

the metals are in the form of thin or perforated sheets and gauze. Professor Thompson observed the action of the air of Glasgow on a window-blind of fine iron wire-gauze during a period of about seven years. Although originally protected with lacquer, the lower portion of the blind in position opposite to where the window had been daily raised from its sash had been gradually eaten away. There is no doubt that such corrosive actions are assisted by the simultaneous process of oxidation, but there is, at the same time, evidence of the direct action of the acid vapors. The principal conditions under which lead fails are when it comes in contact with air, moisture and carbonic acid, more especially if organic acids derived from the soil or other sources are also present. In this case rapid corrosion may be expected, the action being similar to that already mentioned in the formation of the basic carbonate or white lead. This action being continuous in the presence of the chemical substances mentioned, the lead becomes finally entirely converted. The rusting of grey cast iron is apparently slower than that of wrought iron, the different varieties corroding more quickly as the amount of carbon increases in the iron. A cement known under the name of "rust-joined cement" is employed in the junction of iron pipes. It is composed of eighty parts fine iron filings, one part of ammonium chloride, and two parts of sulphur made into a paste with water. When this is packed into a joint it sets into a hard cement, apparently produced by the formation of mixed oxide and sulphide of iron.

QUEBEC LAND SURVEYORS

The Corporation of Quebec Provincial Land Surveyors held their annual meeting in Quebec for the election of directors for the next three ensuing years, on Wednesday, the 7th April. The following members were elected:—H. B. Tourigny, C. E. Gauvin, Arthur Smith, W. McLea Walbank, Ant. Painchaud, Thomas Breen, N. J. Gastonguay, John Sullivan, George Roy, J. E. Malhiot, J. E. Sirois, H. S. Harwood, I. P. B. Casgrain, D. C. Morency, P. C. Talbot. At a meeting of the

Board of Directors, held on the 8th inst., Messrs. W. McLea Walbank, of Montreal, was elected President; D. C. Morency and George Roy, Vice-Presidents; C. E. Gauvin, Secretary; I. P. B. Casgrain, Syndic. There are four candidates up for final and one for preliminary examinations.

PREVENT LEAKS IN SLATE ROOFING.

The worst leaks in slate roof come from improper position of the gutters, by which wet snow sliding from the roof is caught and held back. It soon freezes to the roof along the lower edge, the upper portion remaining free, and the water subsequently running down the slope, is caught in a long, deep pocket, in which it rises rapidly until its level reaches that of the upper edge of a course of slates or shingles, over which it pours in a sheet to find its

way into the rooms below. Next to this defect insufficient flashing in valleys is perhaps the worst, says T. M. Clark in "Building Superintendence." As metal is expensive, the roofer's interest is to save as much of it as possible, and the superintendent must consider the circumstances of pitch and extent of roof surface draining into the valley. In certain cases, where the roofs are large, this may be 18 inches or more in summer showers, and the only security is to make the valley flashings of corresponding size.

In estimating for slate work much depends on the quality of the slate and on the manner in which they are laid or "hung." The manner may be in the weathering and the lap, or in the finishing of the "tails" of the slates, as like shingles, they may be wrought with a circular, a pointed or an elliptical end, to which the cost will be very much increased.

THE THREE RIVERS IRONWORKS CO.
 Montreal Office: IMPERIAL BUILDING. THREE RIVERS, P. Q.

Cast Iron Water and Gas Pipes

of best quality, from 2 inches in diameter.
HYDRANTS, VALVES and GENERAL CASTINGS.

MONTREAL PIPE FOUNDRY CO., LTD

Successors to
DRUMMOND McCALL PIPE FOUNDRY CO., LTD.

GAST IRON WATER and GAS PIPES

and General Water and Gas Special Castings.

Prices on Application. Offices, Canada Life Building, MONTREAL.

THE STANDARD DRAIN PIPE CO.

OF ST. JOHNS, P. Q., (LIM.)



Manufacturers of
 Salt-Glazed
 Vitrified
**SEWER
 PIPES**

Double Strength
 Railway Culvert Pipes,
 Inverts, Vents,

AND ALL KINDS OF FIRE CLAY GOODS

ALEX. GARTSHORE, PRESIDENT.

J. G. ALLAN, SECY & TR.

JAS. THOMSON, VICE PRES'T & GEN'L MGR

ESTABLISHED 1870

INCORPORATED 1896

**GARTSHORE & THOMSON
 PIPE & FOUNDRY CO. LTD.**

MANUFACTURERS OF CAST IRON WATER & GAS PIPES, HYDRANTS, VALVES, SEWER PIPES, &c.

SPECIAL CASTINGS AND ALL KINDS OF WATER WORKS SUPPLIES.

HAMILTON, ONT.

MUNICIPAL DEBENTURES wanted for foreign clients. We can place Debentures direct with foreign clients without charge to municipalities.

: : : Commission allowed to persons introducing new business : : :

ÆMILIUS JARVIS & CO. (Member Toronto Stock Exchange) 23 King St. West, TORONTO
 Stock and Bond Brokers. Investment Agents.

ELECTRIC RAILWAY BONDS PURCHASED.

STOCK EXCHANGE ORDERS PROMPTLY EXECUTED.