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THE GIFTS OF SCIENCE TO ART.

STEAM—DAGUERRETYPE—LIGHTNING CONDUCTORS—
THE SAFETY LAMP—ELECTRO-PLATING AND GILDING
—THE ELECTRIC TELEGRAPH.

Each succeeding age and generation leaves behind it a peculiar character, which stands out in relief upon its annals, and is associated with it for ever in the memory of posterity. One is signalized for the invention of gunpowder, another for that of printing; one is rendered memorable by the revival of letters, another by the reformation of religion; one epoch is rendered illustrious by the discoveries of Newton, another by the conquests of Napoleon. If we are asked by what characteristic the present age will be marked in the records of our successors, we answer, by the miracles which have been wrought in the subjugation of the powers of the material world to the uses of the human race. In this respect no former epoch can approach to competition with the present.

Although the credit of the invention of the steam-engine must be conceded to the generation which preceded us, its improvement and its most important applications are unquestionably due to our contemporaries. So little was the immortal Watt himself aware of the extent of the latent powers of that machine, that he declared, upon the occasion of his last visit to Cornwall, on ascertaining that a weight of twenty-seven millions of pounds had been raised one foot high by the combustion of a bushel of coals under one of his boilers, that the *ne plus ultra* was attained, and that the power of steam could no further go. Nevertheless, the Patriarch of the steam-engine lived to see forty millions of pounds raised the same height by the same quantity of fuel. Had he survived only a few years longer, he would have seen even this performance doubled, and still more recently it has, under favorable circumstances, been increased in a threefold ratio.

But it is not in the mere elevation of mineral substances from the crust of the globe, nor in the drainage of the vast subterranean regions which have become the theatre of such extensive operations of industry and art, that steam has wrought its greatest miracles. By its agency coal is made to minister in an infinite variety of ways to the uses of society. Coals are by it taught to spin, weave, dye, print, and dress silks, cottons, woollens, and other cloths; to make paper, and print books on it when made; to convert corn into flour; to press oil from the olive, and wine from the grape; to draw up metal from the bowels of the earth; to pound and smelt it, to melt and mould it; to forge it; to roll it, and to fashion it into every form that the most wayward caprice can desire. Do we traverse the deep?—they lend wings to the ship and bid defiance to the natural opponents, the winds and the tides. Does the wind-bound ship desire to get out of port to start on her voyage?—steam throws its arms round her, and places her on the open sea. Do we traverse the land?—steam is harnessed to our chariot, and we outstrip the flight of the swiftest bird, and equal the fury of the tempest.

The great pyramid of Egypt stands upon a base measuring seven hundred feet each way, and is five hundred feet high. According to Herodotus, its construction employed a hundred thousand labourers for twenty years. Now we know that the materials of this structure might be raised from the ground to their present position by the combustion of four hundred and eighty tons of coals.

The Menai Bridge consists of about two thousand tons of iron, and its height above the level of the water is one hundred and twenty feet. Its entire mass might be lifted from the level of the

water to its present position by the combustion of four bushels of coal!

Marvellous as the uses are to which heat has been rendered subservient, those which have been obtained from light are not less so. Ready-made flame is fabricated in vast establishments, erected in the suburbs of cities and towns, and transmitted in subterranean pipes through the streets and buildings which it is desired to illuminate. It is supplied according to individual wants, in measured quantity; and at every door an automaton is stationed, by whom a faithful register is kept of the quantity of flame supplied from hour to hour!

It resulted from scientific researches on the properties of solar light, that certain metallic preparations were affected in a peculiar manner by being exposed to various degrees of light and shade. This hint was not lost. An individual, whose name has since become memorable, M. Daguerre, thought that as engraving consisted of nothing but the representation of objects by means of incisions on a metallic plate, corresponding to the lights and shades of the object represented—and as these same lights and shades were shown by the discoveries of science to produce on the metals specific effects, in the exact proportion of their intensities—there could be no reason why the objects to be represented should not be made to *engrave themselves* on plates properly prepared!! Hence arose the beautiful art now become so universally useful, and called after its inventor—DAGUERRETYPE.

But of all the gifts which Science has presented to Art in these latter days, the most striking and magnificent are those in which the agency of electricity has been evoked.

From the moment electric phenomena attracted the attention of the scientific world, the means of applying them to the useful purposes of life were eagerly sought for. Although such applications had not yet entered into the spirit of the age as fully as they have since done, it so happened that in this department of physics, a volunteer had enlisted in the army of science, the characteristic of whose genius was eminently practical, and soon achieved, by his discoveries, an eminence to which the world has since offered universal homage.

Art often presses into its service the discoveries of Science, but it sometimes provokes them. Art surveys the fruit of the toil of the philosopher, and selects such as suits her purposes; but sometimes not finding what is suitable to her wants, she makes an appeal to Science, whose votaries direct their researches accordingly toward the desired objects, and rarely fail to attain them.

One of the most signal examples of the successful issue of such an appeal presents itself in the *safety-lamp*.

The same gas which is used for the purpose of illumination of our cities and towns (and which, as is well known, is obtained from coals by the process of baking in close retorts) is often spontaneously developed in the seams of coal which form the mines, and collects in large quantities in the galleries and workings where the coal-miners are employed. When this gas is mingled with common air, in a certain definite proportion, the moisture becomes highly explosive, and frequently catastrophes, attended with frightful loss of life, occurred in consequence of this in the mines. The prevalence of this evil at length became so great, that Government called the attention of scientific men to the subject, and the late Sir Humphrey Davy engaged in a series of experimental researches with a view

o the discovery of some efficient protection for the miner, the result of which was, the now celebrated safety-lamp.

The instrument by which he accomplished this was as remarkable for its simplicity as for its perfect efficiency. A common lantern, containing a lamp or candle, instead of being as usual enclosed by glass or horn, was enclosed by wire gauze of that degree of fineness in its meshes which experiment had proved to be impervious to flame. When such a lantern was carried into an atmosphere of explosive gas, the external atmosphere would enter freely through the wire gauze, and would burn quietly within the lantern; but the meshes which thus permitted the cold gas to enter, forbade the white hot gas within to escape without parting with so much of its heat in the transit as to deprive it of the character and properties of flame; so that although it passed into the external explosive atmosphere, it was no longer in a condition to inflame it.

The lamp thus serves a double purpose; it is at once a *protection* and a *warning*. It protects, because the flame cannot ignite the gas outside the lantern. It warns, because the miner, seeing the gas burning within the lantern, is informed that he is enveloped by an explosive atmosphere, and takes measures accordingly to ventilate the gallery, and meantime to prevent unguarded lights from entering in.

As wire gauze drains flame of its danger in the safety-lamp, it drains air of its poison by another felicitous application of a physical principle in the case of the needle-grinder's mask. In that department of industry, the health of the artisan was impaired, and the duration of his life abridged, by respiring continually, while at work, an atmosphere impregnated with steel-dust. A mask was invented composed of a gauze formed of magnetized wire, through which the artisan was to breathe. The air in passing from the external atmosphere to the mouth and nostrils, left all the steel-dust which it held in suspension on the wire of the mask, from which, from time to time, it was wiped off as it accumulated.

Electricity has proved a fertile source of benefits conferred on Art by Science. When a galvanic current is passed through a fluid which holds in solution any substance which has the property of being attracted by one of the poles of the battery, such substance will desert the fluid, and collect upon any object, being a conductor, which may be used to form the attracting pole.

This fact has been already variously applied in the arts, and in no case with greater felicity and success than in the process of gilding and silvering the baser metals.

Let us suppose that it be required to gild an object formed of silver, copper, or any inferior metal. The object being first fabricated in the form it is designed to have, is submerged in a fluid which holds gold in solution. It is then put in connection with the attracting pole of the galvanic battery, while the solution of gold is put in connection with the other pole. The galvanic current thus passing through the solution, will decompose it, and the gold will attach itself to the metallic object, which, in a few seconds, will be sensibly gilt.

An object may be silvered in some parts, and gilt in others, by a very simple expedient. Let the parts intended to be gilt be coated with some non-conducting substance, not affected by the solution of silver, and let the object be then immersed in the solution, and put in connection with the galvanic battery, as already described. The parts not coated will then be plated. Let the parts thus plated be now coated with a non-conducting substance not affected by the solution of gold, the coating previously applied being removed, and let the object be immersed in a solution of gold, and being connected with the battery, the parts not coated will be gilt.

But of all the applications of electric agency to the uses of life, that which is transcendently the most admirable in its effects, and the most important in its consequences, is the electric telegraph. No force of habit however long continued, no degree of familiarity can efface the sense of wonder which the effects of this most marvellous application of science excites.—*Dublin University Mag.*

FREE PUBLIC EDUCATION IN CANADA.

Extract from the Lecture of John Kirkland, Esq., Local Superintendent of Guelph and Puslinch.

