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Nec araneorum sane textus ideo melior, quia ex se fila gignunt, nec noster vilior quia ex alienis libamus ut apes.

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LECTURE

Delivered before the Miramichi Mechanics Institute, during the last season,

BY MR. JAMES MURRAY,

NEWCASTLE.

Home Manufactures deserve our most serious attention, as by their means we will be enabled to retain our young men, afford them ample remuneration for their labour, and turn the profits of our trade to good account; and it is an undisputable fact that no country can either progress or become independent of others, without them. I am well aware that many contend there would be no consumption, neither will there, if our population have to go elsewhere to earn a livelihood. But I venture to assert that a manufactory of one description of articles calls for the establishment of others; as for example, can a saw-mill be kept in operation without giving employment to a blacksmith, and he in his turn to others; and I challenge those who oppose Railroads to point out an instance where they have been introduced without improving the country; on the contrary, they have enhanced the value of property, and created new sources of wealth and industry.

The question will very naturally arise, How is all this to be accomplished? I reply, by determination, action, and co-operation. It is a cause in which we are all interested, and one in which we should all take a part; and as the fair sex are never backward in any good work, it must be acknowledged that their countenance and support would be of essential service in bringing about so desirable an object. Need I refer you, as a proof of their energy and virtue, to Veturia, who proved the salvation of Rome; the Maid of Orleans, who, by her daring heroism, delivered France from the British; the daring exploits of Grizzel Cochrane, in saving her father's life, and the bravery of Grace Darling. Ought not these achievements to prove stimulants to "the lords of creation," and rouse them from their apathy. They may rest assured, that he who invests his means and labour in the soil, will find that it is no insolvent bank, and he will at the same time have the satisfaction of knowing that he is becoming independent. And while you are thus enriching yourselves, and improving the country, you are contributing to the restoration of a circulating medium, and dealing destruction to the paralyzing Order system.

If we do not progress, we are not keeping pace with the spirit of the age in which we live. Look at less favored lands, the State of Maine for instance; and we will find the balance against us. Look at Holland, reclaimed from the ocean, fenced in by her embankments and mud walls; literally a smiling garden, where once there was nothing but bogs and ocean waves. Look at Switzerland, where an industrious but hardy peasantry, contending against avalanches of snow and ice, and masses of falling rock, have cut terraces among the hills and mountains, and planted them with vines.

Agriculture has with us been too long looked upon as a secondary pursuit, instead of being considered of primary importance. So essential and necessary is agriculture, in the estimation of the Chinese, that their Emperor is required to sow yearly a quantity of seed.

Good Roads, Manufactories, and Agriculture, are the great causes of progressive improvement in any country.

Who are they that have enabled it to be said, that the sun never sets on the British dominions? England's banner floats in every climate, the sails of her ships whiten every sea, she holds intercourse with the whole world, and the victories of her fleets have enabled her navy to sail triumphant, and make Britain emphatically the "land of the free and home of the brave." Who are they, I ask, who have done all this? They who have tilled her fields, and reaped their golden fleece

in autumn; they who have excavated her mines, and raised their hidden treasures; those who have erected her factories, constructed their machinery, and kept them in operation; those who have built, equip, and man her ships; those who construct her railroads. In a word, she owes in a great measure her power and greatness to the exertions of her hardy sons of toil, who have brought her machinery to such exquisite perfection, that it seems almost to usurp the functions of human intelligence. But we need not wonder at the elevated position of this seagirt isle, when we find her in possession of that proud trophy of human intellect, the miracle-working Steam Engine, raising fifty millions pounds of water through the space of a foot, by the combustion of a single bushel of coal. Is not this a forcible exposition of the truth, that labour overcomes all difficulties. Is there any to be found so dull and insipid, as not to admire the noble steamship, which braves alike the battle and the breeze. In vain do the elements combine to resist her advancing prow. She marshals the fleet when their sails are furled; she goes onward like a giant rejoicing in his strength, annihilating as it were time and space, and bridging the broad Atlantic wave.

