

Without a bottle of Oil, in case of accident...
Every Thursday, At the Office, Garafaxa Street, Upper Town, Durham, Ont.
RATES OF ADVERTISING.
Professional and business cards one inch space and under, per year, \$4
T 1/2 inches or 3/4 lines Nonparal measure, 10
T 3/4 inches or 4 lines Nonparal measure, 10
Quarter column, per year, 18
Half column, 32
One column, 60
Do. six months, 32
Do. three months, 18
Casual advertisements charged 8 cents per line for the first insertion, and 4 cents per line for each subsequent insertion. Nonparal measure.
Ordinary notices of births, marriages, deaths and all kinds of local news, inserted free of charge.
Sole Auctioneers, ad. advertised three weeks for \$1, the advertisement not to exceed 12 lines.
Advertisements, except when accompanied by an advance payment, are not inserted until paid for, and charged at regular rates.
J. TOWNSEND, Publisher.

"THE GREY REVIEW"

Every Thursday, At the Office, Garafaxa Street, Upper Town, Durham, Ont.

Published by the Mississipp...
at \$2,500,000.

Professional and business cards one inch space and under, per year, \$4
T 1/2 inches or 3/4 lines Nonparal measure, 10
T 3/4 inches or 4 lines Nonparal measure, 10
Quarter column, per year, 18
Half column, 32
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J. TOWNSEND, Publisher.

BUSINESS DIRECTORY.

LEGAL
E. D. MACMILLAN,
ATTORNEY-AT-LAW, &c.,-Office
Opposite Parker's Drug Store, Upper Town,
Durham.
Money to loan. y10
C. E. JACKMAN, B.A.,
ATTORNEY AT LAW, Solicitor in Chan-
cery, Commissioner in B. R., Notary Public
Lower Town, Durham. y7th, 1879. y54

Frost & Frost,
BARRISTERS and Attorney-at-Law
Solicitors in Chancery, Conveyancers, etc.
Great South, have removed to Fishburn's, Office
open every Thursday afternoon.
ALFRED FROST, J. W. FROST, LL.B.
County Clerk's Attorney.
June 11th, 1880. y21

MEDICAL
DR. LIGHTBODY,
WILL be at his Office, Hanover, from 8
am. to Noon. Athol-st. 2nd Cor. N. E. R.
Residence, after hours, at the Dr. left of
Father's attended to. 172

F. Z. NIXON,
GRADUATE of Ontario Veterinary Col-
lege, Toronto.
VETERINARY SURGEON,
DUNDALK, Ont.
Will be at his Office, Dundalk, every Mon-
day and Friday, from 10 o'clock a.m. to 5 p.m.
Dundalk, March 20th 1879. y37

MISCELLANEOUS.
W. M. CLARK,
Architect and Builder,
MARKDALE.
Plans, Specifications, Estimates, &c.,
Furnished. Work supervised and Insured
at Chicago Moderate. 136

ALEXANDER BROWN,
PRICEVILLE, Ont.
ISSUER of Marriage Licenses, Fire and
Life Insurance Agent, Commissioner in B. R., &c.
Conveyancer, and Licensed Auctioneer
of the County of Grey.
Farmers, cottagers, and Land Sales, attended
to with punctuality and charges made very
moderate. 1880. fm-16

JOHN ROBERTSON
TAILOR AND CLOTHIER,
DURHAM ST., DURHAM.
Residence—Opposite the Canada Presby-
terian Church.

PHOTOGRAPHY.
IN thanking my many Customers for
the very liberal patronage received since com-
mencing business in Durham, I state that I am
now better than ever prepared to execute work
of a Superior Quality.
As usual COPYING and ENLARGING done
in A 1 style.
Picture Framing
Done in 35 different Styles.
T. DONAGHY,
Kelsey's old Stand,
Durham Nov. 18 1880 y172

AMERICAN JEWELRY,
Colored & Bright Gold Sets,
LOCKETS, SEALS,
RINGS, BRACELETS, CHAINS, &c.
Also Ladies' & Gents'
GOLD & SILVER WATCHES
Key and Stem Winders.
The latest in Hall, Parfleur and Pruck CLOCKS.
Some beautiful designs in Silver and Elec-
tric Piled Ware at
W. F. DOLLS', Fishelston,
especially selected.