Men who would submit to be taxed without murmuring for the purpose of carrying the horrors of war into the borders of a hostile nation, losing sight of the great prospective blessings which the universal diffusion of education would impart, were grudging

the possible appropriation of a part of their Educational tax to the benefit of their neighbours' children. He said the possible appropriation, because, as a general principle, the changes which took place in families caused almost any given family, which might happen at one time to pay more than it received, to be almost certain, in the revolution of a few years, to receive more education than it paid for; so that in the end, even on the score of profit and loss, in mere dollars, the account was almost sure to be balanced. Such penny-wise persons, however, might rest assured that, though they might possibly succeed in retarding the adoption of the Free School System in their own locality, and thus ensure to themselves the censure of posterity whose interests they had endeavoured to sacrifice, they could not altogether prevent it. The signs of the times were so unequivocal as to the universal adoption of the Free School System, that he hazarded nothing in saying it was a mere question of time: but at the same time on the prompt solution of that question depended the intellectual and moral status of the coming generation. Any system of practical education would be seriously defective, which did not provide for the development of the essential attributes which crowned man with glory and honour, and sustained him in his proud position as "lord of creation," in accordance with the great principle, that whilst the laws of God were all true and exact, they were so made to operate as to give expansion to every created thing up to the full elevation of its nature; and that not in a sort of indefinite aggregate condition of the being as a whole, but in the full development of every separate part or faculty in its due proportion—physical, mental, moral, and spiritual. Supposing the physical effects of the fall of man to remain unchanged, if human sorrows were limited to such as necessarily flowed from that source, they would be immeasurably lighter than they were; and true wisdom would direct educational efforts with a view to arrive at such a consummation as nearly and as quickly as possible. The prophetic Scriptures shadowed forth such a state of things; and its advent, looking to the operation of cause and effect, with the sanction and blessing of Almighty God upon the agencies which, for the first time in the world's history, were being put into operation on a large scale, was not so chimerical or distant as it would appear at first sight. Were we to draw an imaginary picture of the state of human society, on the supposition that man had retained his original innocence, in combination with the expansion of the faculties of every human being, "up to the full elevation of his nature," and then make the necessary deductions for the physical curse, we might arrive at a pretty definite idea of the practical elevation of which human society was susceptible. We might suppose that whilst man's sensual and intellectual pursuits were regulated by moral rectitude, his necessary intellectual and bodily exertions would neither be oppressive nor of doubtful results. In the absence of the curse, regular attention would secure an un-failing supply of food; in the universal prevalence of competence, morality, and content,—every man's conscience being a law unto himself,—there would be no necessity for written laws being added, "because of transgression," or for the education of "gentlemen learned in the law," or for complaints of the exorbitance of lawyers' charges, or for constables, magistrates, bailiffs, jailers, and those periodical displays of human depravity and legal cunning, furnished by assizes and quarter sessions, in which the concentrated power of society had to deal with the erring man whom, when a child, it had neglected to train "in the way he should go," and to punish him as a felon at four-fold the cost which would have been required to furnish him with knowledge and motives to become a blessing to his generation. Despotism and anarchy, civil wars and international disputes would be out of the question; and naval armaments would not be needed; the butchery of battles and sieges would not cause the blood of human brotherhood to cry from the ground, nor "soldiers of fortune" to "seek the bubble reputation at the cannon's mouth;" nor would the resources of nations be laid under contributions for generations to come, to gratify the passions and carry out the schemes of unprincipled and unfeeling men; nor have to contend in self-defence, against unjust aggressions. The expenditure of public property on the erection of prisons, fortifications, penitentiaries, poor-houses, or the pensioning of those wrecks of human beings whom the fiendish appliances of war had not dispossessed of life, would have been equally avoided; and every day's walk, and every dollar expended, would, like the rain and the sunshine, have brought blessing to man.

The illimitable range of human interests, enjoyments, distresses, and responsibilities,—sensual, social, mental, and moral,—demanded that the intellectual faculties should be as fully developed as opportunity would permit; and that the mechanical means for the transmission of thought from mind to mind should combine distinctness, variety, and facility of expression. Man possessed bodily organs fitted for the purpose; but, unlike the lower animals, the powers of those organs were not so uniformly or instinctively capable of fulfilling their functions. The local associations of the individual determined the mode and extent of their development. They, as well as the moral and intellectual faculties, required to be cultivated by precept and example; in other words, their correct exercise constituted one part of practical education. It was true the uneducated rustic, who had never travelled beyond the vicinity of his own birth-place, found no difficulty in conversing for the necessary purposes of common life, so as to be understood, and if a stranger happened occasionally to visit the unfrequented locality, his different modes of thought and expression called forth expressions of vulgar merriment, and perhaps contempt, at his supposed affectation; but let the rustic leave his own locality, and he became “the observed of all observers,” finding the laugh turned upon himself; or if he wished to correspond with distant persons by letter, he must either employ some person to write for him, or, if he could write at all, and determined to do so in his own imperfect way, his bad spelling, his ill-chosen words, and almost unintelligible sentences would render it almost impossible for his puzzled correspondent to come at his meaning. In addition to the practical difficulties which educational deficiencies threw in the way of intercourse, they made the uneducated man a butt for ridicule of the aristocrat—an object of pity to the philanthropist: a cat’s paw for the unprincipled politician; a pigeon for the sharper, and the helpless prey of state-craft, law-craft, and priest-craft.—[Reported in the Guelph Advert.

THE BIBLE AND EDUCATION.

When men speak of discarding the Bible from Education, it is enough to set the world on fire. Where, in the wide earth, is there a book like it? In what library will you find such narratives, such wisdom, such pictures of domestic life, such panoramic exhibitions of natural history, such glowing poetical visions, such inimitable simplicity and powers of diction? There is not a book in the world to be compared with it, even although it were not the book of God; and admitting it to be His, kings may well place their crowns beneath it, and philosophers sit with it on their knees, and merchants carry it with them in their travels, and sailors and soldiers deposit it in the safest corner of their chests, and missionaries go forth with it as beyond price, to give it to the heathen. Take it away and it would be as if you were to quench the sun, so that the gloom and confusion of a second chaos would fall upon the condition and prospects of mankind.

Sometimes it would appear as if it were supposed that, in contending for the fundamental use of the Bible in the work of education, we mean that the Bible should supplant everything else. But there can be no greater mistake than this. Take the Bible, we say, for what it is,—a book of religion and morality. In connection with these, it contains some history, poetry, and prophecy; but its proper character is, that it is a popular book, that is, a book designed for the mass of mankind on these subjects. If you can educate the young without religion and morality, then you may educate them without the Bible; but if you cannot, then the Bible you must have, because it is, in all respects, incomparably the best, and in many most important respects, the only book on these subjects. * * * *

Let parents and teachers consider their responsibility, as superintending the formation of character in the young. They have a prodigiously important trust in hand; and all their schemes and labours distinctly manifest that they are alive to this fact. Let the young themselves awake to the obligation of rightly improving the precious season allotted for education, and now fleeting so rapidly away; and, above all, let them be careful to listen to the voice of God, proclaiming in his Word, that “the fear of the Lord is the beginning of wisdom.” Never can they learn with so much ease and proficiency as now; and their study should be to learn the best things, and to learn them with diligence and care. Let Christians every where awake to the commanding claims of the religious education of the young. Other means of doing good are not to be

neglected; but this should occupy a very high and prominent place. “Educate, educate!” is a voice that comes from every corner of the land on the ear of patriotism; and that education may accomplish its lofty end, in forming the character, and preparing for a holy and spiritual life, the Bible must be its basis, and eternity the sole boundary of its aims.—*Scottish Christian Herald.*

TEACHERS MAKING EXCUSES.

Read the following hints to teachers, and avoid making excuses for the defects of your school.

I think that it was Franklin that said, “A man who is good for making excuses is good for nothing else.” I have often thought of this as I have visited the schools of persons given to this failing. It is sometimes quite amusing to hear such a teacher keep up a sort of running apology for the various pupils. A class is called to read. The teacher remarks, “This class has just commenced reading in this book.” Stephen finishes the first paragraph, and the teacher adds, “Stephen has not attended school very regularly lately.” William reads the second. “This boy,” says the teacher, “was very backward when I came here—he has but just joined this class.” Mary takes her turn. “This girl has lost her book, and her father refuses to buy her another.” Mary here blushes to the eyes; for though she could bear his reproof, she has still some sense of family pride; she bursts into tears, while Martha reads the next paragraph. “I have tried all along,” says the teacher, “to make this girl raise her voice, but still she will almost stifle her words.” Martha looks dejected, and the next in order makes an attempt.

Now the teacher, in all this, has no malicious design to wound the feelings of every child in the class, and yet he has as effectually accomplished that result as if he had premeditated it. Every scholar is interested to read as well as possible in the presence of strangers; every one makes the effort to do so, yet every one is practically pronounced to have failed. The teacher’s love of approbation has so blinded his own perception, that he is regardless of the feelings of others, and thinks of nothing but his own.

The over-anxiety for the good opinion of others shows itself in a still less amiable light, when the teacher frequently makes unfavorable allusions to his predecessor. “When I came here,” says the teacher, significantly, “I found them all poor readers.” Or if a little disorder occurs in a school, he takes care to add, “I found the school in perfect confusion;” or, “the former teacher, as near as I can learn, used to allow the children to talk and play as much as they pleased.” Now whatever view we take of such a course, it is impossible to pronounce it any thing better than *despicable meanness*. For if the charge be true, it is by no means magnanimous to publish the faults of another; and if it is untrue in whole or in part, as most likely it is, none but a contemptible person would magnify another’s failings to mitigate his own.

There is still another way in which this love of personal applause exhibits itself. I have seen teachers call upon their brightest scholars to recite, and then ask them to *tell their age*, in order to remind the visitor that they were very young to do so well; and then insinuate that their older pupils could of course do much better.

All these arts, however, recoil upon the teacher who uses them. A visitor of any discernment sees through them at once, and immediately suspects the teacher of conscious incompetency or wilful deception. The pupils lose their respect for a man whom they all perceive to be acting a dishonourable part. I repeat, then, *never attempt to cover the defects of your schools by making ridiculous excuses.*—*Selected.*

THE BASIS OF PROGRESS.—The Institutions and manners of society indicate the state of mind of the influential classes at the time when they prevail. The trial and burning of old women as witches, indicate the predominance of wonder over reason; the practice of wagers of battle, and of ordeal by fire and water, show great intellectual ignorance of the course of Providence. The enormous sums expended in war, and the small sums grudgingly paid for education; the intense energy displayed in the pursuit of wealth, and the general apathy evinced in the pursuit of knowledge and virtue, show the predominance of selfishness and the lower propensities. It is not safe, therefore, to establish institutions greatly in advance of the mental condition of the mass, but the rational method is, first to instruct them: to elevate the standard of morals, and then to form arrangements in harmony with improved public opinion.

THE DYING CHILD.

BY EBENEZER ELLIOTT.

We watch'd him while the moonlight,
Beneath the shadow'd hill,
Seem'd dreaming of good angels,
And all the woods were still.

The brother of two sisters
Drew painfully his breath :
A strange fear had come o'er him,
For love was strong in death.

The fire of fatal fever
Burnt darkly on his cheek,
And often to his mother
He spoke, or tried to speak :

"I felt, as if from slumber
I never could awake :
O Mother! give me something
To cherish for your sake.

A cold dead weight is on me,
A heavy weight, like lead :
My hands and feet seem sinking
Quite through my little bed :

I am so tired, so weary—
With weariness I ache :
O Mother! give me something
To cherish for your sake!

Some little token give me,
Which I may kiss in sleep—
To make me feel I'm near you,
And bless you, though I weep.

My sisters say I'm better—
But, then, their heads they shake :
O Mother! give me something
To cherish for your sake.

