

THE CANADIAN MONETARY TIMES AND INSURANCE CHRONICLE.

DEVOTED TO FINANCE, COMMERCE, INSURANCE, BANKS, RAILWAYS, NAVIGATION, MINES, INVESTMENT,
PUBLIC COMPANIES, AND JOINT STOCK ENTERPRISE.

VOL. II—NO. 16.

TORONTO, THURSDAY, DECEMBER 3, 1868.

SUBSCRIPTION
\$2 YEAR.

Mercantile.

Gundry and Langley.
ARCHITECTS AND CIVIL ENGINEERS, Building Sur-
veyors and Valuers. Office corner of King and Jordan
Streets, Toronto.
THOMAS GUNDRY. HENRY LANGLEY.

J. B. Boustead.
PROVISION and Commission Merchant. Hops bought
and sold on Commission. 32 Front St., Toronto.

John Boyd & Co.
WHOLESALE Grocers and Commission Merchants,
Front St., Toronto.

Childs & Hamilton.
MANUFACTURERS and Wholesale Dealers in Boots
and Shoes, No. 7 Wellington Street East, Toronto,
Ontario. 28

L. Coffee & Co.
PRODUCE and Commission Merchants, No. 2 Manning's
Block, Front St., Toronto, Ont. Advances made on
engagements of Produce.

J. & A. Clark,
PRODUCE Commission Merchants, Wellington Street
East, Toronto, Ont.

D Crawford & Co.
MANUFACTURERS of Soaps, Candles, etc., and dealers
in Petroleum, Lard and Lubricating Oils, Palace St.,
Toronto, Ont.

John Fiske & Co.
ROCK OIL and Commission Merchants, Yonge St.,
Toronto, Ont.

W. & R. Griffith.
IMPORTERS of Teas, Wines, etc. Ontario Chambers,
cor. Church and Front Sts., Toronto.

H. Nerlich & Co.,
IMPORTERS of French, German, English and American
Fancy Goods, Cigars, and Leaf Tobaccos, No. 2 Adelaide
Street, West, Toronto. 15

Hurd, Leigh & Co.
GILDERS and Enamellers of China and Earthenware,
72 Yonge St., Toronto, Ont. [See advt.]

Lyman & McNab.
WHOLESALE Hardware Merchants, Toronto, Ontario.

W. D. Matthews & Co.
PRODUCE Commission Merchants, Old Corn Exchange,
16 Front St. East, Toronto, Ont.

R. C. Hamilton & Co.
PRODUCE Commission Merchants, 119 Lower Water
St., Halifax, Nova Scotia.

Parson Bros.,
PETROLEUM Refiners, and Wholesale dealers in Lamps,
Cylinders, etc. Waterworks 51 Front St. Refinery cor.
River and D in Sts., Toronto.

C. P. Reid & Co.
IMPORTERS and Dealers in Wines, Liquors, Cigars and
Leaf Tobacco, Wellington Street, Toronto. 28.

W. Rowland & Co.
PRODUCE BROKERS and General Commission Mer-
chants, Advances made on Commissions. Corner
Church and Front Sts., Toronto.

Reford & Dillon.
IMPORTERS of Groceries, Wellington Street, Toronto,
Ontario.

Sessions, Turner & Co.
MANUFACTURERS, Importers and Wholesale Dealer
in Boots and Shoes, Leather Findings, etc., 8 Wel-
lington St. West, Toronto, Ont.

Mining.

PLUMBAGO.