The Grey Review.

Vol. IV. No. 41. DURHAM, Co. Grey, NOVEMBER 24, 1881. Whole No. 194.

CANADIAN BANK OF COMMERCE, DURHAM.
Capital \$6,000,000; Reserve \$1,400,000.
THIS BANK issues Letters of Credit on Great Britain and other Foreign Countries; buys and Collects Sterling Exchange; Issues drafts on New York and all parts of Canada.
DEPOSITS of \$4 and upwards Received, upon which the current rate of interest will be allowed.
COLLECTIONS MADE ON reasonable terms, and a General Banking Business TRANSACTED. y109

J. A. Halsted & Co., BANKERS, DURHAM.
Office in Middaugh's Block, on Garafaxa Street.
Deposits Received, and interest allowed at the rate of five per cent. per annum.
MONEY ADVANCED To farmers and business men on short dated interest notes or good collateral. Rate notes advanced at a fair valuation. State notes advanced at a fair valuation. Drafts issued at special Bank rates, payable at all Banks in Ontario and Quebec. Collections of notes and accounts on reasonable terms.
G. L. DAVIS, Manager.

R. DAVIS, FLESHERTON.
CONVEYANCER, Commissioner in B. R.
Lands Bought and Sold. Deeds, Leases, Will, &c. neatly and correctly prepared.
Auction Sales Attended. All Business Strictly Confidential.
CHARGES LOW. My Motto—Close and prompt attention to business and fair dealing with all men. 164

Hanover Carriage Works, HANOVER, Ont.
THE Subscriber is now prepared to supply all who may want Wagons, Carriages, Buggies, and all other articles in his line of business on the shortest notice and made of the best material. He is also Agent for Farming Implements. Remember the place next to Hotel, Main Street, Hanover, Ont.
R. McNALLY
Hanover, March 24, 1881. y159

Durham Planing Mill, SASH, DOOR AND Blind Factory.
ROBT. BULL!
BUILDER, Durham, keeps on hand a large stock of sash, doors and all kinds of building materials also a stock of Milling in Walnut, Rosewood, and Oak. Plans, specifications and bills of Lumber made on short notice. A full stock of Coffins, Caskets, Shrouds and Trim millinery on hand.

J. C. JOPP, TANNER, CURRIER and Dealer
Leather, Hides, Boots, SHOES, &c.
Has now on hand several hundred pairs of Factory Boots & Shoes, Suitable for all at very low prices.

Cash for Hides.
J. C. JOPP.
April, 1st, 1881.

W. CALDWELL, BOOT and SHOEMAKER,
SOUTH END, DURHAM, Near Cattle Yard Hotel.

JAMES HANNA
THE famous Cavalry Horse-herd has secured the services of a Good Waggon-maker.
Business prompt and Prices reasonable. Dundalk Sept. 2nd, 1880 h-128

POETRY
Three Words.
There are three lessons I would write,
In tracing of eternal light,
Upon the hearts of men.
Have Hope, though clouds environ round,
And Gladness hide her face in scorn,
Put thou the shadow from thy brow—
No night but hath its morn!
Have Faith! whoso'er thy bark is driven,
The calm'st diop, the tempest's mirth,
Know this! God rules the hosts of Heaven,
The inhabitants of earth.
Have Love! not love alone for one,
But men as men thy brother halt;
And scatter, like the burning sun,
Thy charities on all.

Dr. Wilson on the Relation of Science to Every-day Business.
OPPORTUNITY FOR ADDING SCIENTIFIC KNOWLEDGE TO SKILL.
Condensed from the Globe.

