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### THE IMPENDING CHANGE IN SCIENTIFIC EDUCATION IN ENGLAND.

A book of some educational significance has just been published in England. Its title is "Modern Culture: its true Aims and Requirements." It consists of a "Series of addresses and arguments on the claims of Scientific Education," written by Professors Whewell, Faraday, Tyndall, Huxley, and Henfy, and is edited by Dr. Youmans. From a notice of the work in the English newspapers we make the following extracts:—

#### MODERN CULTURE: ITS TRUE AIMS AND REQUIREMENTS.

This publication seems to be the latest manifesto of an impending revolution in the opinions and customs of English society with regard to the proper direction of liberal studies. The question is not whether the greatest possible encouragement should be given to the more or less united and organised band of professors and amateurs of the various branches of natural science. This is pretty well settled by this time. The annual meetings of the British Association have long been attended with flattering signs of the esteem in which their labours are held by the influential and fashionable classes. The personal claims of eminent savans are very cheerfully acknowledged. The question, therefore, now at issue is not one directly concerning the interests of the recognised men of science. It rather concerns the part which science should take in the ordinary programme of education and subsequent self-culture for all men.

This question opens up a wide range of considerations with respect to the value of scientific pursuits for the sake of their

effect on the mind itself. The commoner view of physical science looks more to its utility as dealing with matter. The interest felt by many in watching the results of scientific discovery has been inseparably connected with all sorts of useful and wonderful improvements in the arts and manufactures; with the production of an enormous mass of wealth, the improvement of all our conveniences of travel and correspondence, and the manifold comforts of our daily life. But such work, highly paid and profitable to others, must be chiefly performed by the adepts of the laboratory or the engine factory, and by the scientific minds employed in making calculations or designs for their particular service. There can henceforth be no fear, we suppose, of a deficiency in the number of skilful persons able and willing to do what is needful in the business of applying science to augment the riches and commodities of mankind. That is a thing which *pays*, and wants no other recommendation. But what has scarcely been so well understood hitherto is the advantage of learning science as a means of mental discipline, with a view to cultivating some of the most essential faculties and habits of thought. This question touches the highest interests of humanity; it is far more important than the uses of the electric telegraph, the steam-engine, or the spinning-jenny, or the entire contents of a Paris or a London Great Exhibition. It has a most serious bearing on the moral and social as well as intellectual welfare of the community, in so far as "the education of the judgment" must affect the whole creed and conduct of the individual, influencing his sentiments and behaviour in all the relations of life.

Now, it is contended by the leading advocates of the study of the natural sciences, on the new ground they have lately taken up, that this kind of knowledge, or, more properly speaking, its peculiar method of investigation, supplies an indispensable element of sound culture of the mind. They insist on having it reckoned a part of "the humanities," meaning those branches of learning—formerly meaning only Latin, with the books of logic and metaphysics written in Latin, and nothing besides—by which an accomplished man is trained and equipped to live in the modern world. They say nothing against what is pedantically called "classical" literature, and the ancient history therewith bound up. Sir John Herschel is the latest translator of Homer, though his testimony is the foremost in favour of scientific education. But they do affirm that these studies of theirs are requisite in education for the

sake of an intellectual discipline, which can be imparted in no other way, and without which a young man is sent forth, at the end of his University course, blind of one eye, halting upon one leg, maimed of one hand, imperfectly prepared for manly life. They trace the evil effects of this neglect in a multitude of delusive theories and blunders of practice detrimental to our social and political state. They submit, therefore, with considerable show of reason, that natural science is quite as necessary a portion of scholarship as the grammar and prosody of the Greek and Latin languages, and that it is the due complement of mathematical studies. For it calls into exercise the powers of observing facts, of weighing probabilities, and of reasoning by induction from particular instances to general laws, which are not sufficiently developed by geometry and algebra on the one hand, or by grammar, philology, rhetoric, and formal logic on the other, in the existing schemes of University education.

It appears to us even more urgent to grant this argument a fair hearing since the two ancient English Universities have taken such wise and liberal measures to gain a broader basis of popular support. The success of the Oxford and Cambridge local voluntary examinations all over the country, and the esteem in which the degrees and certificates are everywhere held by middle-class people, show a confiding desire on the part of these to avail themselves of the same elements of education, bearing the credentials of the same authority, which are conventionally supposed to guarantee the social superiority of the privileged, wealthy and fashionable classes. In this matter, as in other affairs of domestic life and personal habit or taste, we are happily so free from the spirit of an envious democracy, that there is rather a disposition, without prejudice to the distinctions of rank, to enable all to rise to a common ground of respectability and of mutual appreciation. But, if the highest education received by the sons of the nobility and gentry at the Universities lacks an essential portion of that which should go to the complete education of the youthful mind, we hope the Universities will hasten to repair such defect before they extend their guiding and controlling influence to the education of the whole people. They have done so much in the way of reform during the last twenty or thirty years that we may expect they will see to this. We have the example of the late Dr. Whewell, whose lecture, at the Royal Institution, "On the Influence of Scientific Discovery on Intellectual Education," is among the essays collected in this volume.

Dr. Whewell remarks, accordingly, that every great attempt ever made for the improvement of intellectual education, every advance of the standard of mental culture recognised in any age and nation, has been the effect of some considerable scientific discovery or group of discoveries in the preceding years. In support of this proposition, he observes that the dialectic method of Socrates and Plato, or which Plato employed and ascribed to Socrates, in his ethical inquiries and his disputes with the rhetorical Sophists, came into use immediately upon the discovery of a connected body of geometrical truths, from which the Greeks of that age had learned what is the genuine aspect of truth in general, and that the discovery of truth is within the reach of the human mind. The Romans, for their part, cultivated the science of jurisprudence in its most comprehensive form, the doctrine of civil rights and obligations; and their discoveries in that science, with the method of its procedure, came to have the strongest influence upon the educational systems and the habits of thought in Western Europe, from the time of the Roman Empire, through the Middle Ages, and to the present day, especially in France and Italy, Germany and Spain. But Dr. Whewell further remarks, that neither the study of geometry and mathematics, nor that of the Roman law and general jurisprudence, nor both studies together, can give the intellect all its needful discipline, because they are both deductive sciences, in which every conclusion is to be demonstrated from axioms or first principles. He even suggests that an exclusive attention to processes of deductive logic may have an injurious effect on the mind, and unfit it for the investigation of truth in subjects requiring a different mode of treatment. The remedy or preventive of this evil is to cultivate the inductive faculty by the study of one or more of the natural sciences. "The knowledge of which I speak," says Dr. Whewell, "must be a knowledge of things, and not merely of names of things; an acquaintance with the operations and productions of nature, as they appear to the eye, not merely with what has been said about them; a knowledge of the laws of nature, seen in special experiments and observations, before they are conceived in general terms; a knowledge of the types of natural forms, gathered from individual cases already made familiar. By such study of one or more departments of inductive knowledge, the mind may escape from the thralldom and illusion which reigns in the world of mere words."

Has this been done? asks the late Master of Trinity; has the plan of a liberal education been thus extended? The answer is to be found in the evidence laid before the Public School Commis-

sioners, some extracts from which are reprinted in the Appendix. We have the testimony of such witnesses as Sir John Herschel, Sir Charles Lyell, Professor Owen, Professor Faraday, Professor De Morgan, Dr. Joseph Hooker, and Dr. W. B. Carpenter, who agree in saying that, as the physical sciences and natural history have been almost entirely ignored in the teaching of the higher classes in this country, they find daily occasion to lament their deficiency of those faculties of observation and judgment which such studies are proper to exercise. In this respect it appears to Professor Owen and Sir Charles Lyell that the middle classes, who have not had the advantage of going to Eton or Harrow, to Oxford or Cambridge, are not quite so ignorant as their superiors in social rank. "If I were to select any," says Professor Owen, "it would be the governing and legislative class, which, from the opportunities I have had of hearing remarks in conversation and debate, appears to be the least aware of the extent of the many departments of natural history, of the import of its generalisations, and especially of its use in disciplining the mind." Mr. Herbert Spencer's remarks on the elements of a political education, and Dr. Hodgson's admirable sketch of the subjects of economic science, forbid us to allow that presumption.

"The Education of the Judgment," however, which is the title of Professor Faraday's discourse, includes yet more important considerations. We earnestly commend its perusal, in connection with the other lectures and addresses, which show precisely how the judgment is to be trained by means of the several branches of natural science; as, for example, by the study of physics, chemistry, vegetable and animal physiology, botany and zoology, of which respective branches Professor Tyndall, Dr. Daubeny, Dr. James Paget, the late Professor Henfrey, and Professor Huxley are the masterly exponents and champions in this volume. The advice of Dr. Faraday is inspired by a quiet and homely wisdom, allied with the simplicity and humility which are the most beautiful accomplishments of the true philosophical spirit. It leads us to view this matter in the light of a moral and religious duty, as we are responsible for the use of our minds.