Why can't I see the poplar,
The moonlit stream and hill,
Where Fanny says good angels
Dream, when the woods are still ?

Why can't I see you, Mother ?
I surely am awake :
Oh! haste and give me something
To cherish for your sake!"

His little bosom heaves not ;
The fire hath left his cheek :
The fine chord—is it broken ?
The strong chord—could it break ?

Ah! yes; the loving spirit
Hath wing'd his flight away :
A mother and two sisters
Look down on lifeless clay.

COMPRESSION IN ORATORY.—Eloquence, we are persuaded, will never flourish in America or at home, so long as the public taste is infantile enough to measure the value of a speech by the hours it occupies, and to exalt copiousness and fertility, to the absolute disregard of conciseness. The efficacy and value of compression can scarcely be overrated. The common air we beat aside with our breath, compressed, has the force of gunpowder, and will rend the solid rock, and so it is with language. A gentle stream of persuasiveness may flow through the mind, and leave no sediment; let it come at a blow, as a cataract, and it sweeps all before it. It is by this, magnificent Cicero confounds Cataline, and Demosthenes overwhelms Æschines; by this that Marc Antony, as Shakspeare makes him speak, carries the heart away with a bad cause; by this that Lady Macbeth makes us for the moment sympathize with murder. The language of strong passion is always terse and compressed; genuine conviction uses few words; there is something of artifice and dishonesty in a long speech. No argument is worth using, because none can make a deep impression, that does not bear to be stated in a single sentence. Our marshalling of speeches, essays, and books, according to their length, deeming that a great work which covers a great space—this "inordinate appetite for printed paper," which devours so much and so indiscriminately that it has no leisure for fairly tasting anything—is pernicious to all kinds of literature, but fatal to oratory.

STUDY OF LOGIC.—The *Asiatic Journal*, 1827, records the following instance of acuteness in a young Brahmin. After the introduction of juries into Ceylon, a wealthy Brahmin, whose unpopular character had rendered him obnoxious to many, was accused of murdering his nephew, and put upon trial. He chose a jury of his own caste; but so strong was the evidence against him, that twelve out of thirteen of the jury were thoroughly convinced of his guilt. The dissentient juror, a young Brahmin of Camisseram, stood up, declared his conviction that the prisoner was the victim of a conspiracy, and desired that all the witnesses should be recalled. He examined them with astonishing dexterity and acuteness, and succeeded in extorting from them such proofs of their perjury that the jury, instead of consigning him to an ignominious death, pronounced him innocent. The affair made much noise in the island, and the Chief Justice, Sir Alexander Johnson, sent for the juror who had so distinguished himself, and complimented him on the talents he had displayed. The Brahmin attributed his skill to his study of a book, which he called "Strengtheners of the Mind." He had obtained it from Persia, and had translated it from the Sanscrit, into which it had been rendered from the Persian. Sir Alexander Johnson expressing a curiosity to see the book, the Brahmin brought a Tamul MS. on palm leaves, which Sir Alexander found, to his infinite surprise, to be the "Dialectics of Aristotle."

Education is the cheap defence of Nations.—[Burke.]

POPULAR SCIENCE.

(Continued from page 172.)

ON THE COMMUNICATION OF HEAT.

12. **CONDUCTION.**—If the ends of a common poker and a rod of glass, be placed in a fire, and allowed to remain in it for about half an hour, a very different temperature will be found to exist in the other extremity of the iron poker from that of the glass rod. Heat will be rapidly conducted along the iron, and slowly along the glass. Iron is said to be a good conductor of heat, glass on the contrary a bad one. Among the best conductors of heat are the metals, and dense compact bodies generally. Among the worst, the natural covering of animals, as feathers, hair, wool, down, and all very porous bodies.

13. A simple experiment can be made to exhibit, in a striking manner the difference between good and bad conductors of heat. Take a gun barrel or any cylinder of iron; and also a cylinder of wood of equal dimensions. Cover the cylinders neatly with a piece of writing paper—and hold them before a good fire, or, what is better, over a spirit lamp. The paper surrounding the iron, may remain for many minutes without being scorched, while that about the wooden cylinder will soon be burned. The heat passes through the paper in both instances, but it is rapidly diffused through the substance of the iron, and slowly through the bad conducting wood, so that it soon accumulates in one spot, in sufficient quantity to burn the paper.

14. The bad conducting power of feathers, hair, wool and down, is due to the air they contain among the parts of which they are composed. It is thus that snow, a very porous body, prevents the passage of the heat of the earth, and serves as a warm covering for vegetables in winter. Sand is a very bad conductor of heat, hence it is used to surround furnaces and boilers. A layer of perfectly dry sand, spread upon the palm of the hand, will effectually prevent, for some minutes, the heat of a red hot ball of iron laid upon it from penetrating to the skin. The boilers of locomotive engines are clothed with felt, a bad conductor, for the purpose of confining the heat of the steam, as much as possible. For the same reason we clothe ourselves in flannels or furs, which prevent the escape of the heat of the body. When iron and wood are exposed to a very low temperature during a winter's night, they produce very different effects upon the finger when applied to them. The iron feels much colder than the wood, although there may be no difference in the temperature. Iron being a good conductor, rapidly conveys the heat of the finger away, whereas the wood abstracts it slowly. For exactly the same reason, an iron roof in summer seems much hotter than one constructed of shingles, the former imparting its heat more rapidly than the latter.

15. Fluids are bad conductors of heat downwards; water, indeed, may be made to boil near the upper part of a glass vessel, without communicating much of its heat to the lower portions of the fluid. Into two small tubes, as represented in figures 3 and 4, introduce some water coloured with red cabbage, and carefully fill the tube with colourless water. Place a spirit lamp at the bottom of one tube, and near the surface of the water in the other. The arrows in Fig 3 indicate the direction of the current of heated and cold water, which will continue until the liquid boils and is uniformly coloured. The tube, as shown in Fig 4, may be held in the hand, without inconvenience, immediately underneath the boiling liquid; the coloured portions remaining at the bottom undisturbed.

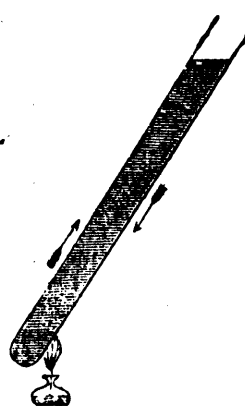


Fig. 3.

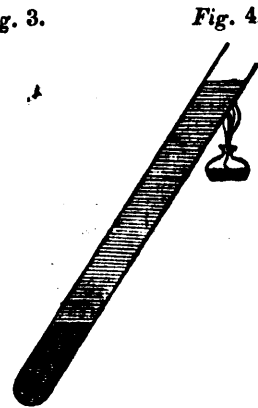


Fig. 4.

16. In the change which takes place in the natural clothing of animals at the approach of winter, we observe a beautiful provision against the severity of the season. Hair is changed into wool, feathers interspersed with a thick lining of down, and furs thickened by a dense mass of short hairs.

17. Brittle bodies are liable to be cracked or broken upon the sudden application of heat. Hot water poured into glass decanters, tumblers, &c., frequently breaks them. The glass, being a bad conductor of heat, has one surface suddenly expanded, whilst the other remains nearly in the same state as before. The unequal expansion causes a disruption of the substance of the glass. This effect is most observed when the glass is thick, and presents an obstacle to the passage of heat, and a uniform expansion of its parts. Plates of heated cast iron are also often broken when cold water is poured upon them. One side is suddenly contracted by cold, while the other suffers little diminution in its temperature. The unequal contraction disarranges the particles of the brittle iron, and forcibly separates them.

18. Many extensive and highly important natural phenomena depend upon the expansion of air and water by heat, and the current induced by that effect. The heat which proceeds from the sun imparts very little of its effect to the transparent air through which it passes. It is received by the earth, which in many parts of the world would become intolerably hot, but for the air which envelopes it. The layer of air next to the earth becomes warm by its contact with the heated surface of that body, it is immediately expanded, and rendered lighter than the colder air above it. It rises in consequence, and gives place to a supply of cold air from the colder regions, which is warmed in turn, and ascends to make room for fresh additions from the vast reservoir from above and around. It is thus that the earth is cooled and the air warmed. In the islands of tropical seas, this phenomenon is of vast importance to the inhabitants. The cool and refreshing breezes sweeping over the surface of the waters, convey away the heat of the hot soil, re-animate all orders of animal life, and revive the drooping forms of the vegetable world. The trade winds spring from the same cause. The currents established in an unequally heated vessel of water will afford an apt illustration of the mode in which these great operations of nature are silently and imperceptibly going on. Dissolve some sugar in a glass of cold water, which, when at rest, place over a spirit lamp, and observe the course of the currents immediately formed. Fig. 5 represents the glass vessel and lamp—the arrows show the direction of the currents, the warmed water ascends by the sides of the vessel, the cold fluid from above descends and occupies its place, until it receives that accession of heat which renders it lighter than particles above it; it then ascends by the sides.



Fig. 5

19. RADIATION.—A hot body gives off a portion of its heat in straight lines, and in all directions. Heat thus given off, is said to be radiated, like rays of light. It moves with inconceivable rapidity, and does not always affect the body through which it passes. Heat from the sun is altogether radiated. It proceeds to the earth and into the planetary spaces in straight lines at the rate of eleven millions of miles in one minute. It produces very little effect upon the atmosphere before it reaches the earth. Whenever heat is transmitted from one body to another without affecting intervening matter, it consists of radiant heat. If, when standing before a hot fire, we suddenly interpose a screen, the effect is felt instantaneously; showing that the warmth came directly from the fire in straight lines, without increasing the temperature of the intervening air to any great degree.

20. The power of radiating heat, or giving it off in straight lines seems to depend upon the nature of the surfaces of the radiating bodies. This, however, is not the case; it has been ascertained that the radiating power of the same body is in the ratio of its density. The discussion of this question is of too scientific a character to be introduced into a popular view of the subject.

21. Radiant heat is absorbed by bodies possessing rough or dark surfaces, such as stones, dark woods, bricks, soils, animal and vegetable substances, &c., their temperature being increased by the heat absorbed. Polished and white surfaces reflect heat, that is, they throw it back again in straight lines.