The lecture room in the School of Practical Science, College Street, Toronto, was filled Tuesday evening by an attentive audience while Dr. Wilson, President of the University College, delivered his lecture on "The Practical Uses of Science in the Daily Business of Life." The aim of the lecture, as will be found by perusal of it, was to show how intimately science is mixed up with our every-day work, and the strides science is making, how it is sometimes put to unworthy ends; and, having such an important relation to practical labour, how desirable it is that those engaged in skillful labour should know something of its principles. The lecture was the inaugural of a series which will be begun on Thursday. Dr. Wilson has a clear, energetic voice, and pronounces his words with marked distinctness. His lectures, which were frequently applauded:—

In the organization of the educational system of Ontario ample provision has been made for placing instruction within reach of all. Our public schools challenge comparison with those of any other land. For those who can give the requisite time our High Schools and Collegiate Institutes carry the training onward to a more advanced stage; and beyond this is the University College, with other Colleges of various kinds, to complete the work for all who have the ability and perseverance to follow out the work and win the rank of graduates in the faculties of the Provincial University. But there still remains the training of skilled workmen to turn scientific education to practical account. Apart from, and yet not without important relations to, some of the controversies begot by political and social changes commanding the attention of all at the present time, this subject of technical instruction occupies a prominent place. The waste of energy and the costliness of misdirected industry, as the fruits of unskilled labour, more and more compel the anxious consideration of manufacturers, men of business, and statesmen of true foresight. Economic industry more than ever demands the careful husbandry of all our resources, including the grand industrial army of mechanics, artisans and all who bring pit and muscle to the labour market as an article of hire. The distinction between skilled and unskilled labour is an all-important one; and moreover, which acquires ever new significance with the combined progress of free institutions and a higher civilization. But set before it is, to make each man the skillful labourer working intelligently in obedience to his own volition; or in co-operation, like the ingenious architects of the beehive and the anthill, for some worthy end. Daily we suffer for unskilled labour in ventilation, lighting, heating; in the drain of the plumber, the gas-fitter, the electrician, and the painter. Churches and lecture halls are built in which we cannot hear, and dwellings in which we cannot safely reside. But knowledge grows as it has ever done, as the true handmaid of freedom. It was so in the old days of Hellenic liberty, and among the free craftsmen of Florence and Genoa in the period of the great Italian Republics. It promises once more to be so among the ample freedom which we here enjoy. The skilled artisan may well be encouraged when he recalls in how many cases it has been to men of his own order, with few, if any advantages of training or culture—dependent for the most part on self-help—that we have been indebted for discoveries of highest practical value; from Stephenson, the printer's apprentice; to Faraday—the greatest of modern electricians—a mere journeyman book-binder. But however welcome such exceptionally gifted workers must ever be, what we now aim at encouraging is such a widely diffused knowledge of practical science among our working men as shall react in all ways in its application to the ordinary requirements of daily life. It has been due in no slight degree to British skill, workmanship and power of organization, and the conduct of men of true generalship, like the late Thomas Brassey, that the system of railway transport has developed from its first crude beginnings in the English coal districts, to the grand triumphs of industrial enterprise, which after interlacing the continent of Europe with a network of railways, have revived the long-obliterated footsteps of primal civilization, all the shrill notes of the locomotive

re-echo under the shadow of the pyramids and are familiar to the inert Hindu beyond the Indus and the Ganges. This element of scientific locomotion, in all the forms in which it enlists steam-power in its service, is the grand revolutionizer of the modern world. The old commonwealth of Christendom, as it emerged out of the Dark Ages consisted of a multitude of little isolated states, or feudal baronies, standing apart and each eyeing its neighbor with rooted jealousy and distrust. Unskilled labor enlisted in the service of some successful freebooter, perpetuated the rule of brute force, and ignorance with all its attendant privations, ruled supreme. Before the discovery of America the great trade of the civilized world consisted in the interchange of the products of Southern Asia with Europe through the commerce in the Levant. Tyre, once the mistress of the world's commerce, and the chief centre of industry perished; Alexandria in its turn gave way; Constantinople flourished for a time as the great mart of interchange between the East and the West, but it, too, sunk into decay; while the Grand Crusading armaments called forth the energy and spirit of skill of the Northern Italian sea-ports, which, in its time, grew up the great centres of intelligent industry of the middle ages, the Republics of Genoa and Venice, and that later Dante and Giotto, of Lorenzo Ghiberti, Michael Angelo, Benvenuto Cellini, and Galileo. Little States inferior in extent to the smallest of our Canadian Provinces, solely as the result of intelligent, skilled industry, in the unskilled energy to which freedom gives birth, furnished the merchants and manufacturers, the artists, armorers, goldsmiths, and bankers, and so became practically the masters of Europe. The little republics of Northern Italy, with their trade guilds and merchant princes, were of more weight in the councils of Europe than England under her warlike Edward III, or France under her keen-witted Louis XI. This he remembered, was mainly due to the skill of an industrious community of workmen. Labour was recognized by its intelligent application to the desired results. Every workman was master of his craft, and familiar with all the kindred arts which contributed to its development. The stonemason as well as the sculptor was a skilled draughtsman; the worker in brass and iron deemed it indispensable to master the science of metallurgy. The potter and glass-worker were adepts in all the varied requirements of ceramic and vitreous art; masters in all the chemistry that the old alchemists had then placed at their service. There was, in fact every workman found a pleasure in his work; and when mere unskilled labour was needed, as in the service of arms, the sturdy craftsman, who were themselves gallant burgher soldiers, enlisted the conditions to do the hiring task-work on which their skilled labor was too precious a thing to be squandered.