We have no intention here to notice another aspect of the question, with reference to the practical benefits that must result from applying scientific methods of inquiry to the study of human nature, as in the newly-discovered truths of cerebral psychology and of the conditions of social life, the phenomena of which have seldom been examined in the true spirit of scientific research. On this part of the subject Dr. Youmans, the editor of the essays, himself supplies a very instructive chapter. But the argument for scientific education purely for the sake of mental culture is enough to call for immediate attention. It is a challenge not to be shirked, and not easily to be refuted by literary antiquaries or pedants of scholastic routine. The existing fault will be admitted and amended by the consent of all but these. It seems to be high time, for much goes wrong just now for want of a check on the vagaries of an unphilosophical imagination. Dr. Faraday deploras the belief in spirit-rapping and table turning; he finds that even great mathematicians and fine classical scholars are liable in such cases to a fatal paralysis of judgment. The complaint extends to all human affairs. Everywhere is a lack of clear, definite, and consistent opinions. The imagination runs too wild: chaos is coming again. It was not so with our forefathers. The Englishmen of the eighteenth century drank harder than we, but they had more intellectual sobriety. We, too, might have learned from John Locke the duty of cherishing habits of regular thinking. Is physical science, after all, a phisic and medicine for silly and feeble minds? Then one ought not to be a fool, if one may be cured. "Keep thy heart with all diligence," is a precept enjoining some care of the understanding as well.—*Illustrated London News.*

## II. Papers on Education in various countries.

### 1. ENGLISH LAWYERS AND THE UNIVERSITIES.

The fact that few of the present occupants of the judicial bench—and, we believe, still fewer of the recently appointed law officers—are University men, has been made the theme of remark in some quarters, and it has even been insinuated that this is a matter of reproach to them. If there be ground for reproach in any quarter, it seems to us that it is not to these gentlemen, but to the Universities, that the odium attaches. If University training be desirable in our legal functionaries—and we do not by any means dispute that—there must be some reason either why University-trained men do not succeed at the Bar, or why men who devote themselves to the law as a profession do not go to the Universities to be trained. The Universities must either not afford a training that gives special advantages to their alumni, or an equally good education can be obtained elsewhere. As able lawyers, as good Judges, are turned out

by other educational institutions as those who may have graduated at Oxford and Cambridge. There is, confessedly, no inferiority in the quality of the product; and, seeing that those who make their way to the front ranks of the profession are not now usually University-trained men, the inevitable inference is, either that the Universities do not train well, or that other institutions train better. It is for the Universities, therefore, to look to it, and see that their machinery is equal to the work it is assumed to perform; to overhaul their organisation, and enquire whether any reforms are needed there to keep them *en rapport* with the requirements of the age. Perhaps, were University professors—some of them, we mean—less absorbed in impressing upon their students the importance of empty formalities and gaudy vestments—less taken up, in short, with the great petticoat man—millinery, and priestly-power questions—they might have more time to devote to imparting that thorough mental cultivation which is necessary to fit men to be useful and meritorious public servants at the Bar, on the Bench, in the Senate, the Council-chamber, and the Pulpit.—*Illustrated Times*.

## 2. UNIVERSITY EDUCATION OF GIRLS.

Commenting in congratulatory terms upon the Cambridge University local examinations which have commenced this week, the *Morning Post* (Dec. 18) remarks that the really great boon in them lies in the admission of girls. The wretched condition of most girls' schools is only really known to those whose duties have led them into practical experience of the working of those establishments. But those who do know them can testify to the baldness, meagreness, and poverty of the instruction given. It is not to be wondered at, since the teachers themselves have had no means of becoming better than they are. If they taught English tolerably well, French decently, music showily, and deportment gracefully, they held their mission to be fulfilled. Hence the large number of ill-grounded, half-educated, unreasoning, showy, superficial women, who so largely increase the insipidity of private society. But Cambridge has virtually said that if any schools or heads of families will so train their girls as to enable them to pass the same examination that the boys pass, the University will attest their success in the same manner as it does the success of the boys. The wisdom of this is undoubted, and the success is yearly increasing. This week girls are being examined in Brighton, Bristol, Cambridge, Leeds, London, Manchester, Norwich, Sheffield, Wakefield, and Wolverhampton. The total number is two hundred and two, a small number in itself, but, as against one hundred and fifty-eight last year, it shows a marked increase in the acceptability of this movement amongst the class for whom it is specially designed. In future years it must be greater.

## 3. COMPULSORY EDUCATION IN ENGLAND.

About a fortnight ago, an influential public meeting was held in Manchester, under the presidency of the Mayor, to consider the necessity of petitioning Parliament to establish a system of compulsory education throughout England. The following resolution was proposed, and carried by a large majority of those present on the occasion:—

"That, in the opinion of this meeting, it is highly desirable to make complete provision for the primary instruction of the children of the poorer classes, by means of local rates, under local administration, with legal power, in cases of neglect, to enforce attendance at school."

Mr. Alderman Bennett, the President of the Local Education Aid Society, at Manchester, who proposed the resolution, wound up with saying, that the Education Society give it as their deliberate and unanimous conviction, that such was the apathy and indifference of a large proportion of parents, that nothing but compulsion, in one form or another, would bring their children within the pale of education. Manchester had been the first to suggest any comprehensive measures for public instruction, and he should be proud, as a Manchester man, if it should now be able to instruct the country on this great question of education.

Dr. John Banks, who seconded Alderman Bennett's resolution, informed the meeting how the experiment of compulsory education had already been tried, on a small scale, at Manchester, with complete success. He was speaking, he told his audience, some time ago, to a gentleman who was a partner in a large machine-making establishment in Manchester, and, having become imbued with a feeling of the value of primary instruction, had made up his mind to try what compulsion would do. He had a great number of lads at work, and he gave six month's notice that, at the end of that time, every lad who could not read short words would be discharged. The six months passed over, and, true to his word, he "set up an examination," and he had nobody to discharge. He then "turned the screw" a little father, and, after a period of notice, within

which he required them to learn to write, he had very few to discharge. The same gentleman suggested that an education rate of sixpence in the pound, with the allowance of the Committee of Council on Education, would be ample to provide the necessary funds for this great experiment.

If the conclusions arrived at by the meeting at Manchester may be taken as a test of the educational opinions of the inhabitants of that great city, we fear there is little probability of the realization of Alderman Bennett's aspiration, that they should be followed by the country generally at this moment.

As it is very justly observed by the *Times*, in reference to the proposed scheme, the nation possesses already a system by which twelve hundred and fifty thousand children are receiving a sound and useful education, under the direction of the Council-Office. The number of schools, of pupils, and of teachers is increasing every year. The system rests on voluntary contributions, aided by the State. As the *Times* asks, have these Manchester gentlemen considered what would be the effect of placing side by side with schools created by voluntary effort and aided by the State, schools supported by compulsory rates? Of course, people will hardly care to pay for the education of their children, when they can get such expenses paid by the nation. Other questions, too, arise in connection with the scheme, which cannot be very easily answered. What religious instruction, for example, is to be given in these new compulsory schools? or what compensation is to be made to parents, steeped probably in poverty, for the loss of their children's labour? Other difficulties arise as the subject is further considered. But the whole scheme is so crude and ill-digested, that there is but little danger of its being adopted, either locally or nationally. We are content, as educational journalists, to note the movement as one of the "signs of the times."—*English Educational Times*.

## 4. AMERICAN EDUCATIONAL ITEMS AND STATISTICS.

**ILLINOIS.**—Within the past two years there have been 1,122 school-houses erected in the state, being a great increase over any two former years. The average cost of school-houses erected in 1859 was \$519; of those erected in 1866, \$1,357,—showing a very marked step in the right direction.

The Superintendent finds cause for congratulation in the great increase in the amount of *voluntary* district taxation for school purposes, which amount in 1857 was \$412,391, and in 1866 \$2,789,335, which he justly regards as showing a growing regard on the part of the people for the great interests of education.

**County Superintendents.**—In discussing School Visitation and the office of County Superintendent, statistics are given showing the great increase in efficiency of both, arising from the change in the law respecting the tenure of office and pay of County Superintendents. There have been 13,238 days spent in visiting schools during the past two years by the County Superintendents,—5,696 in 1865, and 7,542 in 1866. Number of schools visited in 1865 was 4,468, and in 1866, 7,363, leaving in 1866, 2,582, or 26 per cent., unvisited. It is shown that this results from the inadequate compensation afforded by the present law—although it is a great improvement upon the former. The County Superintendency is now for the most part filled by earnest educational men, and the justice and necessity of an increase in their pay is forcibly argued.

**The Township System.**—is fully discussed, and its advantages pointed out; but, while the belief is expressed that the people will soon demand it, its immediate adoption is not urged. We think the Superintendent evinces his wisdom in this; for, while we have no doubt that upon the whole the Township System is far preferable to our present one, yet all such radical changes should rather be demanded by the people than forced upon them. Let the arguments and facts of the report go before the people and be discussed by them for the next two years, and then it will be wise to act.

**Normal University.**—The total expenditure for the University during 1866 was \$16,984,96, and the total number of pupils in all departments for the same time was 772. The amount of tuition received from the Model Department for 1866 is \$4,304,97.

**The School Law** has been much improved by the action of the last General Assembly, and but few amendments are now proposed. They are these: (1) Provide that those Union Soldiers who entered the army during their minority may attend, free, any public school in the districts where they severally reside, for a term equal to the portion of their minority spent in the public service. (2) Extend the privileges of public education to all the school-going population of the state, impartially. (3) Provide a general law under which cities and villages may organize for educational purposes without resorting to special legislation. (4) Pay County Superintendents a salary (to be retained out of the school fund of their respective counties) sufficient to enable them to devote their whole time to the duties of their office. (5) Require boards of directors to report certain school statistics to township treasurers. (6) Provide that

teachers shall in all cases be paid by the treasurer of the township in which the school is taught.

The Agricultural College receives due attention, and an interesting synopsis of the action taken upon the subject in other states is given.