Among the the most refractory substances in nature is the mineral plumbago, which is called black lead, graphite, and carburet of iron. Its name, plumbago, is derived from the Latin "plumbum ago," meaning, "I act like lead;" the name carburet of iron is more appropriate, as the mineral consists of ninety odd per cent. of carbon, and a fair per cent. of iron. The Brazilian plumbago, however, is pure carbon. It is quite soft, has a specific gravity of 2.09, a metallic lustre, a shining streak, and an iron-black to steel-gray color. It is opaque, soils paper, and feels greasy. When of laminated structure, its laminae are flexible; but it also occurs massive and granular. Its regular crystal form is a rhombohedron, but hexagonal tabular crystals are also found. It burns at a high temperature, without flame or smoke; is insurable before the blow-pipe, and not affected by acids. Its geological position is in the primary rocks or altered rocks lying at the base of the paleozoic series. It is mostly disseminated in calcareous or argillaceous shales. Extensive formations of plumbago occur in the Laurentian series of rocks in the north-eastern part of the State of New York, near the head of Lake Champlain, at Ticonderoga, Lake George, and in the range across the lake in Canada West; in the metamorphic region of Massachusetts, at Sturbridge. In the gneiss of North Carolina there is an extensive formation; large blocks have been quarried from this locality a few weeks ago. England boasts of the first known and best locality, at Borrowdale, in Cumberland, discovered in the year 1564, during the reign of Queen Elizabeth. It is found there in a greenstone rock, in nests and beds of clay. From the date of this discovery, a new epoch in the industrial operations of domestic economy was opened; and its importance was manifested by the mandate of the English Government prohibiting the exportation of graphite. In Bavaria, Germany, and Bolivia large deposits have been worked. Ceylon has furnished immense quantities of the best laminated graphite. In addition to those above mentioned, the United States furnishes many localities, among which we may mention Morrystown, N. J., Concord, N. H., Brandon, Vt., Amity and Hillsboro, N. Y. An extensive deposit has been lately discovered near Saco, Me. California has exported a thousand tons of superior graphite. Greenland, Spain, Mexico, Norway and Siberia have of late years supplied the world with excellent material. Canada has furnished beautiful specimens of laminated graphite from Burgess and Grenville, and much of it has been disposed of in this market. Other localities could be mentioned where plumbago has, from time to time been obtained in greater or less abundance. New York, Ceylon, Siberia and Bavaria are, however, the main sources of supply.

The principal uses made of plumbago in the arts are as follows:
The lead pencil, made from the best quality of graphite, has contributed more to the spread of the arts and sciences in modern times than any other article that can be mentioned among the contrivances in daily use. The black lead crucible

is of immense benefit to the brass-founder, assayer and steel manufacturer. Graphite is valuable as a lubricator, to prevent friction in machinery, the journals of engines, etc. To impart lustre to iron, especially stoves. In the process of electrotyping or depositing metals by galvanism, this material is useful to coat the wax of the moulds, and render it a conductor of the electric current. In the manufacture of green glass wine bottles, called hock bottles. In the manufacture of gunpowder, for glazing the grains. For "facing" in iron foundries. For lubricating the action in piano-fortes.

The discovery of the Borrowdale mine, in Cumberland, dispelled all other contrivances for writing, and the manufacture of lead pencils became quite universal. The mineral, as it came from the mine, was sawed into thin slabs and these again into long strips of the requisite size, which were, without further preparation, glued into the wood. These pencils are not surpassed in delicacy or smoothness, and to this day are made in the same manner as they were three hundred years ago. The black lead mine at Borrowdale had a yearly revenue of £40,000 sterling, from the monthly public sales. The mine was only allowed to be open six weeks in a year, that the market might not be overstocked. This great mine is now exhausted, and nothing but impure refuse is obtained from that celebrated locality. English manufacturers and men of science, have been searching for new supplies, but the discoveries in Spain, Ceylon, Greenland, California, France, Italy, Canada and the Atlantic States, made from time to time, have not yet produced a complete substitute for the Borrowdale mineral. Long before the final exhaustion of that mine, processes were invented for cleaning and refining the impure refuse which had been cast away, and improving coarser and less valuable minerals by its use.

In this way, although the Borrowdale lead could not be had in its palmy days, for less than \$10, gold, per pound, many manufacturers could obtain fair materials for 10 cents per pound.

It is, however, a remarkable fact that the Borrowdale graphite owed its fine quality rather to its peculiar style of aggregation than to its purity, as it was ascertained to contain more foreign matter than Ceylon and Canadian graphites. The attempts to refine and clear the impure graphite were carried on by the English mechanics, BRODIE and BROCKEDON, who contrived methods of overcoming the difficulties of the case. BROCKEDON was long occupied to render the powdered graphite coherent by submitting it to enormous pressure. It operated in vague, and the difficulty of introducing apparatus under the receiver of an air-pump was avoided by an arrangement of simple character. The powdered graphite was compacted by moderate pressure, and enclosed in very thin paper, which was glued over the whole surface, except a small hole for the air to escape from within. The block thus prepared was placed under an exhausting receiver, the air removed, and the orifice closed with a small piece of paper; and in this state it was left for twenty-four hours. It was then submitted to a regulated pressure once more; the different particles become agglomerated, and a black graphite was produced as solid as the natural mineral.

In 1795 an important discovery was made in France, which proved a great success, and has