But no better argument in favor of the encouragement of industrial science can be urged than the loss which we are constantly incurring from the lack of knowledge on the part of the indefatigable pioneers who run too and fro ceaselessly through our own wide domain, and yet bring back to us such infinitesimal results of their wanderings. The shores and islands of Lake Superior abound in mineral wealth, and in clude within their limits some of the very richest silver and copper deposits in the world. They reveal, moreover, interesting evidence of the working of their mineral wealth in times long anterior to that voyage of Columbus which prepared the way for our entrance on this rich inheritance. The Athabasca region abounds with petroleum; the Moose river and its branches yield gypsum in abundance; the Mackenzie river and other localities beyond the fertile lands, the river beds of British Columbia, and even the sterile shores of Hudson Bay, abound in iron, lead, copper, and gold; and the great valley of the Saskatchewan discloses abundant traces of the most precious mineral coal. Our young adventurers who wander into the north of the indefatigable pioneers who provide themselves with useful arms and ammunition, stores, camping outfit, and all other accented requisites of the pioneer; but how many of them could tell gold from mica or pyrites, platina ore from iron sand, or many on their return could give any intelligent report as to the flora of the district, its peculiar botany, or the economic value of its timber, or furnish the slightest hint as to the geological character of the mineral resources of the regions which they have traversed. Their eye has been attracted, perchance, by specimens of white glaucous stone, but they cannot even guess if it be worthless quartz, a useful limestone, valuable felspar, or prized mineral phosphate of lime. They are wholly unable to say whether the district through which they passed was limestone or sandstone; of the Carboniferous age with possible promise of coal; the bituminous limestone and shales of the Devonian age, or the Laurentian rocks with their great beds of oxide of iron, their vast limestone strata, and more interesting than all, their strange Eozoon with its seeming glimpses of the first dawn of life on our planet. Abstract science stands far apart from the every-day business of life, and the industrious workman, absorbed in his usual but exacting duties, may claim exemption from any special call to explore its intricate byways.