22. Hold a piece of polished tin before a fire, or in the rays of

the sun, it will reflect the greater portion of the radiant heat falling upon it, and its temperature will increase very slowly. If its polished surface be roughened, scratched, or painted, it will absorb heat rapidly, and reflect but little, consequently its temperature will soon be heightened. The best absorbing surfaces are the best radiators. If a painted and a polished tin plate be heated to the same temperature, and then exposed to air on a cloudless night, the painted surface will give off its heat much more rapidly than that which has its surface polished. If hot water be poured into two glass or tin vessels, one being smeared on the outside with lamp black, the other wiped dry and clean, the water will cool much more rapidly in the painted than in the polished vessel. It follows from these singular properties, that whenever heat is required to be retained for a length of time in any vessel, the sides of the vessel should be highly polished. We observe this principle introduced into practice, in the construction of various utensils, as tea-pots, tea-urns, &c., their bright metallic surfaces retarding the radiation of heat. We blacken the outside of stoves and stove pipes for a contrary purpose, namely, to induce them to radiate the heat they contain as much as possible, so that their warmth may be imparted to the objects in the room. In cooking vessels, such as boilers, kettles, pans, &c., that part exposed to the fire should be black and rough, in order that it may absorb heat with rapidity, whereas those parts not immediately exposed to the fire, should be highly polished, that they may radiate the heat received through the bottom from the fire as little as possible.

23. Colors affect the absorption and radiation of heat to a great degree. Dark colors when exposed to radiant heat soon become warm, and they give off their absorbed heat with equal rapidity. A dark soil will be hotter during the day time than a light coloured one, it will also cool more rapidly when the sun sets.

24. The deposition of dew upon the stalks and leaves of vegetables is due to the power they possess of radiating heat, which passes off into the planetary spaces. The quantity of moisture which air can contain in the state of invisible vapour is dependent upon its temperature. Air at 80° will dissolve more vapour of water than air at 50° . If a substance cooler than air is brought in contact with it, a portion of the heat of a thin stratum of air passes into the body it envelopes, its temperature is consequently lessened, and it cannot continue to hold in solution the vapour of water it may have previously dissolved. A portion of such vapour will immediately assume the fluid form, and be deposited upon the surface of the cool body. Leaves radiate heat with great facility: on clear nights they become cooler than the surrounding air. A thin stratum of air above them gives off its heat to the leaves, and loses the power of retaining all the moisture it had previously dissolved. A portion is therefore deposited upon the surfaces of the leaves in the form of dew.

25. Pour cold water from a well into a glass vessel in a warm room, the outside will soon become moist with dew. On a clear evening place a board about a foot above the grass, radiation will be prevented, and if the night is calm, no dew will be deposited upon the leaves of the covered grass. A thin fleecy covering of clouds obstructs the radiation of heat from leaves of trees into the planetary spaces. Clouds, atmosphere, and leaves preserve a nearly uniform temperature under such circumstances; hence dew is not seen on cloudy nights.

26. A beautiful instance of the effects of radiation is observed on a large scale during a Canadian winter. It is invariably found that snow which lies near the fences, trunks of trees, logs, and tufts of grass, melts much more rapidly than at a distance from them. The snow, in fact, receives radiated heat not only from the sun but also from the bodies it surrounds. A tree or log becomes warm by the absorption of heat from the sun; it radiates the heat it has received in all directions, and it is found that heat thus radiated by terrestrial bodies is more rapidly absorbed by snow than the direct heat from the sun, the greater portion of the latter being reflected. Cattle find the bush much warmer than the open fields, during the cold days and nights of the winter season. Radiation of heat from the earth is much retarded by the covering of forest trees; the trunks and branches of the trees themselves also radiate the heat they have absorbed from the sun's rays during the day time, these causes unite with the protection afforded from cold winds, in elevating the temperature of the bush far above that of the open unprotected plains.

JOURNAL OF EDUCATION.

TORONTO, DECEMBER, 1850.

EDITORIAL CORRESPONDENCE OF THE REV. DR. RYERSON.

For the Journal of Education.

LONDON, November 22nd, 1850.

What has been done and is now doing by the British Government for the elementary education of the hitherto neglected masses of the people in Great Britain and Ireland, deserves special notice and high admiration. I will give a summary view of it, as I find it in official and other papers which I have procured and examined during the last few days.

The national system of education in Ireland has been so frequently and largely referred to in the *Journal of Education*, that I shall not notice it here, except to remark that, commencing in 1832, by authority of a short despatch, and under the management of a liberal and judicious Board of Education in Dublin, it has accomplished more for Ireland than all the agitators and associations that have ever existed there. It has spread over the country thousands of well-trained teachers; it has aided and prompted the erection of many hundreds of schoolhouses; it has prepared and published a series of school books which for excellence and cheapness have no rivals in this country; its pupils are upwards of half a million;* its system of school inspection is efficient and admirable for the purposes contemplated; its spirit and its publications are soundly Christian, unpoisoned by sectarian bigotry, and undiluted by infidel indifference; the net work of its operations is spread over every county in Ireland; its books are used in the schools of every county both of England and Scotland, as well as Ireland; its resources from Parliamentary liberality alone now amount to the magnificent sum of £125,000 per annum; and the chief impediments to its wider diffusion and greater usefulness, are religious bigotry and ecclesiastical fanaticism—the two great modern antagonistic powers against true civilization and real liberty.

It was in 1833 that the public attention began to be particularly attracted to the subject of popular education in Great Britain; and it was in that year, under the government of Lord Grey, that the first practical step was taken on the part of the House of Commons by a grant of £20,000—a sum which was continued by an annual vote, until 1839. This sum was administered by the Lords of the Treasury, and was given in aid of private efforts, through the agency of two great Societies—the one exclusively Church of England, called the National School Society—the other embracing friends of education of different religious persuasions, called the British and Foreign School Society.

In the year 1839, the Parliamentary annual school grant was increased to £30,000 sterling; in 1844, to £40,000; in 1845, to £75,000; and at the present time it amounts to £120,000 per annum for England and Scotland, exclusive of £125,000 for Ireland.

When the grant was first increased in 1839, a special Board of management was created by the appointment of a Committee of Her Majesty's Privy Council on Education; and the administration of the Parliamentary School Grant was transferred from the Lords of the Treasury to that *Committee of Council on Education*. The office of a salaried Secretary was created, and a very able and most earnest educationist, Sir James P. K. Shuttleworth, was selected. School inspectors were also appointed, and steps were taken to establish some definite plan for administering the parliamentary school grant, and for establishing a system of elementary education among the poor, for it was to the education of the poor that all these efforts were and are still directed.

Among the first measures taken by this new Committee of Council on Education, were grants of £5,000 to each of the two great Educa-

tional Societies above mentioned, for the purpose of establishing and supporting Normal Schools, for the training of Teachers; and regulations making Inspection a necessary condition in all schools where pecuniary assistance was given. No objection was, of course, made by either of the Societies concerned to the grants for their Normal Schools; but considerable opposition was made to the proposed system of inspection, and the mode of appointing inspectors. The rights of the established Church were arrayed on the one side, and those of a voluntary association on the other, against this interference on the part of Government. They could accept of any amount of public money from Government, but they objected to the Government's seeing, by means of public officers, whether that money was accomplishing the objects of its appropriation. The differences were at length adjusted, by the Government agreeing not to appoint any inspector of the National Society Schools assisted by Parliamentary grant who should not be approved of by the Archbishop of Canterbury, and no inspector of the British and Foreign Society Schools aided by the grant who should not be approved of by the Managing Committee of that Society. From 1839 to 1847 the efforts of the Committee of Council on Education were unceasingly directed to devise and establish some general and comprehensive system of elementary education, based on Christian principles, but not exclusively sectarian. Its proceedings and inquiries into the state of education among the poor, and the best means of promoting its general views on the subject, are presented in successive volumes, two a-year, which reflect the highest credit on the zeal and ability of the Secretary (who was, in fact, the main spring of the whole movement), and on the Christian liberality and patriotism of enlightened statesmen. But the differences and opposition of the several religious persuasions presented insuperable obstacles in the way of establishing by legislative enactment any national system of elementary education. The Committee, therefore, determined to promote, as far as possible, by means of its own regulations, adapted to existing circumstances, this great object of national honour and common humanity. The conclusions suggested by their years of experience and deliberation were embodied in a series of Regulations in the form of Minutes of Council, in 1846, containing, as an able and liberal writer (Rev. Richard Dawes, Dean of Hereford) has remarked, "the only plan the present generation is likely to have the opportunity of trying; and, moreover, in itself a comprehensive system, which, if taken up and worked in a proper spirit, by those who take a lead in the education of the country, is likely to be attended with the happiest results."

The objects embraced in these Minutes of Council, finally adopted in 1846, are the following:

1. Grants in aid of buildings, and carrying on the Normal Schools for the training and instruction of Teachers.
2. Grants for building Schools and masters' houses in aid of local and voluntary efforts.
3. Grants for the augmentation of salary to schoolmasters and schoolmistresses who have obtained certificates of merit, according to the class of certificate, varying in amount from £10 to £30 per annum for the masters, and from £10 to £20 per annum for the mistresses.
4. Gratuities to schoolmasters and schoolmistresses for the instruction of the pupil-teachers; £5 per annum for the first, £4 for the second, and £3 for every additional one.
5. Stipends to pupil-teachers, from £10 in the first year to £20 in the last—the period of apprenticeship being five years.
6. Payments to monitors, in such schools as want assistance in teaching; but where the teachers are not competent to instruct pupil-teachers to the extent required, one half that of pupil-teachers.
7. Grants to aid in the purchase of books, maps, and apparatus.

Such are the main objects to which the parliamentary grant is devoted; and the way in which the Minutes of Council propose to accomplish these objects, and to guard the public funds against abuse, is as follows:

1. The inspection of both the elementary and normal schools, at least once a-year, by Government Inspectors.
2. Examination, by the same inspectors, of apprenticed pupil-teachers, and of paid monitors, before the stipend is paid, and at the end of each year of apprenticeship. At the same time, examination of the master or mistress, if not certified, as to fitness for instructing the apprentices the following year.
3. Examination of each school by the same inspectors, before the

* For summary of National School Statistics for 1849. see page 186.

master or mistress can receive the augmentation of salary, and passing of the pupil teachers before the gratuity for instruction is paid.

