over 50,000 tests just on the effect of size and grading of aggregates. Their research work in connection with sands and water content have been of special value, and have been productive of some very interesting and novel conclusions.

The article was originally written for the American Concrete Institute, to be presented at the annual meeting recently held in Atlantic City, but was not published by that Institute as it was not received in time for the making of the very large number of illustrations required or for the setting up of the detailed tables requiring difficult and expensive typography. We are, therefore, presenting this material for the first time that it has appeared anywhere in print, we believe; its value, not only for present reading but particularly for reference purposes, will no doubt be appreciated by all those who expect to be brought into contact at any time with any form of concrete construction.

The Structural Materials Research Laboratory is maintained jointly by the Lewis Institute of Chicago and the Portland Cement Association. The example of that association in bearing so great a part of the cost of Prof. Abrams' work is worthy of much commendation. We understand that Prof. Abrams has an entirely free hand in following and making public any line of investigation or research which he feels will be of value to users of cement, increase efficiency in concrete design or add to the present sum of knowledge in regard to cement as a material of construction.

PERSONALS

Major WILLIAM T. WILSON, of the Royal Engineers, has been awarded the Military Cross for exceptional bravery in action.

W. K. GWYER has been appointed district engineer to the Public Works Department, government of British Columbia, with headquarters at Penticton, B.C.

GEORGE A. MOUNTAIN, chief engineer for the Board of Railway Commissioners of Canada, has resumed his official duties after a long absence due to illness. Mr. Mountain's health has been entirely restored.

R. S. STRONACH, of the Dominion Parks Branch, Department of the Interior, has been appointed resident engineer at Jasper Park, Alta. Mr. Stronach was recently discharged from military service, having been invalided home from France last fall suffering from gas poisoning.

Lieut.-Col. T. V. ANDERSON, D.S.O., has been gazetted commandant of the Engineers' Training Corps at Seaforth, England, with the rank of Assistant Director of Signals. Col. Anderson is a son of Col. W. P. Anderson, C.M.G., chief engineer of the Department of Marine, Ottawa.

J. M. WARDLE, formerly highway engineer with the Dominion Parks staff, has been appointed superintendent of the Rocky Mountain Park, succeeding the late S. J. Clarke. Mr. Wardle is a graduate of Queen's University and has been with the Dominion Parks staff for the past four years, acting since 1915 as chief highway engineer.

F. E. ESPENSCHIED, who has been a member of the engineering staff of the Hydro-Electric Power Commission of Ontario for the past seven years, has resigned to become assistant chief engineer of the Combustion Engineering Corporation, New York City, manufacturers of mechanical stokers and furnaces. Mr. Espenschied graduated from Cornell University in 1905, entering the employ of the Western Pennsylvania Railway Co. In 1910 he was appointed general manager of the Interstate Light and Power Company at Galena, Ill., and in the following year he came to Canada and joined the Hydro staff.

U.S. HIGHWAY COUNCIL

IT is announced that in the future all functions of United States Government agencies relating to streets and highways will be co-ordinated in a body called the United States Highways Council, with the intention of eliminating delays and uncertainty incident to the present method of taking up each problem with a separate department of the government. This council will be composed of the following persons:—

Lieut.-Col. W. D. Uhler, War Department; C. G. Sheffield, Fuel Administration; Richard L. Humphrey, War Industries Board; G. W. Kirtley, Railroad Administration; L. W. Page, chairman, Department of Agriculture; and J. E. Pennybacker, secretary.

The Council has adopted a form of application for relief in highway matters which is to be submitted to the government through the respective state highway departments. All of these departments have been supplied with copies of the application form. This form emphasizes as of first importance the maintenance of existing streets and highways; second, the reconstruction of badly damaged streets and highways; and last, new construction justified by war or economic necessity.

CALIFORNIA'S TEST FOR B. COLI

(Continued from page 116)

Samples developing gas in 48 hours in lactose broth must be fished and streaked on litmus lactose agar or endo media for further confirmation. The presence of typical colon-like colonies on the plate is for all practical purposes sufficient evidence of the presence of B. coli.

The subsequent inoculation of lactose broth tubes by such colonies and determination of the lactose-splitting property is practically unnecessary, but is advised for the inexperienced technician.

WOOD IN THE CONSTRUCTION OF MILL BUILDINGS

(Continued from page 96)

yard it is usually due to the existence of conditions which foster the growth of fungi, such as the following:—

(1) Location of yard in a damp, low-lying situation, or neglect to provide proper drainage.

(2) Allowing decaying waste wood to accumulate in the yard and to form centres for the distribution of infection.

(3) Using partially decayed foundation timbers for lumber piles, whereby disease is transmitted to sound lumber piled on same. (Foundation timbers should preferably be thoroughly impregnated with creosote oil.

(4) Piling lumber too near the ground, thus retarding circulation of air where it is most needed and keeping timber in the lower part of the piles in a favorable condition for infection.

(5) Using diseased spacers in lumber piles.

(6) Permitting diseased timber to remain as part of permanent structures in the yard.