**WISCONSIN.**—From the annual message of Governor Fairchild we gather the following items concerning the charitable and educational institutions of this state. *Insane Hospital.*—Number admitted, 95; number discharged, 92; number in the institution Sept. 30, 1866, 180, of whom 96 were males and 84 females. The Governor recommends that further provision be made for the incurable insane. *School for the Deaf and Dumb.*—The number in attendance during the year, 104; number Oct. 1, 1866, 84. *Institution for the Blind.* On account of the adverse working of the law passed by the last legislature, requiring pupils to pay for their board or present certificate from the County Judge of the inability of parents to make such payment, the number of pupils has diminished from 54 to 18. *State Reform School.*—The number of children received since the opening of the school, July 23, 1860, is 400; 340 of whom were boys and 60 girls. Number Oct. 1, 1866, 134. *Common Schools.*—The number of children in the state between the ages of four and twenty is 352,005; number attending public schools, 234,265. Number of teachers employed, 7,879. *State University.*—Concerning this institution the Governor says, "I have observed with much satisfaction that the University has outlived the fierce opposition which it has encountered on nearly every side since its organization, and bids fair to become what it should be in this state."

**MICHIGAN.**—The University has an endowment of about half a million dollars, arising from the first sale of two townships of land, or 46,080 acres. The fathers of the state induced Congress to make this provision, when it was admitted into the Union. Other states have followed this example; but some of them have not carefully husbanded their funds, and others have not yet had time to develop their resources. Besides this, the State of Michigan has loaned the University \$100,000, and relieved it from paying interest, thus making it, in reality, a grant to that amount. The City of Ann Arbor has given the grounds, about 40 acres, upon which the buildings stand, and also \$10,000 toward the Medical Building, and \$2,500 to improve the Observatory. The *State Agricultural College*, at Lansing, has a faculty of 8 professors, with 57 students in the college proper, and 51 in the preparatory class. The institution seems to be in successful operation.

**KANSAS.**—The *Kansas Normal School* has been established since February, 1865. The Reports of the Principal and the Boards of Visitors give a very satisfactory state of facts in the institution. "Regarded merely as a model for the other schools of the state, a means for inciting other teachers to like triumphs in order and educational excellence, our Normal School is worth ten times over all that it has cost us. The experience of America and Europe during the last half-century has fully shown the value and economy of the normal schools supported by the state. In this country particularly, the progress of this system of instruction has been truly wonderful, culminating at last in the great Illinois Normal University at Bloomington, with its buildings erected and furnished at a cost of \$225,000, and its annual appropriation of nearly \$13,000."

**NEW YORK.**—During the past year, the State of New York has appropriated for the use of her public schools \$7,378,880. The salaries of 15,664 teachers amounted to  $4\frac{1}{2}$  millions. Of 931,000 children between the ages of 6 and 17 years, 919,000—nearly 99 per cent.—attended school; over 43 per cent. attended daily—the largest ever reported. *Hamilton College.*—The presidency of this institution has been accepted by Professor Brown of Dartmouth. *New York City.*—The Board of Education appropriate \$2,522,000 for the support of the schools during 1867. It is expected that the legislature this winter will create a Metropolitan Board of Instruction for the City of New York, to replace the ignorant and corrupt men who now have the supervision of her schools.

**PENNSYLVANIA.**—We take the following statistics from the Report of the Superintendent of Common Schools of Pennsylvania for 1866. Whole number of school-districts, 1,863. Whole number of schools, 12,773. Whole number of pupils in attendance, 649,519. Average attendance of pupils, 413,049. Average length of school term, 5 mos. 15 days. Average cost of tuition per month for each pupil, 72 cents. Whole number of male teachers, 6,134; whole number of female teachers, 8,707. Total number of teachers, 14,841. Average salary of male teachers per month, \$34.34; of female teachers, \$26.31. Amount expended for fuel, tuition, and houses, \$3,266,509. Total cost of system, including \$56,425,46 paid to Philadelphia, \$3,368,387.33. The following include the County and City of Philadelphia. Whole number of schools, 13,146. Whole number of teachers, 16,141. Whole number of pupils, 725,312. Average attendance, 478,066. Total cost of the whole system, \$4,195,258.57. The statistics of Philadelphia for 1865 are

given, and are as follows. Whole number of schools, 373, including 2 high and 61 grammar schools. Whole number of pupils, 75,893. Average attendance, 65,017. Per cent. of attendance, 86. Number of teachers, 1,100—83 male, and 1,217 female. Comparing the above with our own state,—Illinois has 9,938 districts; Pa., 1,863. We have white children of school age, 759,987, of whom 614,659 attended school; Pa. had 110,653 more pupils in attendance. We have 1,138 more teachers. We expended \$163,979.43 the most.

**PHILADELPHIA.**—The salaries of school teachers in Philadelphia are to be increased 25 per cent.

**GEORGIA.**—A building which cost \$6,000 has been opened as a normal colored school in Atlanta. A bill has been under consideration in the legislature looking to the establishment of common schools for whites and blacks throughout the state, and it is probable that it will be passed.

**CONNECTICUT.**—Yale College Catalogue shows 26 students in Law 30 in Theology; 122 in Philosophy and Arts; and 500 undergraduates; in all, 709. There are 50 instructors.

**BOSTON.**—In the Boston School Board an attempt has recently been made to adopt a rule abolishing corporal punishment in their schools; but it was unsuccessful. The punishment of girls was prohibited, except with the knowledge and advice of the principal of the district. The School Commissioners have advanced the salaries of teachers 10 to 15 per cent. Think of the principal of a grammar school, of 700, or 800 pupils, receiving \$2,750!

**CINCINNATI.**—The City of Cincinnati has petitioned the Ohio Legislature to authorize the levying of a special tax of one and one-tenth mills to establish a school library.

## 5. AMERICAN NATIONAL BUREAU OF EDUCATION.\*

At a meeting of the National Association of State and City School Superintendents, recently held in Washington, a committee was appointed to memorialize Congress for the establishment of a national bureau of education.

It was the unanimous opinion of the association that the interests of education would be greatly promoted by the organization of such a bureau at the present time; that it would render needed assistance in the establishment of school systems where they do not now exist, and that it would also prove a potent means for improving and vitalizing existing systems.

This it could accomplish—

1. By securing greater uniformity and accuracy in school statistics, and so interpreting them that they may be more widely available and reliable as educational tests and measures.
2. By bringing together the results of *school systems* in different communities, States, and countries, and determining their comparative value.
3. By collecting the results of all important experiments in new and special *methods of school instruction and management*, and making them the common property of school officers and teachers throughout the country.
4. By diffusing among the people information respecting the school laws of the different States, the various modes of providing and disbursing school funds, the different classes of school officers and their relative duties, the qualifications required of teachers, the modes of their examination, and the agencies provided for their special training, the best methods of classifying and grading schools, improved plans for school-houses, together with modes of heating and ventilation, etc.—information now obtained only by a few persons, and at a great expense, but which is of the highest value to all intrusted with the management of schools.
5. By aiding communities and States in the organization of school systems, in which mischievous errors shall be avoided, and vital agencies and well-tried improvements be included.
6. By the general diffusion of correct ideas respecting the *value of education* as a quickener of intellectual activities, as a moral renovator, as a multiplier of industry, and a consequent producer of wealth, and, finally, as the strength and shield of civil liberty.

It is not possible to measure the influence which the faithful performance of these duties by a national bureau would exert upon the cause of education throughout the country, and few persons who have not been intrusted with the management of school systems can fully realize how wide-spread and urgent is the demand for such assistance. Indeed, the very existence of the association which the memorialists represent is, itself, positive proof of a demand for a national channel of communication between the school

\* A bill embodying substantially the recommendations of this memorial, was passed by the House of Representatives, June 19th, 1866, and will doubtless be acted upon by the Senate at its present session. The measure has the approval of the leading educators of the country.—Ed. MONTREAL.



officers of the different States. Millions of dollars have been thrown away in fruitless experiments or in stolid plodding for the want of it.

Further the assistance and encouragement of the general government are needed to secure the adoption of school systems throughout the country. An ignorant people have no inward impulse to lead them to self-education. Just where education is most needed, there it is always least appreciated and valued. It is, indeed, a law of educational progress that its impulse and stimulus comes from *without*. Hence it is that Adam Smith and other writers on political economy expressly except education from the operation of the general law of supply and demand. They teach correctly that the demand for education must be awakened by external influences and agencies.

This law is illustrated by the fact that entire school systems, both in this and in other countries, have been lifted up, as it were bodily, by just such influences as a national bureau of education would exert upon the schools of the several States; and this, too, without its being invested with any official control of the school authorities therein. Indeed, the highest value of such a bureau would be its quickening and informing influence, rather than its authoritative and directive control. The true function of such a bureau is not to direct officially in the school affairs in the States, but rather to coöperate with and assist them in the great work of establishing and maintaining systems of public instruction. All experience teaches that the nearer the responsibility of supporting and directing schools is brought to those immediately benefited by them, the greater their vital power and efficiency.

One other special duty which should be intrusted to the national bureau, and which of itself will justify its creation, viz: An investigation of the management and results of the frequent munificent grants of land made by Congress for the promotion of general and special education. It is estimated that these grants, if they had been properly managed, would now present an aggregate educational fund of about five hundred millions of dollars. If your memorialists are not misinformed, Congress has no official information whatever respecting the manner in which these trusts have been managed.