The inspectors are all University graduates, and persons who have in some way distinguished themselves as educators. Their salaries are from £800 to £1,000 per annum each. The annual salary of the present Secretary of the Committee of Council on Education (R. R. W. Lingon, Esq.) is, I believe, £1000.

Whenever assistance is given toward the erection of a school-house; the Committee of Council requires the settlement of the site on which it stands according to a certain prescribed form, which contains clauses providing for the fulfilment of all the obligations required by the regulations of the Committee of Council. There is one form of deed for schools of the National Church School Society; another for those of the British and Foreign School Society; a third for those of the Wesleyan body;* and a fourth for schools established by benevolent individuals or associations of individuals in direct connexion with the Committee of Council, and unconnected with any religious persuasion. The forms of deeds for school-houses are the result of long negotiations between the Committee of Council and the authorities or representatives of the several parties concerned.

The sum of £15,000 per annum is expended in support of a *School of Design*, consisting of a Head School in London, and eight Branch schools established in the principal manufacturing towns of England, Scotland, and Ireland. The average attendance of students at the Head School in London is nearly 500: the average attendance in the several Branch Schools exceeds 3,000. The object of this Government School of Design is, to offer at small individual expense, instruction to all who desire to obtain a knowledge of *Ornamental Art*, and to supply a complete and systematic course of education, in relation to every kind of *decorative work*; more especially to such persons as are, or intend to be engaged in the preparation of designs for the various manufactures of this country. Drawing, Painting, and Modelling are therefore taught, with a view to the acquisition of knowledge and skill in ornamental Design, and Decoration. This forms the essential and characteristic business of the schools, by which it is distinguished from all other schools of art; and, accordingly all the exercises of the students are required to have reference immediately or remotely to the purposes and requirements of *ornamental art*. The course of instruction comprises, elementary freehand drawing, from the flat and from the round; shading from the flat and the round; geometrical drawing, and perspective; figure drawing from the flat, from the round, and from the life, including anatomical studies, and drapery; modelling of ornament, and of the figure as applied to ornament; painting in water colour, tempera, fresco, oil, and encaustic, from examples of ornamental art, and from nature; landscape, animals, foliage, flowers, fruit, &c.; exercises in composition, and original designs, for decorations and manufactures; lectures on the history, principles, and practice of ornamental art.

It will be seen that the course of instruction is limited to *ornamental art*, and does not embrace any of the branches of Practical Mechanics, which should form a prominent feature of a corresponding *School of Art and Design, in Upper Canada*. The attendance in the evening at the Head School of Design, in London, Somerset House, is very large—consisting mostly of clerks and young tradesmen, and artists. I devoted one evening to this school; received every attention and information from the officers; and witnessed the exercises of the students in each class, and in each branch of the course of instruction. I admired the ability and skill of the masters, and evident application and industry of the students. The collection of model figures is large. Paintings are provided from the Royal Gallery at Hampton Court; for the study of flowers and other appropriate subjects, specimens of plants and flowers are supplied from the Royal gardens at Kew; the managers of the Royal Zoological Societies grant free admission to students of the advanced classes to sketch in their gardens; and every well conducted student is allowed to take to his home books from a lending Library, consisting of upwards of 1,000 volumes of works of art and instructive literature. Premiums and prizes are also periodically awarded for the best productions of students. I examined as many of these productions as my time would permit. They included models for various articles of furniture, from a salt-cellar up to the architectural decorations of an apartment: beautiful designs for lace shawls,

muslin dresses, chintz, embroidery, table-covers, damask hangings, paper hangings, hearth-rugs, carpets, metal work, stone carving, &c. &c. A fair proportion of these designs for which prizes have been awarded, are the productions of Female Students, who attend the *day classes only*. These designs are eagerly purchased by manufacturers; and several of the students from this school have been permanently engaged by manufacturers in various parts of the kingdom. Means and increased facilities of livelihood have been extended to great numbers of intelligent and industrious persons, both male and female, through the instrumentality of this noble institution, and it is confidently anticipated that English manufactures will, at no distant day, rival those of France in what is ornamental, as they now excel them in what is solid and durable.

The School of Design forms no part of the system under the management of the Committee of the Privy Council on Education; it has been established and is conducted "under the Directive authority of the Lords of the Committee of the Privy Council for Trade."

Such is an epitome of the governmental system of elementary education in this country; or rather of the means adopted by the Government for the promotion of elementary education—for it can hardly be called a system. There is no uniformity, no unity, no nationality in it. The Local Municipalities which unite the people in corporate action in the various counties, cities, and towns throughout the kingdom, have nothing to do with popular education, and contribute nothing to its diffusion among the untaught multitudes within their respective jurisdictions. All that is done is the result of isolated individual and denominational effort, encouraged and aided by a parliamentary grant. The opposition which Government has met with is almost incredible, and from quarters whence it should have been least expected. Yet great progress has been made; and the efforts of the Committee of Council on Education are untiring. Not a statesman or public man with whom I have conversed on the subject who does not lament the obstacles which denominational jealousy and hostility have raised against the establishment of a national system of elementary education. All unite in congratulations at such a state of society as exists in Upper Canada, and in some other parts of North America, where denominationalism is unknown in a system of popular education, where all persuasions and classes and parties unite in the common duty and interest of educating the whole people. There is no indisposition on the part of any portion of the British public to contribute to educational purposes. Even Joseph Hume has never objected to the Parliamentary grant for elementary schools; and I am told that Parliament would readily increase the grant if asked by Government. The English people, in advance of the civilized world in the number and amount of their religious charities, are equally generous in voluntary contributions to educational purposes. I am assured by the Secretary of the Committee of Council on Education, that the £125,000 annual grant by Parliament, represents at least, a million sterling raised by voluntary contributions for the same objects, and expended under the regulations of the Committee of Council, besides the large sums which are raised in the same way and expended in support of Ragged and Poor Schools of various kinds. I have also been assured by the best authority, that were the sums now raised and expended in these isolated efforts, and, to a very great extent, in support of rival schools, combined in one general fund, and in support of one system of schools uniting all religious denominations, (as we have in Canada) the amount would be adequate to educate every child in the land! But an immensity of good has been done, and is doing under existing circumstances. The change which has taken place in the number and character of elementary schools, of the character and position of teachers, of the variety and quality and cheapness of school books, maps, &c., since my first visit to England in 1833, appears rather like an illusion than a reality, and brightens the prospect of the future.

The Committee of Council has not only provided a series of plans for school houses and the residence of school masters, but has also latterly selected and recommended a series of text-books and maps for the schools, and for teachers, and has arranged with the several publishers of them to procure these books and maps at an average of forty three per cent. below the ordinary prices at which they are sold to the public. Thus these publications are supplied to managers of schools, and to teachers for their own use, through the Committee of Council, upon the most advantageous terms to the purchasers; in addition to which the Committee of Council makes a free

* See page 125.

grant of about twenty five per cent. of the amount purchased upon these low terms.

I cannot enter into statistical details as to the number of schools established and the amount of money both collected and received by the several denominations and other parties acting in concert with the Committee of Council; nor can I advert to the character and topics of the very able reports of Inspectors. This general summary view must suffice for the present, and shows that the measures of the Committee of Council are a well devised and gigantic scheme to develop individual effort and reward individual merit, but very far short of a national system of elementary education, and vastly below the grandeur of England in every other element of national greatness.

E. RYERSON.

SCHOOL ELECTIONS ON THE 8TH JANUARY, 1851.—By the 2nd Section of the School Law it is enacted, "That the Annual Meeting for the elections of School Trustees shall be held in all the Villages, Towns, [as well as in Amherstburgh, Chatham, Guelph, Perth, Simcoe, and Woodstock,] Cities, and Townships [School Sections] of Upper Canada on the second Wednesday in January, in each year, commencing at the hour of ten of the clock in the forenoon"

In each School Section *but one Trustee* is to be elected, as usual. The mode of conducting the Annual Meeting is prescribed by the 6th Section of the Act. It will be seen by this Section that Trustees are required to read their Annual Report at this meeting; and in case of any objection to it, arbitrators can be appointed to decide upon the matter in dispute. Six days' notice of the meeting is required to be given by the Trustees.

In each City and Town, one person is to be elected in each Ward to succeed the Trustee who retires. See 22nd Section of the School Act. Notice of the meeting to be given by the Trustees.

In each of the incorporated Villages [i. e. "Towns with municipalities only"] referred to above, "six fit and proper persons, from among the resident freeholders or householders shall be elected School Trustees for such incorporated Village." The Reeve of the Township or Townships, in which any of these Towns is situated, to give six days' notice of the meeting, to be posted in "at least six public places." Intimation to this effect has been sent to the parties concerned. In each of the Villages, with Municipalities already organized, the Reeve of such Village gives the required notice.

The law definitely fixes the *time, place, and objects* of each Annual School Meeting in Upper Canada; and distinctly points out the mode of conducting these meetings. It is to be hoped, therefore, that there will be no failure on the part of the people in any locality to elect their School Trustees, as they alone can give orders in favour of School Teachers, and perform other important duties pointed out in the Act.

ANNUAL APPOINTMENT OF LOCAL SUPERINTENDENTS.—The 3rd clause of the 26th Section of the School Act makes it the duty of each *County Municipality* in Upper Canada:—"To appoint annually, a Local Superintendent of Schools for the whole County, or for any one or more Townships in such County, as it shall judge expedient; to fix (which the limits prescribed by the thirtieth section of this Act), and provide for the salary or salaries of such Local Superintendent or Superintendents: Provided always, that no such Local Superintendent shall have the oversight of more than one hundred Schools; and provided also, that the *County Clerk* shall forthwith notify the Chief Superintendent of Schools of the *appointment and address* of each such Local Superintendent, and of the *County Treasurer*: and shall likewise furnish him with a copy of all proceedings of such Council, relating to School assessments and

other educational matters." In the performance of this important duty, we would respectfully direct the attention of the members of each County Council to the Circular of the Chief Superintendent of Schools, published in the August number of this *Journal*, in which he refers particularly to the spirit in which these appointments should be made.

THE CHIEF SUPERINTENDENT'S ANNUAL SCHOOL REPORT FOR 1849.—A number of copies of this Report having been retained by the Clerk of the House of Assembly for the use of Members, out of those ordered for distribution to the local School Officers of Upper Canada, as great a number of copies as was originally designed was not sent out from the Education Office to supply Trustees, local Superintendents, and Municipal Corporations. The School Trustees in the different Townships can, however, in case of a deficiency, lend each other any copies that may have been received.