Yet let no one give encouragement to the idea that his lack of advantage furnishes an adequate excuse for ignorance. Consider what has been accomplished by many with greatly less advantages than are within the reach of the very poorest Canadian. I remember the great traveller Livingston whom I knew in his earlier years, as a youth fresh from the weaver's loom, busy in Prof. Graham's Laboratory, University College, London, preparing himself for his great life-work. Or, to take examples which appeal more nearly to our conceivable disadvantage by Robert Dick, the poor baker of Thurso, as a geologist; and by the still poorer Thomas Edward, the shoemaker of Banff, as a naturalist. Nor can we safely admit of the idea that such studies are profitless. The relation which the abstract sciences bear to the everyday avocations of industrious communities like our own are the links of a continuous chain, forged not infrequently by the sagacity of some intelligent artisan like ourselves. The name of James Watt suggests itself to all minds as the ingenious mechanic who transformed the unheeded vapour of the teakettle into a mighty force to revolutionize the world. The century of the birth of another of Britain's skilled laborers, George Stephenson, has recently been celebrated. But the generation has not yet wholly passed away that witnessed the first practical application of his sagacious skill. And how vast are the results due to his mastery of applied mechanics. The revolutions wrought by an Alexander or a Napoleon are evanescent when compared with such comprehensive and enduring triumphs. In a thousand ways the steamship and the railway have changed the whole conditions of life. On our own continent they have converted its great rivers and lakes into the vital arteries of the Dominion, and are opening up to millions from the Old World an illimitable expanse of rich prairie land which, but for the fertile genius of Watt and Stephenson, must have remained a profitless wilderness abandoned to the buff and its savage hunters. Yet the germ of the steam engine, as the telescope and many another scientific achievement of modern centuries, had dawned on the mind of Roger Bacon in an age all incapable of turning his conceptions of science into any useful account. It was an untimely birth. The philosopher of that age was absorbed in the barren speculations of the scholastic quadrivium, while the artisan was a mere unskilled drudge, if not the poor serf toiling at the bidding of some scarcely more intelligent lord of the soil. The first steps in the evolutionary process through which the steam engine at length came into practical use may be traced in the thermometer and the air-pump of the seventeenth century. Then came the application of steam to pumps for mines; next the river steamer; then the railway locomotive; and then the indispensable handmaiden the electric telegraph—all begot by the application of forces lying idle around us, yet only needing a Franklin, a Watt, or a Faraday, a Watt and a Stephenson, to have turned them to the like account centuries before.

The ocean steamship, with its transit from Europe to America in eight or nine days, is a marvellous triumph, inconceivable even to the philosophic minds within our own recollection. The period, indeed, is not very long past since Dr. Lardner demonstrated to the entire satisfaction of himself and others, that it was impossible for a steamship to make its way across the Atlantic. Nevertheless, with all the marvel of its triumph, the ocean steamer assumed and flung overboard the voyage of Columbus which prepared the way for our entrance on this rich inheritance. The Athabasca region abounds with petroleum; the Moose river and its branches yield gypsum in abundance; the Mackenzie river and other localities beyond the fertile lands, the river beds of British Columbia, and even the sterile shores of Hudson Bay, abound in iron, lead, copper, and gold; and the great valley of the Saskatchewan discloses abundant traces of the most precious mineral coal. Our young adventurers who wander into the north of the indefatigable pioneers who provide themselves with useful arms and ammunition, stores, camping outfit, and all other accented requisites of the pioneer; but how many of them could tell gold from mica or pyrites, platina ore from iron sand, or many on their return could give any intelligent report as to the flora of the district, its peculiar botany, or the economic value of its timber, or furnish the slightest hint as to the geological character of the mineral resources of the regions which they have traversed. Their eye has been attracted, perchance, by specimens of white glaucous stone, but they cannot even guess if it be worthless quartz, a useful limestone, valuable felspar, or prized mineral phosphate of lime. They are wholly unable to say whether the district through which they passed was limestone or sandstone; of the Carboniferous age with possible promise of coal; the bituminous limestone and shales of the Devonian age, or the Laurentian rocks with their great beds of oxide of iron, their vast limestone strata, and more interesting than all, their strange Eozoon with its seeming glimpses of the first dawn of life on our planet. Abstract science stands far apart from the every-day business of life, and the industrious workman, absorbed in his usual but exacting duties, may claim exemption from any special call to explore its intricate byways.

But you must note in all this how much has depended on the intelligent observation of what was all the while within the reach of every one alike. It is the old story of "Eyes and no eyes." And yet rather than we contemplate ourselves as thus surrounded by might, uncess, silent forces—The essential element of combustion in the ocean; the earth itself one grand