Few men, and least of all those in exalted stations, have so distinguished themselves in the pursuit of knowledge, as Peter the Great of Russia. You have been told of many mechanics of humble origin, who have risen to eminence by their own persevering exertions; but his history presents to us the example of a monarch becoming a mechanic, in order to elevate and improve his country. Although born a savage, he directed his energies to the accomplishment of the most extraordinary enterprise in which a monarch ever engaged, being nothing less than to change entirely the most settled habits and prejudices of his subjects, and not so much to reform them, as to transform them, almost by main force, from a barbarous into a civilized people. For the sake of brevity, suffice it to say that he travelled other lands for the purpose of storing his mind with useful knowledge, for the benefit of his country. He passed several months at Saardam, in Holland, during which time he bore a considerable part in the building of a vessel, which, when completed, was named the St. Peter, and was purchased by the royal person whose hands had thus helped to put its timbers together. For several years after this his chief attention was given to maritime affairs; although his first ships were all of foreign construction, and it was a considerable time before any issued from his own docks. From so small a beginning Russia has become one of the greatest naval powers in the world. Peter's history, perhaps, presents us with as remarkable a case of the conquest of difficulty in the pursuit of knowledge as it would be possible to quote. In his noble resolution to educate not only himself but his country, he had to contend with obstacles at every step; obstacles which nothing could have overcome but that determination to succeed which subdues all things.

My limits will not allow me to enlarge further. I shall merely observe that the achievements of man, by the aid of Scientific Knowledge, are such, that we can look in no direction without viewing the progress of science. Do the elements vent their rage? Then does it provide for and protect him. Does he require speed? It will convey him with the velocity of the tempest. Does darkness envelope the material world with its sable curtain? It gives him the light of noon day. Does he require strength? It arms him with a power which nothing can resist; it aids and directs him in the erection of the stately edifice, with buttress, battlement, and tower, or with Iona's graceful form, or Corinth's lovely flower. Does he descend into the earth? It will accompany him, and enable him to treat his enemy, the fire damp, with contempt.

Does he wish to ascend? By it he can soar with a flight more adventurous than that of the eagle; and by it he can construct bridges from mountain to mountain, though foaming cataracts intervene. And should a frowning Providence thwart his course on the heaving bosom of the angry main, there will Science expose to his view the warning light; or do the elements combine to destroy him? even then she rescues him from a watery grave. Does he wish to retain a correct likeness? she will cause the light of heaven to execute his will. Does he wish to extend his vision? she will lay the immensity of space open to his view, or expose objects so minute, that without her aid he could form no conception of them. In a word, her blessings are so numerous and diversified, that it is beyond my power even to enumerate them.

The Press, however, is perhaps the best and choicest gift Science ever bestowed on man. It is the very store-house and fountain head of improvement, the recorder and disseminator of knowledge, the renovator of man, the nursery and guardian of liberty, the scourge, the dread, and the foe of tyrants, and the bulwark of Justice. The Press has justly been styled the Fourth Estate, the great Magna Charta of British rights; it is above and beyond praise, and independent of all censure; and he who tampers with its rights, will find to his sorrow that it is a two-edged sword.

How wonderful are the laws which regulate the motions of fluids. Is there anything in all the idle books of tales and horrors more truly astonishing than the fact that a few pounds of water may, by mere pressure, without any machinery, being placed in a particular position, be made to produce an irresistible force. What can be more strange than that an ounce weight should balance hundreds of pounds, by the intervention of a few bars of thin iron. Observe the extraordinary truths which optical science discloses; can anything surprise us more than to find that the colour of white is a mixture of all others; that red, and blue, and green, and all the rest, by being merely blended in certain proportions, form what we had fancied to be no color at all.