PROSPECTUS OF THE FOURTH VOLUME OF THE JOURNAL OF EDUCATION.

(CIRCULAR.)

To *Municipal Councils, Local Superintendents, Boards of School Trustees, Teachers, and all others interested in the progress of Education in Canada.*

GENTLEMEN,

The Conductors of the *Journal of Education for Upper Canada* respectfully solicit your cordial co-operation in the publication of the *Journal* for another year—the fourth year of its existence.

Our School Law having lately undergone a thorough revision and re-enactment, and facilities far more satisfactory and complete than ever before existed for the promotion of the educational interests of the Province, having been provided, the extension of them facilities, with suggestions as to the best means of carrying them into effective operation will occupy a prominent place in the *Journal* for the ensuing year.

Very generous provision having been made in the School Act for the establishment of Libraries in every part of Upper Canada where the local authorities may feel disposed to avail themselves of the liberality of the Legislature, "It will afford us" (as intimated in the Prospectus of last year) "peculiar satisfaction to give every information in our power on the mode of establishing and managing Libraries, characteristic notices of the Books selected for them, and directions as to the best and cheapest method of obtaining them."

Arrangements of a satisfactory nature having been effected for procuring engravings illustrative of the various interesting departments of Science, the Practical Arts, and other subjects connected with literary and scientific pursuits, the fourth volume will contain several valuable contributions in connection with each of these departments of Practical Knowledge.

The summaries of "Educational," "Literary, and Scientific Intelligence," will continue to form an attractive feature of the *Journal*. Additional facilities now exist for making these departments of the Publication still more important, as well as interesting and instructive—thus increasing its value as an Educational and Literary Journal.

The anxiety to afford full and satisfactory information to the several officers charged with the administration of the new School law prevented the Editor of the *Journal* from giving effect, in the third volume, to his intention of contributing short and comprehensive re-

views of the various systems of Public Instruction in Europe. It is hoped, however, that the greatly augmented sources of information which will be obtained in consequence of the delay, will only render those reviews and notices the more interesting and accurate.

It would add much to the satisfaction and pleasure of the Conductors should a greatly increased circulation of the *Journal of Education* in 1851 enable them to increase the amount of matter which it contains, to add additional engravings or illustrations in the different branches of Natural History, as well as of Science and the Arts, and to secure eminent literary correspondents both in the United States and in Europe—thus obtaining brief periodical accounts of the progress of Educational systems and general knowledge in all educating countries. But of course to effect all this, a very extensive subscription list would be absolutely necessary.

As intimated in previous notices, the Conductors of the *Journal* beg to state that the entire amount of the subscriptions received will be expended in defraying the expenses connected with the Mechanical and Literary departments of the publication, and in enriching its pages with contributions of permanent interest.

The Conductors beg to intimate that HIS EXCELLENCY THE GOVERNOR-GENERAL in Council has been pleased to constitute the *Journal of Education* the official medium of communication from the Educational Department of Upper Canada on all matters relating to the Department—thus adding greatly to the interest and value of the publication, and furnishing an additional inducement to all parties interested to provide themselves with a copy.

To remark upon the great importance and advantage of an Educational Periodical to all parties interested in the education of the country, as also to those concerned in the administration of the School law, would be superfluous. That fact must be sufficiently impressed upon the mind of every one.

The 15th clause of the 12th Section of the new Act makes it the duty of each Corporation of Trustees to procure annually, for the benefit of the School Section, some periodical devoted to education. As a convenience and inducement to Trustees and Teachers subscribing for the *Journal of Education*, we propose that each Teacher subscribing for it shall have the privilege of advertising in its columns for a School, and each Trustee Corporation subscribing for it shall have the like privilege of advertising for a Teacher. In every such notice, the salary offered to the Teacher, should be stated. This will afford peculiar facilities for Trustees to procure good Teachers, and for Teachers to procure good Schools. No such notice will be inserted from non-subscribers for less than *two shillings and six pence* for each notice,

In order to place the *Journal* within the reach of each School Section, and of every School Officer and other person in Upper Canada who wishes to obtain it, the following low rate of subscription is submitted to the various County and Township Municipal Councils, Local Superintendents, Boards of School Trustees, Teachers, and all other persons interested in the progress of Education in Canada.

For a Single Copy, 5s. per annum

For not less than *Eight* copies, 4s. 4d. each, or \$7 for the Eight.

For not less than *Twelve* Copies, 4s. 2d. each, or \$10 for the Twelve.

For Twenty Copies, or upwards, 3s. 9d. each.

Back Volumes supplied on the same terms.

All Subscriptions must commence with the January Number, and payment in advance must in all cases accompany the order.

We entreat the continued co-operation of all friends of general education and knowledge to extend the circulation of the *Journal of Education*.

☞ All communications to be addressed to Mr HODGINS, Education Office, Toronto.

EDUCATION OFFICE,
Toronto, December, 1850.

* * Editors are respectfully requested to notice this Prospectus.
P. S. Parties wishing to have the Fourth Volume continued to their address will require to renew their subscriptions at the commencement of the year.

Educational Intelligence.

CANADA.

Items.—The Montreal press discusses with a good deal of warmth the question of the Legislative appropriations for the promotion of Education in Upper and Lower Canada.—The Chancellor of the University of Toronto, in his speech at the recent convocation, referred with much satisfaction to the great improvement which has of late years taken place in Common School Education in Upper Canada. The success (he remarked) of any University system must in a great measure depend upon the efficiency of our Elementary and Grammar Schools.—Rev. Mr. Livingstone, Principal of the Carradoc Academy, has had five medals manufactured in London, U. C., for distribution to successful competitors for prizes in his school.—The Middlesex School Teachers' Association, at a recent meeting in St. Thomas, decided to meet four times in 1851, as follows:—London twice, Delaware once, and St. Thomas once. The April meeting is fixed for London. Books were distributed among the Teachers present for circulation among Teachers living in remote parts of the county. Mr. Crane was appointed Vice-President, vice Mr. Hoyt.

University of Toronto.—At the first annual Convocation of the University of Toronto, the following gentlemen were admitted to the degrees annexed to their names:—H. Croft, Vice-Chancellor of the University, was admitted to the degree of D.C.L. J. H. Richardson, M.B., to the degree of M.D. Jesse B. Hurlburt, A.M., to the degree of B.C.L., J. D. Armour, G. M. Evans, A. J. Grant, G. A. Barber, J. L. Gage, Henry Hurlburt, and R. N. Light, to the degree of B. A.

Premiums at Public Examinations.—The Board of Trustees in Port Hope, anxious to invest the public School Examination in their town with as much interest as possible, and to encourage the zealous efforts of the teachers and their pupils, have recently passed the following resolutions, which we copy from the *Port Hope Watchman*:—*Resolved*, That the Common Schools be convened in one place, on the 23rd instant, and be examined in the presence of this Board, and that premiums—books to the amount of two pounds, ten shillings—be awarded to the most deserving pupils.—*Resolved*, That the Revd's. J. Cassie, J. Short, and G. Goodson, be respectfully requested to attend and award the premiums on that occasion.

In addition to the foregoing pleasing indications of the general interest which is beginning to be felt in the success of pupils and school examinations, we insert the following communication, which we have received from John Holmes, Esq., Townreeve of Goderich. Mr. Holmes remarks: "I take the liberty to intimate that our Township Council has recently expended £5 in the purchase of books, which were awarded to the most meritorious children of this township, at a public examination held lately. The teachers of six schools were in attendance, with the children under their charge. I am fully persuaded that annual examinations of this kind would cause greater exertion on the part of teachers, pupils, trustees, and parents, than any other particular mode yet introduced into our school system. In some of our school sections, steps have been already taken to procure maps and other apparatus, in anticipation of a similar examination next year. Another advantage to be derived from these examinations would be uniformity of school books. If the approved series were made the text books, there is no doubt but every teacher, trustee, and parent, would join in discarding all other books. I am of opinion that annual county examinations, where small premiums would be given, would be very beneficial. I think the County Council has the power to carry this into effect, if they think proper. A word of advice from you, if you approve of these remarks, would further this object."

NOVA SCOTIA.

We perceive with the highest satisfaction that our Sister Province of Nova Scotia is putting forth active and noble efforts in the cause of popular education. From a local paper we learn that J. W. Dawson, Esq., the newly appointed Provincial Superintendent, has been lecturing with great success in several towns of the Province, preparatory to a general and systematic organization of a popular school system.

BRITISH AND FOREIGN.

Items.—The royal commission of inquiry into the revenue and expenditure of the Universities of Oxford and Cambridge is prosecuting its inquiries. The authorities of Brasenose College have refused to give the Commission any information whatever. A writer in the *North British*

Review for November, and a warm friend to the governmental inquiry, expresses great doubts of the ultimate advantage to be gained by the inquiry. He thinks the tendency of collegiate education in the present age is to merely professional training, to be carried on at distinct and separate institutions, and that the day for symmetrical university education is gone by. The age is too practical. The general question is discussed at length by the writer.—Arrangements for the new Roman Catholic University in Dublin are still in progress, and funds are coming in.—James Martin, Esq., D. L., County Galway, has lately written an admirable defence of the Queen's University Colleges in Ireland. The attendance of students of all religious persuasions at the recent re-opening of these Institutions is very satisfactory.—The students of the University of Glasgow have elected A. Alison, Esq., the Historian, their Lord Rector for the ensuing year. Lord Palmerston was also a candidate.—Rev. Dr. Oakes, late lower master of Eton College, has been elected Provost of King's College, Cambridge, vice Rev. Dr. Thackeray, deceased.—The Wesleyans have lately held enthusiastic meetings in Manchester for the promotion of secular education in connection with their own body.—The National Public School Associations have also lately held large influential meetings in Manchester for the promotion of general secular education. The impression on the public mind has, in consequence, been much deepened in favour of the principles of this Association. Mr. Cobden has placed himself at the head of the movement.—The endowments of the University of Oxford are about £129,000 per annum, and of Cambridge, £110,000. There are 463 livings in the gift of Oxford University, valued at £138,900; those in the gift of Cambridge are 318, valued at £93,900 per annum.—In the new Commercial College lately opened at Glasgow, ladies' classes are to be formed under professors and lecturers in the various branches of polite literature.—The opening of the new Free Church College at Edinburgh took place with great eclat. The cost of the Institution is estimated at upwards of £43,000.—The free Grammar School at Richmond, erected as a testimonial to the memory of the late Canon Tate, who was one of the most successful teachers in England, was lately opened with much ceremony.

