

crete, through the formation of a larger amount of colloidal cells.

Neither of these suggestion was especially investigated by the committee. Both appealed, however, for the reason that they substitute active cementitious substances for the largely inactive void-filling materials previously recommended, thus increasing the strength of the concrete.

In conclusion, the committee pointed out that no addition of waterproofing compounds or substances could be relied upon to counteract completely the effect of bad workmanship, and that the production of impermeable concrete could only be hoped for where there is determined insistence at all times on good workmanship.

The production of impermeable concrete has assumed greater importance since the appointment of the committee, owing to the well-known injurious action of saline or alkaline waters, and to the suggested possible effect of the moisture in concrete occasioning or aggravating electrical action from stray currents.

Originally the question of waterproofing involved mainly the physical troubles resulting from water passing through the concrete, without any special consideration of its effect on its durability, other than a gradual leaching out of the cement. Recent developments suggest the possibility that owing to the increased conductivity of damp concrete to electrical currents, such currents, if present, may so effect damp concrete as to lessen its integrity seriously, and this possibility further emphasizes the importance of the recommendation that no waterproofing compound of unknown chemical composition be added to concrete, as recent tests seem to show that the action of electrical currents is aggravated by the presence of certain solutions.

### THE CANADIAN PUBLIC HEALTH CONGRESS.

The third annual Congress of the Canadian Public Health Association will be held in Regina, September 18th, 19th and 20th. The city hall has been placed at the disposal of the members for the general sessions, while sectional meetings will be held in Regina College, the Board of Governors having granted the use of its buildings for this purpose.

The social functions of the Congress will include a luncheon at the Parliament Buildings on September 18th, tendered by the Government of Saskatchewan, the annual dinner of the Association to take place that evening, when the members will be the guests of the city of Regina; a visit to the city sewage disposal works on the following day, and on the last day of the Convention a trip to Fort Qu'Appelle, one of Saskatchewan's summer resorts, where the new sanatorium buildings are under construction.

The programme for the general session includes seventeen papers. Section I., for Medical Officers of Health; Section II., Medical Inspection of Schools; Section III., Military Hygiene; Section IV., Veterinary Hygiene and Food Inspection; Section V., Sanitary Inspectors; Section VI., Engineers and Architects; Section VII., Laboratory Workers; Section VIII., Social Workers. All have individual lists of papers bearing directly upon the science of public health.

Arrangements have been made with the Eastern and Western Passengers' Association whereby a standard certificate can be obtained at any railway station entitling the holder to reduced return fare, the advice of the committee being to purchase a one-way ticket to Regina, securing at the same time the standard certificate.

### THE DETERMINATION OF THE MAGNETIC MERIDIAN.

By J. A. MacDonald.

THERE had not been much done in the way of determination of the magnetic meridian at various points throughout Canada until a short time ago, when the Topographical Surveys Department of which Dr. Deville is at the head, took up this work in connection with Dominion land surveys in the Western provinces. Nothing of much account has yet been done in the older provinces by the Canadian Government, although the United States geodetic surveys branch has done considerable work in various parts of the Dominion in the way of determining magnetic declinations. The writer, a few years ago, determined the magnetic declination, at a point in one of the Maritime Provinces where no observation for magnetic declination had ever been made for the United States Geodetic Surveys. Data has, of course, been furnished by the Marine Department at the various harbors in Canada, for the information of navigators, but this data is of no value to those using compasses on land.

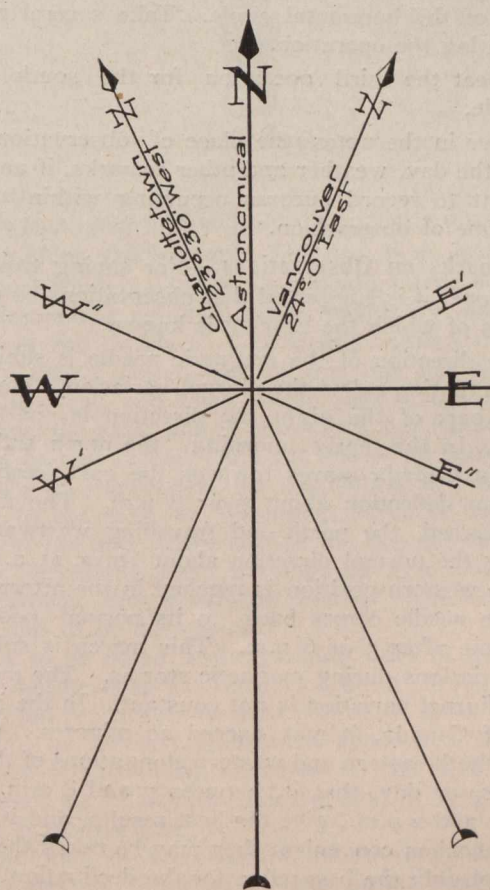


Fig. 1.—Magnetic Declinations.

**The Magnetic Needle Still Used for Establishing Lines.**—Although the compass is not allowed for establishing lines of Dominion land surveys, it is employed by most of the older provinces, and a knowledge of the direction of the magnetic meridian or of the magnetic declination is of absolute importance. The directions given for obtaining magnetic declinations in the Manual for Dominion Land Surveyors is very explicit.

For the determination of this direction, transit theodolites of the D.L.S. pattern are fitted with especially