Chemistry is not behind in its wonders, for it teaches that the diamond is formed of the same material as coal; that water is chiefly composed of an inflammable substance; that acids should be almost all formed of different kinds of air, and that one of these acids, whose strength can dissolve any of the metals, should be of the self-same ingredients with the common air we breathe; that salts should be of a metallic nature, and composed in great part of metals, fluid, like quicksilver, but lighter than water, and which, without any heating, take fire without being exposed to the air, and by burning form the substance which abounds in salt-petre, and in the ashes of burnt wood. These things, surely, are sufficient to excite wonder and admiration in every reflecting mind; and yet these are trifling when compared with the prodigies which Astronomy opens to our view; the enormous masses of the heavenly bodies; their immense distance, their countless numbers, and their motions, whose swiftness baffles the imagination. Electricity, the light that is seen on the back of a cat when slightly rubbed on a frosty night, is the same as the lightning of the clouds, and confirms the theory of the renowned Franklin.

I cannot mention that name without adding a trifling meed of praise to him who, by the mere force of genius, and the exertion of intellect and persevering study, acquired high repute and exalted knowledge. He contributed much to bring electricity into notice, and by the brilliancy of his discoveries, and his own acute powers, taught how lightnings gleamed, and thunders rolled, by the all-potent influence of the electric fluid, and proved it beyond a doubt, for with his electric kite he

drew the lightning from the skies, submitted it to experiment, and found it similar to that produced by the electrical machine. Hence he formed his theories, and established a science, which, by a series of recent improvements, has become of paramount importance in the transmission of intelligence to any part of the world, and which, for speed, mocks the flight of the fleetest wing, and conveys a thought from the Indus to the pole.

Plants breathe like ourselves, but differently by day and by night; the air which burns in our lamps enables a balloon to mount, and causes the globules of the dust of plants to rise, and is the immediate cause of vegetation. Nothing can at the first view appear less likely to be caused by the same thing, than the process of burning and breathing—the burning and rusting of metals—the influence of a plant on the air at any time, and of a body burning in that air; and yet all these are the same operation. It is an undeniable fact, that the very same thing which makes the fire burn, makes metals rust, forms acids, and causes plants and animals to breathe; that these operations, so unlike to common eyes, when examined by the light of Science, are the same—the rusting of metals—the formation of acids—the burning of inflammable bodies—the breathing of animals—and the growth of plants by night. Is it not pleasing to find the same substance in various situations extremely unlike—to meet with fixed air as the produce of burning, of breathing, and of vegetation—to find that it is the cheke-damp of mines—the bad air in the grotto at Naples—the cause of death in neglected brewer's vats, and of the brisk and acid flavor of Seltzer, and other mineral springs? Nothing can be more unlike than the working of a vast steam engine, and the crawling of a fly on the window; we find that these two operations are performed by the same means—the weight of the atmosphere; and that a sea-horse climbs the ice-hills by no other power. Is there in all the fairy tales that ever were written, anything more calculated to arrest the attention, and to gratify the mind, than this most unexpected resemblance between things so unlike to the eye of the ordinary beholder. Knowledge is the handmaid, if I may so speak, who attireth the charms of nature; and all which beautifies the face of the country, all that makes the city magnificent, all that adorns our dwellings, all that makes our persons comely to look upon, all that fills the market places with wares, and varies the occupation of human life, are the works of Knowledge; without which men would be reduced to a few scattered tribes of savages, fighting with brute beasts for the mastery of the woods and caves in which they dwelt; aye, and though every thing we now behold were swept away with the besom of destruction, and Nature stripped of her decorations, and Art divested of her resources, still, there is such a life-giving power in this immortal faculty of Knowledge, that she would bring again in a few years the beauties of Nature, and re-invent the resources of Art, and cover the earth with her beautiful flowers and pleasant palaces.

A NEWSPAPER IN A FAMILY.

One of the greatest advantages of a newspaper to a family of children is, the constant stimulus which the facts and statements it contains gives to the acquisition of historical, scientific and geographical knowledge. Who, then, that is a father, will be so penurious, not to say unnatural, as to refuse the tender objects of his affection and responsibility such an important aid to their advancement.

When the Mexican war broke out, a friend of ours joined the army "just for glory," and he got it; one broken arm, a pair of crutches, and a chronic diarrhoea.

Tom Hood, the ever truthful and merry Tom Hood, defines a laugh to be "the full blown flower of which a smile is the bud."

Marriage has been called a prodigal desire on the part of a man to pay some young woman's board.