In conclusion, the memorialists express their earnest belief that universal education, next to universal liberty, is a matter of deep national concern. Our experiment of republican institutions is not upon the scale of a petty municipality or State, but it covers half a continent, and embraces peoples of widely diverse interests and conditions, but who are to continue "one and inseparable." Every condition of our perpetuity and progress as a nation adds emphasis to the remark of Montesquieu, that "it is in a republican government that the *whole power of education is required*." It is an imperative necessity of the American Republic that the common school be planted on every square mile of its peopled territory, and that the instruction therein imparted be carried to the highest point of efficiency. The creation of a bureau of education by Congress would be a practical recognition of this great truth. It would impart to the cause of universal education a dignity and importance which would surely widen its influence and enhance its success. —*Ohio Educational Monthly*.

## 6. AUTHORITY OF BOARDS RESPECTING TEXT-BOOKS.

A board of education in Ohio took action at their last meeting to secure a uniformity of text-books in the schools of the township. The board, after a full consideration of the subject, adopted a series of readers and arithmetics to be used to the exclusion of all other books in these branches. This action is opposed by the residents of one or more of the sub-districts, who have resolved to resist the authority of the board and continue the text-book anarchy which has so long reigned in the schools. This raises the question of the power of the board to force compliance with its action. Happily, on this point the school law is plain and specific. Section seventeen says: "The said board shall have power to determine the studies to be pursued, and the school-books to be used in the several schools under their control"; and section thirteen makes it the "duty of said board to prescribe rules and regulations for the government of all the common schools within their jurisdiction." The authority conferred by these two provisions is ample. If parents refuse to supply their children with the prescribed books, the board can exclude such children from the schools; if the local directors refuse to comply with their action, the board may assume exclusive control of the school, or they may order the schoolhouse to be closed until their regulations are obeyed; if the teacher is at fault, the board may adopt a regulation forfeiting his pay or causing his dismissal.

We wish here to state that it will be impossible for the boards of education to secure uniformity of text-books in the schools under their control without subjecting some school patrons to temporary inconvenience. But shall the schools for this reason be crippled and the school funds wasted? Where is the wisdom in employing

teachers and then suffering their best efforts to fall for the want of a uniformity of books in their classes? The boards in our towns and cities cause their authority in this text-book matter to be respected, and our country schools will never be efficient until the boards know their authority and duty, and resolve to maintain the one and discharge the other. We do not counsel frequent changes in school-books, but we do urge most emphatically *uniformity*. This must be secured, if we are to have efficient schools. —*Ohio Educational Monthly*.

## 7. A HINT FOR OUR PUBLIC SCHOOLS.

"Paris Gossip" in the *Nation*, Jan. 1867, says:

"The Minister of Public Instruction has just issued a circular advising the teachers of the public schools not to torment their pupils by cramming their youthful heads with grammatical rules, learned by rote, but to inculcate the principles of correct and elegant diction by the less arid methods of *dictation* and the *analysis of interesting reading lessons*, thus indoctrinating them gradually and practically into the intricacies of grammatical law, without the infliction of the headaches, penal tasks, and weariness of the flesh, to which the learned and genial Minister alludes with an evident commiseration that makes one suspect he must have suffered many things in his boyhood under the rule of pedagogues."

## 8. EVILS OF CHANGE OF SCHOOL TEACHERS.

Perhaps one of the greatest evils under which the Common School System of Upper Canada needlessly labours is that in frequently changing teachers. This must naturally work a double evil to the teacher himself and to the school. The worthy profession of school teaching is rendered precarious and uncertain, and on that account does not prove so attractive to young men of talent as it would be were something like stability given to the situation held by a teacher. The eagerness of many teachers to get into other branches of occupation need not be wondered at when the profession gives them no permanency of location or income. An injury is undoubtedly done to schools by the frequent change of teachers. The nature of the injury may be gathered from the remarks of a school superintendent in Massachusetts, who urges the retention of the same teacher for a number of terms, and claims that the plan is obviously beneficial, "for each teacher has a way of his own, and must spend about half a term in tearing away the superstructure of his predecessor and rearing another, which is perhaps not superior to the one superseded, and a great loss of time to the school is the result." The Chief Superintendent of Education for Upper Canada deprecates most earnestly the changing of teachers without due cause. He advises that a bad teacher should be removed from the ranks as soon as possible, but a faithful and efficient teacher should be retained as a rare and valuable treasure. "No college or private school (says the Report) would be considered worthy of confidence that changed its instructors once or twice a year. Nor can any Common School prosper or be efficient under such a system." The system indeed may be held accountable for providing the number of bad and incompetent teachers whom country school trustees consider it their duty to dismiss. Only let it come to be understood that a decent and somewhat permanent livelihood is at the command of those who enter upon the task of instructing youth, and the ranks of school teachers would be worthily filled. The matter should be earnestly considered by those who are entrusted with the management of the Common School system. —*Kingston Daily News*.

## III. Papers with Statistical information.

### 1. STATISTICS OF BRITISH NORTH AMERICA.

The following statistics are given in the Year Book just issued by Messrs Lowe and Chamberlin:—

#### POPULATION.

The last census of Canada, Nova Scotia, New Brunswick and Prince Edward Island, was taken in 1861; that of Newfoundland in 1858. The population of these colonies was then found to be—

	Males.	Females.	Total.
Upper Canada.....	725,575	670,516	1,396,091
Lower Canada.....	567,864	543,702	1,111,566
New Brunswick.....	129,948	123,099	252,047
Nova Scotia.....	165,584	165,273	330,857
P. E. Island .....	40,880	39,977	80,859
Newfoundland. ....	65,118	58,170	124,288
Total .....	1,694,969	1,600,737	3,295,705

Assuming the same ratio of increase between 1861 and 1867 as between the census of 1861 and that which preceded it, the number

of residents in British America in January, 1867, which may be taken as the starting point for the proposed Confederation, will be about four millions.

#### EXTENT OF THE CONFEDERATION.

The greatest length of Newfoundland is, from North to South, 350 miles; average breadth, 130. Coast bold and rocky. Area, 40,200 square miles.

Thus the area of the five Provinces proposed to be confederated is as follows:

Upper Canada.....	121,260	square miles.
Lower Canada.....	210,020	“ “
New Brunswick.....	27,105	“ “
Nova Scotia.....	18,660	“ “
P. E. Island.....	2,100	“ “
Newfoundland.....	40,200	“ “
<b>Total.....</b>	<b>419,345</b>	<b>“ “</b>

If to this be added the area of Vancouver's Island 20,000 square miles; British Columbia, 200,000 square miles; and Labrador, the Hudson's Bay, and North-West Territories with, say 2,750,000 square miles, we have a total for British North America of no less than 3,389,315 square miles.

#### DEBTS OF THE PROVINCES.

Statement per head of debts of all the Provinces:

Canada.....	\$20	50	per head
P. E. Island.....	2	00	“
New Brunswick.....	20	00	“
Newfoundland.....	9	00	“
Nova Scotia.....	15	50	“
All B. N. America.....	19	00	“

The account is correct within a very few cents for Canada—the Sinking Fund being about equal to the adverse Bank Balance. Also for New Brunswick and Newfoundland. In Nova Scotia the construction of new railways is rapidly increasing the debt to the same amount as in Canada. In Prince Edward Island the “unpaid warrants” ought to be added, but even then the amount would not exceed \$3 per head.

The best gauge of the pressure of debt is, however, not its amount, but the interest paid upon it, for which see the preceding statements of “Revenue and Expenditure.”

#### BANKING SYSTEMS AND CAPITAL OF THE PROVINCES.

The following may be taken as about the state of bank business in the Provinces generally, giving round numbers, since, of course, circulation, specie, discounts, &c., vary with the months and with the times:—

	Paid up capital.	Circulation, including Provincial		Deposits.	Discounts.
		Notes.	Notes.		
	\$	\$	\$	\$	\$
Canada.....	30,000,000	12,000,000	28,000,000	44,000,000	
New Brunswick....	2,200,000	1,250,000	1,400,000	4,000,000	
Nova Scotia.....	2,000,000	2,000,000	2,000,000	4,500,000	
P. E. Island.....	200,000	250,000	150,000	500,000	
Newfoundland.....	400,000	500,000	1,000,000	1,500,000	
<b>Total.....</b>	<b>34,000,000</b>	<b>16,000,000</b>	<b>32,550,000</b>	<b>54,500,000</b>	

#### THE SHIPPING OF BRITISH NORTH AMERICA.

Shipping owned in British America:—

Province.	No.	Tons.	Value.
Upper Canada.....	522	85,440	\$2,697,000
Lower Canada.....	1,136	144,989	5,799,560
New Brunswick.....	1,019	309,695	11,000,000
Nova Scotia.....	3,508	363,063	11,976,758
P. E. Island.....	272	39,549	1,334,215
Newfoundland.....	1,486	87,023	3,480,920
<b>Total.....</b>	<b>7,943</b>	<b>1,029,764</b>	<b>\$36,338,453</b>

It is, perhaps, interesting to note that the average tonnage of the vessels owned in the various Provinces is:—

In Upper Canada.....	164	tons.
In Lower Canada.....	128	“
In New Brunswick.....	304	“
In Nova Scotia.....	104	“
In Prince Edward Island.....	145	“
In Newfoundland.....	58	“

The mercantile marine of British America, the sixth in the world, reckoning by number of vessels, is the third when tonnage, the truer test, is taken as the standard, far exceeding already the com-

mercial navies of many European countries distinguished from of old as shipowning communities. The figures are:—

#### NUMBER OF VESSELS.

Great Britain.....	28,632
United States, (not stated in the Returns.)*	18,000
Italy.....	16,092
France.....	9,143
Austria.....	7,933
British America.....	6,944
Sweden and Norway.....	5,000
Greece.....	4,840
Spain.....	3,187
Denmark.....	2,459
Russia.....	2,310
Prussia.....	2,289
The Netherlands.....	829
Portugal.....	637
Oldenburg.....	

