cooked in the presence of the various chemicals referred to. The cooked chips are then "blown" into pits below the digesters and washed in preparation for screening.

The sulphite process, which is the most important in use in Canada, depends on the action of a bisulphite liquor (a comparatively weak acid solution of calcium and magnesium bisulphite) on the non-cellulose wood component.

The woods used in this process in Canada are all coniferous. Spruce forms 73 p.c., balsam 18 p.c. and hemlock 7 p.c.

Sulphite fibre is used in the manufacture of most of the newsprint paper, in which it forms about 20 p.c. of the pulp used, adding strength to the remaining 80 p.c. of groundwood pulp. It is used for the better classes of white paper and boards, either pure or in mixture with other fibres.

The soda process is the oldest chemical process, and depends on the action of an alkaline solvent, caustic soda, on the non-fibrous components.

The resultant fibre is used in the manufacture of the best class of book, magazine and writing papers, as a filler mixed with stronger pulp. The result is a paper which lacks strength but can be readily finished to a good surface.

The manufacture of sulphate or kraft pulp is a comparatively recent modification of the soda process. It was first used in America by the Brompton Pulp and Paper Co., at East Angus, Quebec, in 1907. The process was first introduced with the intention of reducing the manufacturing cost of soda pulp by substituting salt cake (sodium sulphate) for the more expensive soda ash (sodium carbonate). Subsequent developments showed that, by an adaptation of this process, the superior strength of coniferous wood fibre could be taken advantage of, and at the present time the woods used are almost exclusively coniferous. Spruce heads the list with about 57 p.c. of the total, followed by jack pine with about 24 p.c., balsam with about 14 p.c., and other conifers in smaller proportions. The fibres so obtained are long, flexible and very strong, and are used in the manufacture of so-called kraft papers used for wrapping, bags, etc. It is sometimes used in place of sulphite in making newsprint.

Pulp Production.—Table 6 shows the total production of pulp in Canada from 1908 to 1928 inclusive, together with the production of groundwood pulp and the production of fibre by the three chemical processes described. Statistics of values are not available from 1908 to 1916.

6.—Pulp Production, Mechanical and Chemical, calendar years 1908-1928.

Years.	Total Production.[1]		Mechanical Pulp.		Chemical Fibre.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	tons.	$	tons.	$	tons.	$
1908	363,079	-	278,570	-	84,509	-
1909	445,408	-	325,609	-	119,799	-
1910	474,604	-	370,195	-	104,409	-
1911	496,833	-	362,321	-	134,512	-
1912	682,632	-	499,226	-	183,406	-
1913	854,624	-	600,216	-	254,408	-
1914	934,700	-	644,924	-	289,776	-
1915	1,074,805	-	743,776	-	331,029	-
1916	1,296,084	-	827,258	-	468,826	-
1917	1,464,308	65,515,335	923,731	25,918,811	540,423	38,374,191
1918	1,557,193	64,356,173	879,510	19,112,727	677,683	45,243,446
1919	1,716,089	73,320,278	990,902	23,316,828	725,187	50,003,450
1920	1,960,102	141,552,862	1,090,114	49,890,337	848,528	90,053,999
1921	1,549,082	78,338,278	931,560	32,313,848	612,467	45,929,513
1922	2,150,251	84,947,598	1,241,185	31,079,429	897,533	53,615,692
1923	2,475,904	99,073,203	1,419,547	37,587,379	1,012,092	60,674,518
1924	2,465,011	90,323,972	1,427,782	36,165,901	986,242	53,313,823
1925	2,772,507	100,216,383	1,621,917	39,130,117	1,084,992	59,969,673
1926	3,229,791	115,154,199	1,901,268	44,800,257	1,125,178	69,220,427
1927	3,278,978	114,442,550	1,922,124	44,174,811	1,278,572	69,169,002
1928	3,608,045	121,184,214	2,127,699	47,549,324	1,374,196	71,393,320

[1] These totals include some unspecified pulp and screenings.