electric machine; may we not rather compare ourselves to the faithless servant of the prophet, looking in vain for oil, until with instructed vision, he could discern the angelic hosts and chariots of fire which all the while had surrounded them on every side. We, too, need to have our eyes opened that we may see how we are environed by a multitude of forces none the less marvellous; and to learn that we only need the insight which science offers freely to all to discern their true value or practical uses. How many, therefore, are the hindrances and privations to which we submit from the lack of knowledge easily accessible to us. It is to the acquisition of this that you are now invited. Wholly apart from any immediate practical application or commercial value, the mere pleasure which the acquisition of knowledge confers is an abundant reward for any labor that it involves. But some comprehension of the practical operations of science is becoming indispensable to every man who aspires to anything higher than the mere unskilled drudge. The age is one of unparalleled progress. Science has advanced so fast that we have ceased to wonder at its strangest feats. Telegraphy flashes its messages from continent to continent, and we no longer marvel as we read in our daily extra of occurrences that Europe only, but in India or at the Cape. Nay, more, by means of the telephone we hold actual converse with distant cities, and are even prepared to learn without surprise of the Atlantic cable being superseded by an inter-oceanic telephone. But when we realize in how many ways it might have influenced the world's past, we may well ask what were the impediments to the earlier mastery of such momentous discoveries, not that we may thereby ensure the blindness of other generations, but that we may be stimulated to win for ourselves all that lies within our reach, to enlarge to the uttermost the acquisitions of this present, and so, as it were, to anticipate the grand results deferred on which such available in any earlier century as now, but it had already been brought into use in the mariner's compass. But it is more and more coming to be seen and felt that the wealth of the nations depends on the highest application of knowledge and skill in every department of industry. The old proverb which bids the shoemaker stick to his last is no longer accepted as the absolute embodiment of sound political economy. On the contrary, it is a very noticeable characteristic of this New World that men have cast off many an old prejudice; and among the rest, are accustomed to view not only without suspicion, but with genuine admiration, the gifted man of unobscured last, "who breaks his birth's invisible bar." The great missionary and linguist, Wm. Carey, was enraptured at his own recollection of a collier! His name ranks now among the benefactors of India and the world. Yet, in a sense, it is well that the collier do stick to his last; that each one of us having chosen his own special work, throw his whole energy into it, and so making the very best of possible shoes, or whatever else we undertake; instead of working in shoddy and devil's dust, and robbing in the end the devil's wages, as so much workmanship deserves, and is sure to do. The course of evening lectures which are now to be proceeded with, are not at all designed to be popular in the sense of providing a mere evening's entertainment, as is the avowed purpose of most of the lectures courses announced for our winter evenings. Their aim is to offer to the intelligent artisan, and to all other practical students, the elementary knowledge requisite to start them on lines of enquiry leading to systematic research in every branch of technology specially adapted to the useful handicrafts. The knowledge thus communicated in relation to geology, chemistry, natural history, to natural philosophy and mechanics, though necessarily—in so far as these evening lectures are concerned—elementary, will be carried so far as to be of essential practical utility to the brass-founder, the plumber, the carpenter, and builder; while it will, it is hoped, prove in some cases only the introduction to more advanced studies. All who hereafter may be tempted to devote the requisite time to it will find in the daily work of this School of Practical Science applied mathematics taught by experimental instruction in the laws of statics and dynamics, with special reference to engineering embraces both field and office work, chain and compass surveys, plotting and mensuration. It includes applied mechanics, treats of the theory of the strength of materials, and the methods and processes of construction, with much else of essential value to hundreds of the workmen of Toronto. So, in like manner, the elementary course of lectures on chemistry to be given in successive evenings in the present winter will form a fit beginning to the medical or veterinary student, to the druggist, the painter, the metal worker, and in the study of that most useful science. Without going further, he will find that he has learned much, while to those whose aim at a more extended and practical mastery of chemistry, the detailed instruction in the laboratory, as taught in the morning classes, devoted to applied chemistry, will introduce them to a knowledge of the metallurgy of iron and steel, of lead, copper, silver, gold; or again, to the chemical constituents of mortars, cements, artificial stones, etc., to paints and all preservatives of wood, stone and iron. So also it is with the departments of natural history, geology and mineralogy. Practical biology will include the use of the microscope and the study of animal and vegetable tissues; while geology embraces in its laboratory work the use of the blow-pipe, assaying of ores and metals. At the same time it would be to mislead you if I led you to assume that the practical laboratory with all the processes of the ap-

ONTARIO ARCHIVES
TORONTO