#### TONNAGE OF VESSELS.

Great Britain.....	5,627,509
United States.....	1,579,694
British America.....	1,029,765
France.....	985,235
Sweden and Norway.....	760,028
Italy.....	700,000
The Netherlands.....	554,244
Spain.....	367,790
Russia.....	365,759
Greece.....	300,000
Prussia.....	292,256
Hamburg.....	239,766
Bremen.....	206,324
Austria.....	211,287
Denmark.....	143,320

Without entering into comparative statements as to our material resources, for which we have supplied the data, let us now examine the burdens we have to bear at this fresh starting point in the race of rivalry with other countries.

#### 2. ITALY'S NEW ACCESSIONS.

A Florence letter says: “The territory just added to the Kingdom of Italy, and which will send fifty-three representatives to the national parliament at Florence, contains the following nine provinces, each bearing the name of its chief city, and arranged here in the order of its respective population, according to the census taken in 1862. Udine (population, 437,542), Vicenza, (327,734), Verona, (317,855), Treviso, (308,483), Padua, (304,732), Venice, (294,454), Rovigo, (180,646), Belluno, (167,229), Mantua, (154,800); total population, 2,493,475. But if we estimate the importance of each province by the population of its capital, we shall have to adopt a different order, to wit: Venice, (population 123,726), Verona, (103,740), Padua, (103,448), Treviso, (83,861), Vicenza, (82,163), Mantua, (70,812), Udine, (57,124), Belluno, (43,332), Rovigo, (36,010). The most populous centre not comprised in this list (not being the chief town of a province) is the ancient city of Chioggia, a sort of Venice in title, and formerly the seat of an independent republic, which after a long and memorable struggle was finally absorbed by its potent rival. Chioggia is remarkable for its characteristic race of fishermen. The nine provinces above mentioned are divided into eighty-one districts, and into eight hundred and forty-two communes. With the exception of Mantua (which is Lombard), of a few Slavonic villages in the Province of Udine, and of the remarkable ‘seven communes’ of Vicenza, inhabited by a German-speaking population, they are peopled by a homogeneous race, differing in an observable degree, both in appearance and in speech, from their neighbours the Lombards, the Romagnoles and the Piedmontese. In their physical and moral characteristics, no less than in their language, the Veneti are eminently southerners as compared with the other inhabitants of Upper Italy, in whose veins, it will be remembered, there is a strong infusion of Gallic, and, in the case of the Lombards, a further admixture of Teutonic blood. In feature and in speech, the Veneti are of a more decided Latin type. Their language, indeed, bears most unequivocal testimony to their central Italian origin, and the traveller who has sufficient leisure or sufficient acquaintance with the subject cannot fail to be struck by the contrast between the rich inflections and the vocal issonances which meet his ear, immediately after he has set foot on Venetian ground, and the truncated, consonantal forms that he has just left behind him at Turin, at Milton, or at Bologna.”

\* The Shipping Returns of the United States are very defective. They do not show the number of vessels registered, but simply the tonnage. The tonnage given above is new admeasurement; the old admeasurement giving 3,516,787 tons. The tonnage of British America, above, is new admeasurement.

IV. Papers on Meteorology, &c.

I. ABSTRACT OF MONTHLY METEOROLOGICAL RESULTS, compiled from the Returns of nine Grammar School Stations for DECEMBER, 1866.

OBSERVERS.—Barric—Rev. W. F. Checkley, B.A.; Belleville—A. Burdon, Esq.; Goderich—John Haldan, Jr., Esq.; Hamilton—A. MacCallum, Esq., M.A.; Pembroke—Alfred McClatchie, Esq., B.A.; Peterborough—Ivan O'Beirne, Esq.; Simcoe—Rev. J. G. Mulholland, M.A.; Stratford—C. J. Macgregor, Esq., M.A.; Windsor—A. McSween, Esq., M.A.

Table with columns for Station, Barometer at temperature of 32° Fahrenheit, Temperature of the Air, and Tension of Vapour. Includes sub-tables for Monthly Means, Range, and Daily Range.

Table with columns for Station, Humidity of Air, Winds, Number of Observations, Motions of Clouds, Surface Current, and Aurooras. Includes sub-tables for Monthly Means and Aurooras.

Velocity is estimated, 0 denoting calm or light air; 10 denoting very heavy hurricane. BARRIC.—On 8th, sudden fall of barometer during night—wind in morning E, veered round to W at 10 a.m. and blew almost a gale. 14th, brilliant meteor SE, trail visible about thirty seconds; lightning in SW, no thunder. 22nd, continuous rain from 2 p.m. till night of 23rd. Heavy snow storm and high wind from noon 27th, to night of 28th. Rain on 4th, 6th, 8th, 22nd, 23rd. Snow on 18th, 16th, 21st, 24th, 26th, 27th, 28th. Reckoning the Sunday observations at this station, the mean maximum temperature was 30° 62, the mean minimum 16° 96, and mean range 13° 66. BELLEVILLE.—On 4th, from 1 p.m., barometer rose continuously. 666 in 40 hours, but rain began on morning of 6th, continuing at intervals till 8 p.m., at times very fast, with occasional strong wind from S; about 2 p.m., a stronger current from W, creating a whirl for 20 or 30 minutes, after which rain ceased. 2.397 inches fell during week. From 7 a.m., 10th to 7 a.m., 15th, continuous rise of barometer .711, clear cold and bracing. From 10.30 a.m., 16th, to 6 a.m., 17th, snow fall of 10 inches. 20th, a mist, occasionally dense, during night; the temperature, which



gale in gusts till about 8 40. force 8. 5th, deep purplish haze, tipped with crimson, all along WH at 7 a.m. 7th, the same again. 8th, at 12.50 p.m. after rain over, the clouds began breaking (wind SE, 2), it seemed to begin blowing suddenly at the elevation of the clouds, though the wind on surface of the earth was comparatively light. A deep roaring sound was audible, resembling a storm at a distance among the tops of the pine trees, the clouds began to swirl and surge and toss over and over and to break into fragments in a very remarkable manner, and the wind immediately shifted from SE to SW. 28th, blew a gale after 10 p.m. during night. Falling stars observed 10th, 11th (very many), and 13th. On 14th, a very fine meteor at 9.20 p.m., passed across Z rapidly, illuminating the atmosphere like a flash of lightning, and leaving a long streak of light which faded away gradually and very slowly. 15th, halo round moon. 21st, partial halo round sun. Rain on 4th, 6th, 8th, 22nd, 23rd, 24th. Snow on 9th, 10th, 12th, 22nd, 24th, 25th, 26th, 27th, 28th.

SIMCOE.—Rain on 3rd and 4th. On 5th, solar halo at 1 p.m. 8th, rain with south wind began about 3 a.m., ended 9 30 a.m., when wind changed to SW and WSW with velocity 6 or 7; clouds broke up and passed rapidly in same direction; occasionally during day clear sky; occasional light showers; thermometer fell suddenly during night after the storm, which continued till after midnight. Light showers with scarcely any intermission from 2 p.m. 22nd till 1 p.m. 24th. On 27th, aurora in the form of a northern twilight from 9 to 9.30 p.m. Snow on 9th, 11th, 16th, 19th, 24th, 25th, 26th.

STRATFORD.—On 10th, mill pond frozen. 16th, snow from 6 a.m. to 6 p.m., depth 2 inches. On 22nd, rain began at 8 p.m., and ended 23rd at 9 p.m., depth .6429 inches. Violent storms of wind 8th and 9th. Storms of wind also on 10th, 11th, 15th, 16th. On 27th, violent storm of wind and snow began at 11 a.m., and ended during night between 28th and 29th; good sleighing 27th. Rain on 3rd, 4th, 6th, 8th, 22nd, 23rd. Snow on 8th, 9th, 10th, 11th, 12th, 16th, 19th, 24th, 25th, 26th, 27th, 28th. Fog on 23rd. A lower indication of barometer than is noted in the table above was observed here on Sunday 23rd, at 9 p.m., viz., 27.945.

WINDSOR.—Month remarkable for cloudiness. Rain on 3rd and 22nd. Snow on 13th, 15th, 16th, 19th, 24th, 26th, 27th. Storms of wind on 3rd, 4th, 8th, 10th, 11th, 12th, 15th.

### V. Papers on Scientific subjects.

#### 1. HOW TO VENTILATE SCHOOL HOUSES.

All the windows of a school room should be hung with pulleys, in order that they may be easily raised or lowered. If windows and doors are skilfully used, a tolerably good degree of ventilation can be secured. The ventilation will be much more perfect if the arrangement be adopted which is indicated in the designs representing the internal arrangements of a school-house. In this arrangement, the smoke-flue starts from the cellar and runs out at the roof; and starting at the floor of the school-room, a ventiduct is carried up in front of it, and separated from it by a sheet-iron partition. In this way the smoke in the flue will heat, and of course expand, the air in the ventiduct, and make it rise in a strong current, while the air in the ventiduct will not interfere with the draft in the flue. The smoke-flue should be about twenty-four inches by nine inches, and the ventiduct the same. The stove or furnace may have two pipes, one running to each smoke-flue. The ventiduct should have two registers, one at the ceiling and the other at the floor, though during the school sessions—unless the room be too warm—the upper one should be closed. Impure air is heavier than other air, and will generally find egress from near the floor.

