award can be made? Sir Thomas White tells the House of Commons that the arbitrators will take prospective earnings into consideration. That means that the roof is off and the sky is the limit.

PERSONALS.

Robert W. Thomson, B.A.Sc., M.E., has been appointed by the provincial government of British Columbia to the position of district engineer with headquarters at Kamloops. Mr. Thomson was born near Toronto in 1868 and graduated from the University of Toronto in 1893.

Major Frank O. Tidy, Toronto, has been appointed as officer in command of the Railway and Construction Battalion depot at Ottawa. He was formerly with the 3rd Battalion and later was senior major of the 198th Buffs Battalion. He was awarded the Military Cross for gallantry in capturing a German patrol.

J. E. McAllister, C.E., consulting engineer, of Toronto, has been appointed vice-president and general manager of the National Steel Car Co., Limited, Hamilton. Mr. McAllister is a graduate of the School of Applied Science, Toronto, and of the Michigan College of Mines. He was formerly superintendent of reduction works of the Tennessee Copper Co., and later was general manager of the British Columbia Copper Co. He is consulting engineer to the British-America Nickel Corporation.

F. F. Longley, formerly in charge of construction of the slow sand filtration plant at Toronto, Ont., has been commissioned as major in the United States army, and has been sent to France to assume entire charge of water supply for the American expeditionary force. Mr. Longley is a graduate of the U.S. Military Academy, class of 1902. He was connected with the construction and operation of various sewerage systems and water filtration plants until 1909, when he became associated with the Toronto work. In 1912 he became a member of the firm of Hazen & Whipple, consulting engineers, New York City.

ENGINEERS AT IRRIGATION CONVENTION

The Canadian Society of Civil Engineers was represented at the eleventh annual convention of the Western Canada Irrigation Association, at Maple Creek, Sask., August 1st, 2nd and 3rd, by R. J. Burley, F. H. Peters, S. G. Porter, C. M. Arnold and M. H. French. The Calgary branch was represented by Wm. Pearce and J. S. Tempest.

RESEARCH WORKERS VISIT CALGARY

Dr. McCallum, Dr. Ruttan and Dr. Adams, of the Honorary Advisory Council of Research, were in Calgary on July 17th and 18th. A committee from the Calgary branch of the Canadian Society of Civil Engineers met them and escorted them over the city, pointing out manufacturing plants and other establishments which would be of interest to them in their investigations. The committee, together with members of other technical organizations, afterwards met with them in conference to discuss the distribution of the questionnaires and other matters pertaining to the work of the Advisory Council in Southern Alberta. The members of the Advisory Council also addressed a representative gathering at a luncheon given by the Calgary Board of Trade.

SANDS AND CONSISTENCY OF CONCRETE

(Continued from page 146.)

mortar, or in other words, a concrete of a consistency that, although saturated, shows no free water when taken out of the mixer; that can be transported in barrows, chutes, etc., without appreciable segregation of the component materials; and that when deposited in the forms will settle into place and become thoroughly compacted with a comparatively small amount of spading, slicing, or other manipulating.

Having determined the quantity of water for the first consistency of each mix, the quantities of water for four other consistencies were arbitrarily fixed by the percentages of increase for each, namely, 10 per cent. for the second, 20 per cent. for the third, 35 per cent. for the fourth, and 50 per cent. for the fifth.

For the tests for grading of sands, the quantity of water used, when expressed in relation to the total dry weight of the cement and aggregates and to the cement alone, is given in Table II.

Table II.—Percentage of Water Used in Tests for Grading of Sands and Consistency of Mix

Test.	Kind of Specimen.	1 : 2 : 4 Percentage of Water to Dry Weight of Cement and Aggregates.	1 : 2 : 4 Percentage of Water to Dry Weight of Cement.	1 : 2½ : 5 Percentage of Water to Dry Weight of Cement and Aggregates.	1 : 2½ : 5 Percentage of Water to Dry Weight of Cement.
Grading of sands		6.17	41.14	5.99	48.76
Consistency:					
First	Beam	6.48	43.36	...	...
	Cylinder	6.17	41.14	5.99	48.76
Second	Beam	7.13	47.70	...	...
	Cylinder	6.75	45.25	6.59	53.64
Third	Beam	7.78	52.03	...	...
	Cylinder	7.37	49.37	7.19	58.51
Fourth	Beam	8.75	58.52	...	...
	Cylinder	8.28	55.54	8.09	65.83
Fifth	Beam	9.72	65.04	...	...
	Cylinder	9.26	61.71	8.99	73.14

Table II. also gives the percentage of water used in the tests for consistency of mix.

In connection with the data given in Table II., it must be borne in mind that all concrete materials were thoroughly dry when deposited in the mixer drum.

The detail of the test beams rendered it necessary that the concrete of first consistency for this work be slightly more mushy than that for the test cylinders.

The quantity of concrete mixed for each set of test specimens was sufficient to fill all molds and to give a residue of from 1½ to 2 cu. ft. The last test specimens made each day were, therefore, in no sense composed of scrapings from the mixer. In this connection, it is of interest to note that, although a less quantity of materials was provided for coating the inside of the drum with mortar, the quantity of concrete left over from the very wet mixes was approximately double that left over from the first or standard consistency. This increase was mainly due to the increased volume of water used.

A steam-operated Foote mixer of ⅓-cu. yd. capacity was used for the mixing of all concrete.

Placing.—The concrete was removed from the mixer as required for placing in the cylinder and beam forms. Usually about 2 cu. ft. of concrete were removed at a time and deposited in a barrow, from which it was