

cations have been received from works departments, railways, and others, that they concur with the findings of that committee.

"Your committee, therefore, respectfully recommend the adoption of the specification, as prepared by the joint committee aforesaid, subject to the alterations and additions as herein set forth."

J. A. Jamieson, in discussing the report, said that it should be referred back to the committee, as it does not agree with American or English specifications, and he wanted information on why it should disagree.

R. A. Ross enquired whether it would not be better to adopt standard specifications used by other countries than to try to write separate specifications to meet our own comparatively little needs in Canada without linking up with any outside standards.

A. D. Swan said the committee had put the magnesia content maximum at 4 per cent. in order to split between the English 3 per cent. and the American 5 per cent. In the 7-day test, the committee had followed the English amended specification.

J. A. Jamieson persisted in an effort to find further information as to what had formed the basis of the 4 per cent. requirement. Had the committee conducted any experiments of their own to establish that percentage?

Mr. Swan replied that it was based on 110 letters received from the most eminent engineers in Europe and America; that it was the requirement of the Panama engineers in all Panama Canal work; that it was the requirement of the Public Works Department of Canada; and that it was the result of tests upon which the British standard specification was founded and which he had supervised.

Mr. Jamieson thought that the question was purely a chemical one, combined with the question of the temperature at which cement clinkered, and that unless viewed from that standpoint, any magnesia requirement meant nothing. The Bureau of Standards of the United States had shed much light upon this subject.

Arthur Crumpton stated that the joint committee in the United States had labored over five years on this point, with extensive laboratory research, and that they had found that cement containing 7 per cent. or 8 per cent. magnesia was as good as that containing 5 per cent., and that therefore any lower limit than 5 per cent. was totally unnecessary. R. J. Wig, of the United States government, feels that the joint committee specification meets the requirements so far as they can be met. There is a feeling that the joint committee favored the manufacturers. That is not so. Theirs is a consumers' specification which is practical and has been agreed to by the manufacturers. The manufacturers should not be asked to subscribe to irksome and unnecessary restrictions. The fineness requirement must be considered. By allowing the extra 1 per cent. magnesia, the fineness requirement could be met more cheaply, with the result that as good a cement would be obtained at a lower selling price.

Mr. Jamieson was not sure whether the extra 1 per cent. magnesia would cheapen cement manufacturing costs, but he said that it would have a tendency that way on account of widening the field of materials which would be suitable and thus possibly lower the raw material costs to some manufacturers.

F. B. Brown urged uniformity with the American specification. He advocated the discarding of the neat cement test and the judging of cement by the quality of the mortar it could produce.

Col. Leonard was not in favor of adopting the American specification. Why not write specifications to meet

our own conditions? Why should American work be copied wholesale? Our own committee should be backed up in its investigations.

J. A. Jamieson was strongly in favor of increase of strength with age. The American weakness, he said, is retrogression with age.

Sewage Disposal and Sanitation

Prof. Peter Gillespie offered to the meeting a report which had been made to the Toronto Branch by the branch committee on sewage disposal. After he had read the report, it was referred to council for further consideration, no action being taken on it. The report was as follows:—

"The committee appointed by the Toronto branch, re sewage disposal, has held five meetings since September last, at which many questions connected with sewage disposal were discussed and considered, and at a final meeting held on the 14th instant, it was decided to submit the following recommendations to the branch for submission to the parent society:

"1. That the provincial public health acts of the different provinces should provide that two or more members of each provincial board of health shall be engineers and corporate members of the Canadian Society of Civil Engineers.

"2. That the provincial public health acts should provide that all reports, plans, etc., respecting schemes for sanitation and sewage disposal required to be filed by provincial authorities, shall be prepared, signed and submitted by an engineer, a corporate member of the Canadian Society of Civil Engineers.

"3. That Dominion legislation should be enacted respecting the pollution of international and inter-provincial waters, and that provincial legislation in the different provinces, respecting stream pollution, be made uniform as far as practicable.

"4. That the public health act of each province should give to the provincial boards of health some measure of control over the operation of municipal water purification plants and sewage disposal works.

"5. That all provincial public health acts should stipulate that no municipality can submit to the votes of the electors, any by-laws providing for the raising of money for the construction, alteration or extension of any waterworks system or water purification works, or of any sewage system or sewage disposal works, without having had the approval of the provincial board of health, based on plans, reports and designs submitted by engineers.

"6. That the keeping of accurate and up-to-date records of all extensions and services added to sewer and waterworks systems, should be required of municipalities by the provincial board of health. Where municipalities have no system of their own for keeping such records the adoption of a method endorsed by the provincial board might be insisted upon.

"7. That where provincial boards of health maintain laboratories for the investigation of problems in public sanitation, such laboratories might, under reasonable conditions, and with much advantage to the country, the engineering profession and the boards themselves, be placed at the disposal of this society and, through it, of its members who have problems in municipal sanitation for which they desire solutions.

"The committee proposed to submit recommendations respecting rules and regulations covering the filing of plans, reports, etc., respecting waterworks systems and sewerage systems; first, existing systems, second, projected systems, and third, extension to works, but we