If a stove must be placed in the room, it should be surrounded with a tin casing made to extend from the floor to about one foot above the top of the stove. There should be a door in the casing for putting in fuel; and a trunk for the conveyance of fresh air should start outside of the building, run under the floor, and communicate directly with the stove. This arrangement will distribute the heat much better about the room, and avoid those cold currents of air which always, in a room heated by an ordinary stove, sweep along the floor from the bottom of doors and windows, and openings in the floor or walls.—*Wickersham's School Economy.*

#### 2. METRIC SYSTEM OF WEIGHTS AND MEASURES.

In July last the Metric system of weights and measures was formally adopted by the United States Congress, and a law passed, authorizing it to be used throughout the various States. One section of the Act declares that the following shall be the various lawful "Measures," of the system to be substituted for the old measures :

#### MEASURES OF LENGTH.

Metric denominations and values.		Equivalents in denominations in use.
Myrameter . . . . .	10,000 metres.	6.2137 miles.
Kilometer . . . . .	1,000 metres.	0.62137 mile, or 3280 ft. and 10 in.
Hectometer . . . . .	100 metres.	328 feet and 1 inch.
Dekameter . . . . .	10 metres.	393.7 inches.
Meter . . . . .	1 metre	39.37 inches.
Decimeter . . . . .	1-10 of a metre.	3.937 inches.
Centimeter . . . . .	1-100 of a meter.	0.3937 inches.
Millimeter . . . . .	1-1000 of a meter.	0.394 inches.

#### MEASURES OF SURFACE.

Metric denominations and values.		Equivalents in denominations in use.
Hectare . . . . .	10,000 sq. metres.	2.471 acres.
Are . . . . .	100 sq. metres.	119.6 square yards.
Centare . . . . .	1 sq. metre.	1550 square inches.

#### MEASURES OF CAPACITY.

Metric denominations and values.			Equivalents in denominations in use.	
Names.	No. of liters.	Cubic Measure.	Dry Measure.	Liquid or Wine Measure.
Kiloliter or stere	1,000	1 cubic meter.	1.308 cu. yards.	264.17 gallons.
Hectoliter . . . . .	100	1-10 cubic meter.	2 bu., 3.35 peks.	26.417 gallons.
Dekaliter . . . . .	10	10 cu. decimeters.	9.08 quarts.	2.6417 galls.
Liter . . . . .	1	1 cu. decimeter.	0.908 quarts.	1.0567 qts.
Deciliter . . . . .	1-10	1-10 cu. decimeter.	6.1022 cu. inch.	0.845 cills.
Centiliter . . . . .	1-100	10 cu. centimeters.	6.102 cu. inch.	0.338 fl. ozs.
Milliliter . . . . .	1-1000	1 cu. centimeter.	0.061 cu. inch.	0.27 fl. drs.

#### WEIGHTS.

Metric denominations and values.			Equivalents in denominations in use.
Names.	Number of grains.	Weight of what quantity of water at maximum density.	Avoirdupois Weight.
Miller or Tonneau . . . . .	1,000,000	1 cubic meter . . . . .	2204.6 pounds.
Quintal . . . . .	100,000	1 hectoliter . . . . .	230.46 pounds.
Myriagram . . . . .	10,000	10 liters . . . . .	22.046 pounds.
Kilogram or kilo. . . . .	1,000	1 liter . . . . .	2.2046 pounds.
Hectogram . . . . .	100	1 deciliter . . . . .	3.5274 ounces.
Dekagram . . . . .	10	10 cubic centimeters . . . . .	0.3527 ounces.
Gram . . . . .	1	1 cubic centimeter . . . . .	15.432 grains.
Decigram . . . . .	1-10	1-10 of a cu. centim'tr . . . . .	1.5432 grains.
Centigram . . . . .	1-100	10 cubic millimeters . . . . .	0.1543 grains.
Milligram . . . . .	1-1000	1 cubic millimeter . . . . .	0.0154 grains.

The Boards of Trade of Milwaukee and Albany have resolved to adopt this system. The change from the old system of grain measurement to the new standard is simple. Suppose it to take effect on a day when the market quotations are as follows :

No. 1 wheat (per bush., 60 lbs.) \$2 06 | No. 2 oats, (per bush., 32) . . \$0 43  
 No. 1 corn (per bush., 56 lbs.) . . 0 80 | No. 2 barley per bush. 48 lbs. 0 68

To find the equivalent price per cental annex two ciphers to the price per bushel, and divide this amount by the number indicating the pounds required of the given grain to make a bushel: the quotient will be the price per cental. Thus amended, the above table would read (adopting the usual rule with the last figure) :

No. 1 wheat, per cental . . . \$3 43 | No. 2 oats, per cental . . . . \$1 34  
 No. 1 corn, per cental . . . . 1 43 | No. 2 barley per cental . . . . 1 42

The Chicago Board of Trade have resolved that after March 1st, 1867—other Boards of Trade concurring,—all their transactions in grain, seeds, etc., shall be conducted in centals instead of bushels.—*Illinois Teacher.*

#### 3. VARIOUS SCIENTIFIC NOTES.

China has within her boundaries what is called a Tallow-Tree, the product of which has become a great article of commerce. For the most part, this tree is found in the northern part, and yields an article which furnishes an excellent light, free from smoke or smell. It is prepared from the seeds. The tree grows rapidly and luxuriantly, yielding fuel in abundance, and its leaves being used for coloring purposes. In India, it has lately been introduced. Trees, growing from the seed, and only eight years old, are six feet in circumference.

The French are experimenting with oxygen gas for illuminating purposes. The objection, at first, was its costliness, the cost being one dollar per cubic foot. Recent experiments show that it can be furnished at two cents per foot. It is obtained from the reaction of silica upon sulphate of lime. By directing a jet oxygen through an ordinary gas-burner, the illuminating power of the gas is increased, thereby saving in expense 30 or 40 per cent. It is conducive to health, because other hurtful gases are consumed.

The story that the upas-tree of the island of Java exhales a poison-

ous aroma, the breathing of which causes instant death, is now known to be false. The tree itself secretes a juice which is deadly poison, but its aroma or odor is harmless. Strychnine is made from the seeds of a species of the upas-tree. It is said that there is a poisonous valley in Japan where this tree grows. Such is the name of a district, the atmosphere of which produces death. The effect, however, is not occasioned by the upas-tree, but by an extinct volcano near Batar, called Guena Upas. From the old crater, joining the valley, is exhaled carbonic gas, such as often extinguishes life in this country, in old wells and fowl places. The deadly atmosphere kills every created thing which comes within its range,—birds, beasts and men. By a confusion of names, the poisonous effects of this deadly valley have been ascribed to the upas-tree.

One of the curiosities which will figure at the Paris Exhibition is a perpetual motion pendulum, which has been in motion for three years, and is still in motion. A watchmaker in Paris is the inventor.

The capital of the Atlantic Telegraph Company, when the cable is in final working order, will be £600,000, or say, in round figures, \$4,000,000. The governments of the United States and of Great Britain give a subsidy between them of \$175,000 a year, and the cable, having passed four thousand words in twelve hours, may be held capable of passing messages which, at the charge at present fixed, will yield an income of about \$3,000,000.

In 1865, the length of the various telegraph wires centering in Paris was about 50,000 miles, enough to put a girdle twice round the earth. There are 610 officers for the working of these lines, and the number of messages sent over them was 2,967,748, for which the charge was \$1,224,665.

A plan is in contemplation to supply the City of Buffalo from gas-wells at Amherst, ten miles distant. One well is said to flow 40,000 feet of pure gas every day. It is proposed to dig five more, which are estimated to yield 200,000 cubic feet per day.

Scientific men assert that brick walls are a great help to ventilation, especially when they are old and dry. Hence the unhealthiness of new and damp dwellings.

Two iron wheels 4 feet in diameter, weighing 1,600 pounds, and revolving 80 times in a minute, generate a sufficient heat to warm a large factory. They are turned by a band and water wheel, and are said to last four years.

A variable star has been discovered in the Northern Crown. Its rate of decrease in brilliancy has been noted at the Washington Observatory. It seems to lose 4 of a magnitude daily. When first observed, it was a star of the second magnitude, now it is of the eighth.

A fibre of silk a mile in length weighs only 12 grains, so that there are 584 miles of fibre in a pound avoirdupois.

Tin wire, 1-13 of an inch in diameter sustains 34.7 lbs.; lead wire 28 lbs.

#### 4. LONGITUDE BY THE CABLE.

A writer of the Boston *Traveller* furnishes the following information:—

"The difference of longitude between England and America has hitherto rested upon the chronometric expeditions instituted by the coast survey during the years 1849-51 and 1855. Fifty chronometers were transported between Liverpool, England, and Cambridge, Mass., three times in each direction across the Atlantic. The probable error of the result by these expeditions was nineteen-hundredths of a second. The value thus obtained, though for all practical purposes sufficiently precise, is not so for the necessities of astronomical science in its present refined state. When, therefore, the success of the cable provided telegraphic trans-Atlantic connection with England, parties of the coast survey were formed under the direction of Dr. B. A. Gould, to take advantage of this means of obtaining a value more precise than that furnished by the chronometric expedition, allusion to which has been made.