Schools of the Wesleyan-Methodists.—There are under the supervision of the committee of the British Conference 418 day schools, at which 38,117 children are taught, at an annual cost of £22,347. The number of Sabbath schools is 4,444, in which 465,502 children are instructed—being an increase in the year of 3,905; teachers, 84,650; expense, £28,053. Building grants have been made by Her Majesty's Government to the amount of £5,923; for books and apparatus, £293; for pupil teachers, £2,360; and for salaries, £614. Thus it appears that the British Government has made grants to the Wesleyan schools, amounting to something like \$40,000. A fine suite of buildings, now nearly completed, in London, are to form a new Normal Institution for the training of day-school teachers.

National Education in Ireland.—The sixteenth report of the Commissioners of National Education in Ireland (being for the year 1849) is now printed. From the sheet of receipts and disbursements, the following appears to be the state of the accounts for the period in question: Balance on the 1st of April, 1849, £11,583 17s. 1d.; treasury issues, £120,000; cash receipts for books, &c., sold to national schools, &c., £12,196 15s. 4d.; receipts from pupils, &c., attending model schools, and other items, £1,870 11s. 11d.; total receipts, £145,663 4s. 4d. On the credit side there appears expended for normal schools and training departments, £7,005 6s. 9d.; model farm, £2,706 15s. 11d.; Glasnevin, &c., schools £2,305 6s. 10d.; ordinary national schools, £4,588 17s. 7d.; agricultural, industrial, and other schools, £1,079 10s.; salaries and gratuities to teachers and monitors, £62,777 14s. 2d.; seven district model schools, £16,002 19s.; inspection, £10,817 11s. 11d.; book department, paper, printing, &c., £18,995 3s. 1d.; Marlborough-street establishment, £6,955 2s. 9d.; repairs and works, £2,969 3s. 3d.; miscellaneous charges, £1,933 5s. 4d.; balance on 31st March, 1850, £7,416 7s. 9d.; total, £145,663 4s. 4d. The following list shows the progress in the number of schools and scholars since the establishment of the system:—

YEARS.	SCHOOLS.	SCHOLARS.	YEARS.	SCHOOLS.	SCHOLARS.
1843,	789	107,042	1842,	2,721	319,792
1845,	1,106	145,521	1843,	2,912	355,320
1846,	1,181	153,707	1844,	3,151	395,500
1847,	1,300	166,929	1845,	3,426	432,844
1848,	1,384	169,548	1846,	3,637	456,410
1849,	1,581	192,971	1847,	3,825	492,623
1840,	1,978	232,560	1848,	4,109	437,469
1841,	2,337	281,849	1849,	4,321	480,623

The actual increase in the number of schools for the past year was 284; but as 138 other schools were struck off, the net increase during the year stands as 146. The proportion of new schools for the four provinces stands thus:—Ulster, 121; Munster, 64; Leinster, 64; Connaught, 35; total, 284; and the total attendance of scholars, actual and expected, is stated at 505,056.

UNITED STATES.

Items.—The New-York State Superintendent of Common Schools announces that the official returns of the Department for 1850 will exhibit an increase in the attendance of pupils of upwards of 100,000.—Hon. James Woodsworth has lately given \$1,000 to the Methodist Episcopal College at Genesee, New-York.—An Educational Institution of the Jesuits has been founded at New-York, at a cost of \$30,000. It is designed to accommodate 50 students and their instructors.—Girard College for Orphans, at Philadelphia, has now 211 pupils; 100 more are about being admitted.

Philadelphia Schools.—The number of public schools in the city and county of Philadelphia is 258, scholars 45,333, of whom 23,706 are boys and 21,627 girls. There are 81 male and 646 female teachers. The expenditure during the last school year was \$332,433 21; of which the salaries of teachers absorbed \$173,326 84; books and stationery \$36,213 7; superintendence, cleaning, &c., \$22,650 97; and new school-houses \$36,243 58.

Boston Schools.—There are in Boston 178 Primary Schools, with 11,736 scholars, and 19 Grammar Schools, with 8,115 scholars; besides a Latin and High School; and, without the chartered limits, Harvard University, a Baptist College, and many excellent Schools and Academies. The various public libraries, including those in Harvard University, contain more than 150,000 volumes.

Education among the Cherokees.—From the report of the Superintendent of Public Schools, recently submitted to the National Council, it appears that in 22 schools established in the several districts, there are upwards of 1,000 male and female scholars under instruction, of whom 120 are orphans, who are clothed and boarded at the expense of the Orphan School. Of the several classes in the schools, there are 35 pupils in the alphabetical class; 168 in the spelling class; 553 in the reading class; 50 in the class of history; 314 in the writing class; 210 in the grammar class; 478 in the arithmetic, and 204 in the class of geography. The most advanced of these scholars are to be received into the High Schools, which will soon go into operation.

Literary and Scientific Intelligence.

Items.—A very able and laborious compilation on *Commercial Law* has lately been issued in London by Mr. Leone Levi. It extends to upwards of fifty countries, remarkable more or less for distinct and separate commercial usages—A life of Wordsworth by Rev. C. Wordsworth is announced—M. Mazzini has just published his letters, orations, and other tracts on Italy, with an elegant, earnest and eloquent appeal to the English people, in a small volume, intitled, *Royalty and Republicanism in Italy*—A project is on foot to reclaim from the sea at Norfolk, England, 32,000 acres of land, said to be of great agricultural value, at an expense of £640,000—Miss Martineau has caused a good deal of mirth in England, by publishing an account of having mesmerized a cow!—A fragment of the frieze of the Parthenon has been found among a collection of marble in Cheshire, brought from Italy in 1749. It fits the parent stone in the British Museum—The people of Sheffield are about erecting a monument to Ebenezer Elliott, the Anti-Corn Law Rhymist—Lord John Russell has entrusted the execution of the National Peel monument to Gibson, the sculptor, at Rome—A Belgium engineer proposes to connect the Seine and the Rhine by means of a canal, by constructing which, navigation would be open from London to the Black Sea and Constantinople, through the heart of the Continent. The estimated cost is £1,600,000—An article on Madame de Genlis and the system of Education she adopted with the late King Louis Philippe, written by the eminent critic and academician, M. de Saint-Beuve has excited some attention in Paris—The members of the Academie des Sciences are quite puzzled to know what forms the centre of the earth, whether it is a globe of fire, a huge furnace, a perfect void, a solid substance, or a mass of water. Each theory has its partisans—A supplement to the celebrated *Conversations-Lexicon* is being published in Leipzig. It is entitled, *The Present: an Encyclopaedic Representation of Contemporary History*—A bronze statue has just been erected at Leipzig, of Albert Thaer, the celebrated Agriculturist. The costume is that of a German farmer slightly idealized. The inscription is: "The German Cultivators to the honoured Teacher, Albert Thaer—Three statues are being cast at the Royal foundry, Munich, viz: Gustavus Adolphus, the Swedish Poet Bishop Tegner, and Waller of Plettenberg, a celebrated Livonian General, surnamed "the Conqueror of the Russians"—The Coliseum at Rome is in process of restoration—The director of the observatory at St. Petersburg has applied to the French Government to establish a number of stations in different parts of

France taking meteorological observations with a view of aiding him in the vast studies he has been for some time past making respecting the climates of different countries. The project has been referred to the Academy. In England, Germany, the British Colonies, and the State of New York, &c., such stations are to a limited extent founded with great success—Dr. Neander's library of 4,000 vols. is to be sold. They will probably be purchased for the University in which Neander lectured—An immense layer of sulphur has been discovered near Alexandria—An iron light-house of vast dimensions is about to be erected on the Fastnet, a solitary rock several miles out in the Atlantic, off the coast of Cork and Kerry—Ptolemy's "Mountains of the Moon" have at length been discovered in Africa—The cashmere shawls prepared by Maharajah Gholab Singh, of Jamoo, for the World's Industrial Exhibition, are valued at £10,000, and are bestowed in free gift on the trustees. The surrounding hill chiefs are also forwarding costly contributions—one sends a suit of steel armour, inlaid with gold—M. Gustave Schwab, a popular poet of Germany, died on the 4th ult., at Stuttgart, aged 58—Great sensation has been caused in the city of Pesth, by the families of several persons, who were executed by order of revolutionary court-martials, having commenced actions against the judges of the courts to recover damages—The oldest Archbishop in Great Britain is the Archbishop of Armagh, aged 77; the youngest, the Archbishop of York, aged 62. The oldest Duke, the Duke of Hamilton, aged 83; the youngest, the Duke of St. Albans, aged 10. The oldest Marquis, the Marquis of Huntly, aged 89; the youngest, the Marquis of Bute, aged 3. The oldest Earl, the Earl of Bantry, aged 83; the youngest, the Earl of Dunmore, aged 9. The oldest Viscount, the Viscount St. Vincent, aged 84; the youngest, Viscount Hood, aged 12. The oldest Bishop, the Bishop of Durham, aged 80; the youngest, the Bishop of Down, aged 42. The oldest Baron, Baron Berners, aged 88; the youngest, Baron South, aged 18. The oldest Baroneſs, Sir Charles Villavincina Hudson, aged 95; the youngest, Sir Reginald Louis Oakes, aged 3—On Saturday, October 25, at five minutes before 1, P. M., two shocks of earthquake were felt in Malta, which though they lasted but a few seconds, damaged the walls of several old buildings—Mr. Faraday, at the last monthly meeting of the Royal Institution, announced to the members present that oxygen is magnetic; that this property of the gas is effected by heat, and that he believes the diurnal variation of the magnetic needle to be due to the action of solar heat on this newly discovered characteristic of oxygen—the important constituent of the atmosphere. M. Bequerel, also, has recently directed attention to a somewhat similar conclusion in a communication addressed to the Academy of Sciences at Paris—The two German travellers, Overbeck and Bath who accompanied the expedition of Richardson to the interior of Africa, have been heard from. They were three hundred miles south-east of Tripoli, where they were preparing canoes which could be carried by camels. The travellers are assisted by contributions from the King and the Geographical Society of Berlin—One of the most eager and impassioned biblioplists ever known, M. Chas. Motteley, whose death occurred last September, has left a will in which he bequeaths his library to the French nation, under the auspices of the President of the Republic. M. Motteley possessed the richest and most numerous collection of Elzevirs, the most magnificent specimens of French and other bindings, and the most curious cabinet of rare works, illustrated manuscripts, &c. He had hoped that his collection would be placed in the Louvre, the Tuilleries, or the Luxembourg. This collection had been almost purchased by Louis Philippe, and recently by the British Museum, which would have paid 300,000fr. for it (£12,000), but it will not go out of France, and it will, no doubt, shortly become visible in one of the public establishments of Paris—The catalogue of the book fair of St. Michael at Leipzig, consists of 384 pages, and contains the titles of 5,033 works which have been published in Germany since the Easter fair—The question whether or not snails are possessed of a mutual galvanic and magnetic influence is now being discussed in Paris. It is asserted that they have, and that they will ultimately supersede electric-telegraphs!—An English biblioplist has formed a list of a hundred and fifty pamphlets on Baptismal Regeneration, appertaining to the Gorham controversy—Alfred Tennyson has been appointed Poet Laureate of England—Mr. Eastake has been elected President of the Royal Academy, in the room of Sir M. A. Shee—Rev. S. Spaulding, of Cherry Valley, New England, is the author of the most of what is known as the Mormon Bible. He composed it during a period of ill health, adopting a scriptural phraseology, and designed to publish it as a romance. The MS. was lent to friends, and it appears was copied and interpolated to suit the peculiar designs of the Mormon impostor, Smith—Gen. Lee of the American Army is stated to be the author of Junius' Letters. The similarity of style is so striking—Another part of the Horse Shoe Fall on the Canada side, has fallen, carrying away about ten rods of the rock in length, by four in width. The Canal boat, which was lodged on the brink of the rock was carried over with the rock. It is now in the Whirlpool, two miles down the river, dancing attendance to the freaks of that great maelstrom. The loss of this portion of the rock has not in the least diminished in appearance the view of the Niagara Falls, it looks grander and more sublime, if possible, than ever.

