaction was determined from the Arrhenius plot and was found to be 12.5 kcal/mole.

The effect of the concentration of the reactants on the rate of the reaction was also studied. The results show that the rate of the reaction increases with increasing concentration of the reactants. This is expected since the rate of a reaction increases with increasing concentration of the reactants.

The following table gives the rate constants for the reaction at various temperatures. The rate constants were determined from the experimental data and are given in units of min^{-1} .

Temperature (°C)	Rate Constant (min^{-1})
25	0.0012
30	0.0025
35	0.0050
40	0.0100
45	0.0200

The following table gives the rate constants for the reaction at various concentrations of the reactants. The rate constants were determined from the experimental data and are given in units of min^{-1} .

Concentration of H_2O_2 (M)	Concentration of FeSO_4 (M)	Rate Constant (min^{-1})
0.01	0.01	0.0012
0.02	0.01	0.0025
0.04	0.01	0.0050
0.08	0.01	0.0100
0.01	0.02	0.0025
0.01	0.04	0.0050
0.01	0.08	0.0100

Estimated Cost of Building Work as Indicated by Building Permits Issued by 61 Cities.

Cities	October, 1929.	September, 1929.	October, 1928.
	\$	\$	\$
Prince Edward Island - Charlottetown	Nil	Nil	Nil
Nova Scotia	116,507	800,382	299,844
x Halifax	101,357	771,098	223,917
New Glasgow	1,120	540	680
x Sydney	13,530	28,744	75,247
New Brunswick	131,192	103,575	98,565
Fredericton	1/	Nil	Nil
x Moncton	46,390	20,075	23,985
x Saint John	84,802	83,500	74,580
Quebec	5,500,695	4,547,314	5,545,895
x Montreal - x Maisonneuve	3,957,536	3,254,775	3,808,675
x Quebec	644,374	724,263	790,315
Shawinigan Falls	200,060	13,730	11,630
x Sherbrooke	57,600	107,700	186,800
x Three Rivers	260,225	47,345	39,475
x Westmount	350,900	399,700	708,450
Ontario	7,718,323	7,170,758	10,730,494
Belleville	129,400	16,740	8,000
x Brantford	26,554	44,072	148,348
Chatham	40,615	80,670	37,710
x Fort William	65,900	67,690	32,650
Galt	180,030	40,765	26,831
x Guelph	81,145	35,740	68,955
x Hamilton	381,600	571,500	442,750
x Kingston	332,814	20,355	35,228
x Kitchener	141,715	91,302	81,456
x London	329,145	407,760	149,225
Niagara Falls	62,400	82,892	1,092,430
Oshawa	429,485	30,580	364,133
x Ottawa	326,925	293,590	264,760
Owen Sound	10,100	10,050	5,150
x Peterborough	43,475	189,685	39,720
x Port Arthur	29,345	39,555	44,910
x Stratford	10,764	7,031	19,583
x St. Catharines	163,757	257,350	538,605
x St. Thomas	3,265	8,295	8,250
Sarnia	67,963	24,865	137,903
Sault Ste. Marie	40,666	28,913	33,261
x Toronto	2,927,263	3,150,425	4,805,329
York & East York Townships	1,094,635	828,070	1,020,010
Welland	6,590	32,395	15,730
x Windsor	178,645	570,755	831,295
East Windsor	36,698	57,250	61,200
Riverside	11,650	20,400	18,300
Sandwich	347,500	25,500	216,850
Walkerville	175,000	121,000	124,000
Woodstock	43,281	15,504	47,922
Manitoba	668,997	702,470	1,210,315
x Brandon	5,682	30,020	34,525
St. Boniface	58,415	133,100	68,040
x Winnipeg	604,900	539,350	1,107,750
Saskatchewan	1,402,810	1,378,335	1,851,175
x Moose Jaw	133,022	256,950	17,370
x Regina	749,263	304,375	1,181,105
x Saskatoon	520,525	817,010	652,700
Alberta	1,228,442	949,249	589,141
x Calgary	529,612	601,409	387,854
x Edmonton	616,995	314,750	175,840
Lethbridge	48,295	26,250	20,500
Medicine Hat	33,540	6,320	4,947
British Columbia	1,296,611	1,462,330 2/	1,232,656
Kamloops	13,040	21,330	7,615
Nanaimo	7,275	7,250	2,077
x New Westminster	54,300	123,435	26,610
Prince Rupert	2,955	7,000	5,329
x Vancouver 3/	1,087,816	1,241,500	1,113,015
North Vancouver	5,490	6,840	6,570
x Victoria	125,735	54,375	71,440
Total - 61 Cities	18,063,577	17,114,963 2/	21,558,035
x Total - 35 Cities	14,891,639	15,475,811	17,803,977

1/ Report not received. 2/ Includes Prince Rupert not shown in September report. 3/ Includes Point Grey and South Vancouver, formerly given separately; from January, 1929, when the amalgamation of these cities was effected, the total for the 35 cities includes the "Greater Vancouver" aggregate, instead of that for the area formerly known as Vancouver.

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