"The peculiarities in the methods and apparatus employed in working the cable, render the process of determining longitude by its means different in many respects from that by the land telegraph lines. New obstacles, which made success exceedingly doubtful, were to be surmounted, and new sources of error eliminated. But thanks to the genius, experience and perseverance of Dr. Gould, these have been overcome, and results of remarkable precision elicited. The probable error of the resulting longitude is about four hundredths of a second. Perhaps it will give the reader a clearer idea of the nicety implied in this, by stating that a distance of about nineteen hundred miles has been measured, and that the measure is not probably four feet from the truth.

"The time required for a signal to pass through the cable has been discovered with still greater precision to be thirty-one hundredths of a second; which is probably not in error by one hundredth of a second.

"This is equivalent to the velocity of six thousand and twenty

## VI. Biographical Sketches.

miles a second, and is notably less than the velocity of the electric upon land lines, which numerous observations have shown to average sixteen thousand miles in a second."

### No. 4.—COLONEL STRICKLAND.

Samuel Strickland, Esq., was born on the 6th day of November, 1804, at Reyden Hall, Suffolk, England. He was the eldest son of Thomas Strickland, Esq., and Elizabeth Homer, eldest daughter of John Homer, Esq., of Barking, Essex. He was educated at Dr. Valpy's school in Norwich, and emigrated to Canada in 1825. He settled, in the first instance, in Darlington, now Bowmanville, where he married Emma, daughter of Colonel Black, by whom he had one son who did not survive his infancy, and who herself died shortly after the birth of her child, in 1826. In that year the subject of our memoir left Darlington for Peterboro. During his residence in this neighborhood, in 1828, he was engaged as out door superintendent of the Canada Company, by the late Mr. Galt, who was at that time the Company's Commissioner, and he assisted in the first settlement of the town of Guelph. It is an interesting fact that with his own hand he ploughed the first sod that was turned, and sowed the first grain (oats) that was grown in the Huron District, on the flats of the River Maitland at Goderich, in 1829. He was also present when the first sheaf of wheat was reaped in the same district, by Mrs. Von Egmond, on her husband's farm, 18 miles from Goderich, in 1830. On one occasion he was wrecked off Goderich, in the Canada Company's schooner, and owed the preservation of his life to his accomplishment as a powerful swimmer. In 1831, he left Goderich to take up his residence in North Douro, where, before so much as a shanty had been erected in what now constitutes the thriving village of Lakefield, he once more established his home; and where first in a cottage on the lake shore, then in a frame-house on more elevated ground, and lastly in the commodious stone mansion so well known for the hospitality of which it was the constant scene, he resided until his death. When the rebellion broke out in 1837—a commission had been given him in 1825 by Sir P. Maitland in the First Durham militia, and he subsequently served in the seventh incorporated battalion in Peterboro, and was afterwards promoted to the rank of Lieut. Col. of the Peterboro' militia, from which he retired a few years ago, retaining his rank—when the rebellion broke out he was amongst the first of the volunteers who left Peterboro' for Toronto to aid in quelling the insurrection fomented by Mackenzie. In 1851, he returned to England. His sisters Misses Eliza and Agnes Strickland, (the latter the world-renowned authoress) Mrs. G. Wilmyn, wife of the incumbent of Ulverston, Lancashire, Miss Jane Strickland, Mrs. Trail and Mrs. Moodie, both authoresses of repute, and his brother Thomas survive him. He was a J. P. for the county, and he served in the township council, and also in the county council. In politics he was a staunch and uncompromising conservative, and in religion a member of the Church of England. Tolerant ever, he assisted in the erection of no fewer than five churches in his own immediate neighborhood. We may add that he was the author of "Twenty-seven years in Canada," published in England about 13 years ago and favorably noticed by the English press.

### No. 5.—THE REV. EDWARD HINCKS, D.D.

Dr. Hincks was the son of the Rev. Thomas Dix Hincks, LL.D., pastor of the Presbyterian congregation of Prince's Street, in the city of Cork; and, in the latter years of his life, head master of the classical school, and Professor of Hebrew and other Oriental languages in the Belfast Academical Institution. He was also brother to the Hon. Francis Hincks, C.B., and of Rev. Professor Hincks of Toronto University. Dr. Edward Hincks was born in the month of August, 1791. At a very early age, he gave indications of no common powers of observation and comparison. Before he was able to speak, he had learned to put together a dissected map of Europe, and could point out every important country, river, mountain and town on the terrestrial globe. His education under his learned father, was so carefully superintended that he entered Trinity College, Dublin, at an unusually early age taking the first place; and having "gone in" for a fellowship before the completion of his under graduate course, he obtained it, being of all the candidates *facile princeps*. He soon afterwards took orders as a clergyman in the Church of England, was afterwards promoted to the Rectory of Killyleagh, in the Diocese of Down, which is also in the gift of Trinity College; and there he spent the last forty-one years of his life, respected, honoured, and beloved by all who enjoyed the privilege of his acquaintance.

He early manifested a wonderful capacity for deciphering texts in characters and languages equally unknown to him. His first essay in this line was somewhat remarkable. A gentleman desiring to test

the power of learned men in acquiring a knowledge of truths locked up in the obscurity of languages and obsolete alphabets, published in a periodical work a passage from a foreign book which he had transcribed in a set of characters invented by himself, and totally differing from any known form of writing, and requested those who thought themselves skilled in such undertakings to send to the editor a transcript of it in common type, and a translation in the English language. Dr. Hincks did both in twenty-four hours after the magazine came to his hands. The language, it may be observed was Spanish, with which he had no previous acquaintance. This facility of analysis was of great use to himself and to the learned world when he afterwards applied himself to the study of Egyptian Hieroglyphic and Demotic texts, and to the inscriptions in the Cuneiform character found in Persepolis, Nineveh, and other places in the Ancient Empire of Assyria. His interpretations of these inscriptions were at first disputed by men of great experience and paramount ability; but we believe that at length his principal opponents, and rivals—Rawlins, Grotefend, and others—have admitted that his fundamental principle was right, and have acknowledged that all consistent and trustworthy interpretation of these texts must proceed on the principles which he was the first to discover and explain.

Dr. Hincks lived and died—incomparably the most learned man in the Irish Church, and inferior to none in personal and moral qualification, never owed one farthing to the favor or patronage of the Crown, except a literary pension bestowed upon him not long since in acknowledgement of his labors as a scholar. He also had an Order of Knighthood conferred upon him by the King of Prussia, on similar grounds. Most of his publications appeared in the Transactions of the Royal Irish Academy and other learned societies many of which had enrolled him among their members. We have been informed that an entire volume of the Transactions of the Academy consists of papers from his pen. He also read some interesting papers at the meetings of the British Association, and some which excited much attention at public meetings of the Natural History and Philosophical Society of Belfast. He was also brother to the Honorable Francis Hincks, C.B., and of the Rev. Professor Hincks of Toronto University.

#### No. 6.—CARDINAL GOUSSET ARCHBISHOP OF RHEIMS.

A man well known in Europe for his very great learning has just been taken away. Cardinal Gousset, archbishop of Rheims, was born in 1792. He was the son of a farmer and worked in the fields until the age of 17, when he entered a clerical college for his education. He was afterwards known as a man of extensive learning, and became bishop of Perigeux in 1835. He was promoted to the archbishopric of Rheims in 1840 on the death of Mgr. de Latel. The Pope created him cardinal in 1850. The whole career of the deceased prelate presents a remarkable example of what can be effected by a strong will supported by fair ability.

#### No. 7.—NATHANIEL P. WILLIS, ESQ.

Mr. Willis, a poet, critic, and journalist of considerable talent, was born in Portland on January 20th, 1807, and died on January 20th, 1867, his sixtieth birth-day. While a child he was removed to Boston, and received his first education at the Latin school of that city and the Phillip's Academy at Andover. He entered Yale College in the seventeenth year of his age, and about the same time produced a series of poems on sacred subjects, which obtained for him some reputation. Immediately after he had graduated, in 1827, he was engaged by Goodrich ("Peter Parley") to edit "The Legendary" and "The Token." In 1828 he established the "American Monthly Magazine," which he conducted for two years and a half, when it was merged in the "New York Mirror," and Willis came to Europe. On his arrival in France he was attached to the American legation by Mr. Rives, the minister at the Court of Versailles, and with a diplomatic passport he travelled in that country, Italy, Greece, Asia Minor, Turkey, and last of all in England, where he married. The letters he wrote while abroad, under the title of "Pencilings by the Way," first appeared in the "New York Mirror." In 1835 he published "Inklings of Adventure," a series of tales, which appeared originally in a London magazine under the signature of "Peter Slingsby." In 1837 he returned to the United States, and retired to a pleasant seat on the Susquehanna, where he resided two years. Early in 1839 he became one of the editors of the "Corsair," a literary gazette in New York; and in the autumn of the same year he came again to London, where in the following winter, he published "Loiterings of Travel," in two volumes, and "Two Ways of Dying for a Husband." In 1840 appeared his "Poems," and "Letters from under a Bridge." About the same time he wrote the descriptive portions of some pictorial works on American scenery and Ireland. In 1843, with Mr. G. P. Morris, he revived the "New York Mirror," which had been discontinued

for several years, first as a weekly, then as a daily gazette; but withdrew from it upon the death of his wife in 1824, and made another visit to England, where he published "Dashes at Life with a Free Pencil," consisting of stories and sketches of European and American society. On his return to New York he issued his complete works, which filled a closely-printed imperial octavo volume of several hundred pages. In New York, he was associated with Mr. Norris, as editor of the "Home Journal," a weekly gazette of literature. Mr. Willis belongs to what has been styled the Venetian school in letters. There is no drawing, but much colouring in his pictures. His stories have little probability, coherence, or consistency; but the abundance of ornamental details scattered over his writings have gained for him considerable popularity.—*Montreal Daily News.*

### VII. Miscellaneous.\*

#### 1. TWO LITTLE PAIRS OF BOOTS.

Two little pairs of boots, to-night,  
Before the fire are drying;  
Two little pairs of tired feet  
In a trundle bed are lying.  
The tracks they left upon the floor  
Make me feel much like sighing.