The Monster Globe.—We stated some time since that a monster globe was in course of construction by Mr. Wyld, M.P., for the Exhibition. The mountains will be in relief, the regions of ice will be shown in their dazzling rainbow tints, and the eternal snow line marked upon the giant mountain ranges. The courses of great rivers will be seen like threads of silver, the known volcanoes will be marked by bright red lights; the proportions of land to water, and population to territory, and the great trade districts and lines of commerce, the latter marked by moving ships, will be observable at a glance. The globe will be 56 feet in diameter, made on ribs of zinc, each circle in four compartments, socketed together with copper. The expense of this globe, independent of its staircase and galleries, will not be less than from £4000 to £5000.

The Great Exhibition of 1851.—The Great Exhibition has already had one good effect—it has stimulated the ingenuity of the mechanics of this country. From all quarters accounts are received of the co-operation of the artisan classes. There is a wonderful variety observable in the articles upon which individuals in various parts of the country are employed. While a lady is fabricating an article from silk, grown under her own superintendence, an ingenious mechanic is fashioning a pair of bellows by which lovers of music will be enabled to revive their fire to the air of "God save the Queen." In India, Gholab Singh is collecting specimens of every kind of Cashmerean product; and, from Wales an eccentric fellow is travelling with a glass tube full of insects, which he calls "A Happy Family." The Queen, it is rumoured, has designed a carpet, which is now being manufactured at Axminster for exhibition, and the glasshouse will, it is reported, contain specimens of Prince Albert's talent as a sculptor. Mr. Wyld, M.P., is contentedly strolling about inside his monster globe; while a Yarmouth mechanic is filing at a beamer machine of Lilliputian proportions; and Messrs. T. E. Smith & Co., of Lawrence Lane, Cheapside, are preparing a shirt of marvellous workmanship, with the rose, shamrock, and thistle, severally encompassing each button of the front—thus the patriotic will be enabled to press the national emblems to their bosom. From the city we hear of an engine constructed on a new system of propulsion, which has attracted particular attention. What with the activity of the executive committee, and the labours of the local committees, popular excitement is fast rising to an extraordinary pitch.—[Eng. Paper.

Analytical View of the Newspaper Press.—London, Conservative, 19; Liberal 36; Neutral, 59—Total, 113. England—Conservative, 88; Liberal, 99; Neutral 36; Total, 223. Wales—Conservative, 5; Liberal, 5; Neutral, 1; Total, 11. Scotland—Conservative, 20; Liberal, 34; Neutral, 31—Total, 85. Ireland—Conservative, 37; Liberal 37; Neutral, 27—Total, 101. British Islands—Conservative, 5; Liberals, 8; Neutral, 1—Total, 14. General summary of the United Kingdom—Conservative, 174; Liberal, 218; Neutral, 155; total 547.—[From Hammond's Newspaper List for 1850.

The Purpose of the Pyramids of Egypt.—The Pyramids of Gizeh are about five miles distant from the bank of the Nile. As the traveller approaches them first across the plain, and then the sandy valley to which the inundation does not extend, he is usually disappointed by their appearance, which falls short of the conception which their fame had raised. Their height and breadth are lessened by the hills of sand and heaps of rubbish which have accumulated around them. The simplicity and geometrical regularity of their outline is unfavourable to their apparent magnitude; there is nothing near them by which they can be measured; and it is not till, standing at their base, he looks up to their summit, and compares their proportions with his own or those of the human figures around him, that this first error of the judgment is corrected. And when he begins to inquire into their history, and finds that 2,300 years ago their first describer was even more ignorant than ourselves of the time and purpose of their erection, he feels how remote must be their origin, which even then was an insoluble problem. * * * No reasonable doubt can any longer exist respecting the destination of these groups of Pyramids. Not only is it evident that they have been places of interment, the only rational purpose that was ever assigned to them, but where any inscriptions have been found, they concur with tradition in showing them to have been the sepulchres of kings. Further, these inscriptions belong to the earliest dynasties of Egypt, to the kings whom Manetho places before the invasion of the Shepherds, and of whom, besides the founders of Memphis, five dynasties are expressly called Memphite. Around the larger structures which received the bodies of the kings are grouped smaller pyramids, in which queens were deposited; and the chief officers of state and religion were buried in excavations, near the remains of their masters. The animals whom the Egyptians most revered had also a place assigned them near the highest personages of the land, as we find that at the Labyrinth the bodies of the kings and the sacred crocodiles rested together in the subterraneous chambers.—[Kentick's Egypt under the Pharaohs.

Editorial Notices, &c.

NOTICE TO LOCAL SUPERINTENDENTS AND SCHOOL TRUSTEES.—Copies of all the Blank Reports necessary for Trustees, and all other School Officers, having been despatched from the Education Department, as intimated on the 176th page of our last number, we would earnestly solicit of local Superintendents and Boards of School Trustees for Cities and Towns, the prompt transmission to the Education Office of the Reports, accurately filled up, as early in January as possible, so as to afford sufficient time for preparing the Annual Abstract of these Reports, to be laid before the Governor-General, and the Legislature at its next Session—which will probably be early in February. Extra copies of Trustees' Blank Reports have been furnished to each County Clerk, so as to enable him to supply, upon application, any deficiencies which may occur.

Local Superintendents will pay especial attention to the 5th remark at the bottom of the Trustees' Reports, which states that the Superintendents are required not to give a cheque upon the Treasurer for the last instalment of the School Fund in favour of the Teacher of any School Section from which the Report for 1850 has not been received at the time of giving the cheque. No School Section is "entitled" to this last instalment, in terms of the 1st clause of the 26th section of the School Act, until the report has been received and approved by the Local Superintendent. To meet this regulation, Trustees can send in their Annual Report any time in December.

SCHOOL REGISTERS.—As intimated on the 168th page of our last number, we hope to have copies of School Registers, printed ruled, and stitched, so as to be ready for delivery early in January. Orders sent to the Education Office can be supplied almost immediately. Price, per doz., 12s.; per single copy, 1s. 3d.

* * We direct special attention to the Prospectus of the *Journal of Education* for Upper Canada for 1851—to be found on page 184.

CHAMBERS' EDUCATIONAL COURSE.

The Scientific Section. Seven Volumes. Published by A. S. BARNES & Co., New-York.

The Scientific Section of Chambers' Educational Course has long been distinguished for its uniform excellence. The edition under notice, as will be seen in the advertisement which has appeared in late numbers of the *Journal*, has been revised and adapted to the system of teaching in general use on this continent, by D. M. Reese, M.D., LL.D., late Superintendent of the Public Schools in the city and county of New-York, and an eminent educationist and scientific gentleman.

The engravings, illustrative of "*Popular Science*," which appear in our present and last number, are taken from these admirable works, and have been kindly furnished by the enterprising publishers, Messrs. A. S. Barnes & Co., New-York. From the excellence of these engravings, our readers will be able to form an estimate of the valuable character and mechanical style of the works themselves.

SCOBIE'S CANADIAN ALMANAC FOR 1851.

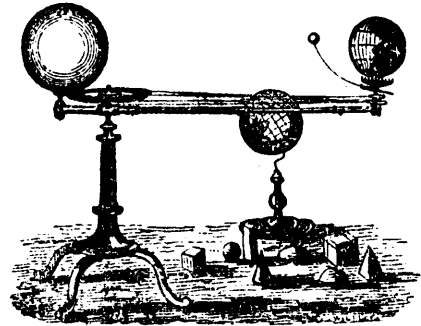
This comprehensive and valuable Statistical Manual has now reached a yearly edition of 35,000 copies; and already we learn the supply is exhausted. The information extends to every department of Trade, Commerce, Government, Civil, Military, and Naval Service, Abstracts of some of the more important Acts of last Session, Municipal and other Officers and Local Divisions, &c., &c., &c., compiled evidently with the greatest care and accuracy. The Almanac extends to 84 pages. Price 7½d.

WANTED by a late Student of the *Normal School*, who has had considerable practice in Teaching, a situation as **TEACHER** of a *Common School*. Salary expected, £60. Address, **R. SOMERVILLE, Barris.**

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