These little boots with copper toes!  
They run the livelong day;  
And oftentimes I ALMOST wish  
That they were miles away;  
So tired am I to hear so oft  
Their heavy tramp at play.

They walk about the new-ploughed ground,  
Where mud in plenty lies;  
They roll it up in marbles round,  
They bake it into pies,  
And then at night upon the floor  
In every shape it dries!

To-day I was disposed to scold;  
But when I look to-night,  
At those little boots before the fire  
With copper toes so bright,  
I think how sad my heart would be  
To put them out of sight.

For, in a trunk up-stairs I've laid  
Two socks of white and blue;  
If called to put these boots away,  
O, God, what should I do?  
I mourn that there are not to-night,  
Three pairs instead of two.

I mourn because I thought how nice  
My neighbor 'cross the way  
Could keep her carpets all the year  
From getting worn or grey;  
Yet well I know she'd smile to own  
Two little boots to-day.

We mothers weary get and worn  
Over our load of care;  
But how we speak to little ones  
Let each of us beware;  
What would our firesides be to-night,  
If no little boots were there!

N. Y. Evangelist.

#### 2. ROYAL MARRIAGE IN RUSSIA OF THE PRINCESS ALEXANDRA'S SISTER.

Morning had scarcely dawned when the guns of Petropavlovsk, the fort on the northern bank of the river, opposite the Winter Palace, announced that the day of the Imperial marriage had ar-

\* NOTE TO TEACHERS.—FRIDAY READINGS FROM THE JOURNAL.—Our Chief motive in maintaining the "Miscellaneous" department of the Journal is to furnish teachers with choice articles selected from the current literature of the day, to be read in the schools on Fridays, when the week's school-work is finished, as a means of agreeable recreation to both pupil and teacher. Several teachers have followed this plan for several years with most gratifying success.

rived. Soon after a hurricane of clangor burst forth from the bells of the capital. Every church having five domes at the least, and a corresponding number of bells, the air seemed to vibrate far and near with heavy, harmonious sounds. To this accompaniment I went to the Winter Palace. There was great bustle and animation in the streets, yet the hundreds of carriages and cabs hurrying along with Russian speed failed to crowd the immense squares and thoroughfares of that Imperial neighborhood. The state-rooms through which I passed were nearly all covered with white stucco, and decorated with bronze ornaments of chaste and simple style. In many the Corinthian column and rectangular window prevail; others exhibit the less classic features of the Renaissance and abound in twisted pillars laden with gilded foliage and curious arabesques; but the general character of the whole is grandeur rather than pomp, and though no attempt is made to aspire to anything exquisitely artistic, the eye everywhere meets fine and symmetrical combinations of form, size and color. There were two throne-halls, the larger of which differed but little in general aspect from other rooms of the same size and height. The smaller, draped with red velvet, and with the throne placed in the niche in front of a glorious picture of Peter the Great, is, perhaps, the most tasteful apartment of all I have seen. But even this seeks to impress rather by a proud plainness of style than by gorgeoussness or glitter. The grand unaffected simplicity with which the whole city is built is deliberately repeated in the adornment of the Imperial Palace.

In a long narrow passage, which deserves to be specially mentioned, many hundreds of portraits are panelled on the walls. They represent the Generals who fought against Napoleon I., and, with the Emperor Alexander, his victorious enemy, occupying a whole side of the gallery for himself, are an interesting illustration of a great and decisive time. Another hall devoted to the memory of the various field-marsals who distinguished themselves in the same war, contains the portraits of some Russian Generals, with the "Iron Duke," and old Blucher associated with them. There were also pictures of battles, showing within their enormous frames whole fields of contest. The gay and brilliant crowd was now fast assembling. The room positively sparkled with the shine of tunics, catans, and dress-coats of every cut and form. The variety of official vestment was astonishing. Officers in English military coats alternated with others wearing Polish, Cossack and Circassian dress. The sons of the Don, in scarlet blouses, appeared in friendly proximity to the descendants of the gallant men who, in the hills of the Caucasus, have so long withstood the whole might and main of the Czar. Some of these foreign mountaineers were clad in Carmoisin velvet, trimmed with sable fur and set off by red and golden facings. On the breasts as well as the backs of their blouses they had rows of folds sewed on to hold cartridges, the rest of their armament being equally distributed over both sides of their body. Two pistols behind and another in front seemed to be a favorite mode of equipment. In that corner a bevy of generals, with resplendent epaulettes, were conversing on the events of the day; here ministers, without any epaulettes at all, but with an intricate arrangement of boughs, leaves and fruit on their dresses, were courteously doing the honors of the place to foreign guests. Councillors of state, judges and members of the senate, the synod, the academy of science, and many other scientific and administrative boards were present. This superb assemblage consisted of the men that govern Russia.

As the crowd began to thicken, the first ladies made their appearance. Nearly all of them were clad in white silks, with trains exhibiting every hue and shade; strips of colored velvet trimming the bodies, and in many cases the skirt also, constituted the peculiar element of the "Russian dress." Another feature of the national costume prescribed for the occasion, was the kakosh hik or diadem worn by all the ladies, excepting the bride. It is a semicircular band covered with velvet and studded with pearls and jewellery so graceful and becoming that it reflects no little credit on the taste of the peasant girls, the original devisers of this ornament. The ladies had magnificent robes, but the grand display of jewellery was reserved for the ball in the evening.

Leaving the Field-Marshal's hall before the arrival of the Imperial procession, I threaded my way to the Chapel Royal. Detachments of various troops of the guard were drawn up here and there, and every door watched by the cuirassiers of the body guard. Gigantic men in scarlet uniform, with buckskins, top-boots, and steel helmets, crowned with the two-headed eagle, stood like so many mute statues in the places assigned to their care. They are the Russian Horse Guards, and though an eye accustomed to the sight of the two silent horsemen holding watch and ward in White-hall, may be excused for preferring the familiar to the foreign, it must be admitted that the latter too are no bad specimens of strength and elegance combined.

The Chapel Royal, in which the ceremony was to be performed, already swarmed with the cream of the aristocratic company invited.

It is a hall of moderate dimensions, in the French style of the last century. White walls, copiously studded with bronze garlands, festoons, and diminutive angels, impart to it a courtly rather than a religious air. To this part of the church, destined for the congregation, there is joined a dome containing the altar. In the first dome the clergy were already in attendance. At their head was pointed out to me the Archbishop Metropolit of Novgorod and St. Petersburg, than whom there is only one greater ecclesiastic, the Archbishop of Moscow, in the empire. With him were four other bishops, old men, all wearing the silver tiaras, and ample mantles of their rank. Archpriests, with uncovered heads and long flowing hair, reaching to the shoulder, stood beside them in violet cloaks; other priests were seen stationed in the background. In a niche on the right stood the Court singers—boys and men of all ages. Close to them, in the front part of the chapel, I saw Prince Menschikoff leaning against the rail. A friendly old gentleman, with bright eyes and relaxed features, he certainly did not look like one who but twelve years ago caused a sanguinary war. Sir Andrew Buchanan, in British diplomatic uniform, with the order of the Thistle round his neck, was talking with his fellow ambassadors. A Greek general, in loose jacket and Oriental gaiters, was noticeable by contrast, and French Marquises, German Grafs, and Italian Contes vied with Russian Princes in the profusion of Orders and the elegance of garb.

Suddenly the hum is hushed. A master of ceremonies, *baton in hand*, has entered to announce the appearance of the marriage procession. While the same message is being given to the town by the guns outside, the *equerries* and *fouriers de la cour* enter the chapel. The masters of ceremonies, the chamberlains, and the various *charges* of the Court follow in due succession. And now the Emperor and Empress come in sight, preceded by Count Schuvaloff, the Grand Marschal. His Majesty is in the uniform of a General, and leads his Royal spouse to the Metropolit, standing in the centre of the church to receive them. As the aged dignitary slowly and gently waves his cross to and fro, the Emperor stoops to kiss the sign of Salvation, and to cross himself on forehead and chest with holy water. The Empress repeats the sacred rite, and places herself beside her august husband. The Crown Prince Czarewitch is the next to enter, to kiss, bow and cross himself in accordance with the devout forms of the Church. After him walk in princess Dagmar, or, as she has been lately called, the Orthodox Grand Duchess Maria Fedorowna of all the Russians. She walks in beauty. The Metropolit, who looks as though he had stepped out of the frame of some ancient picture of the church, inclines himself to the blooming girl as she conforms to the requirements of the national creed. Her Imperial Highness steps back to the three principal members of her family, who have already entered the sacred edifice. The four stand together, and the eyes of all present centre upon them. In them is compassed the present and future of this immense empire. The Czar, tall, majestic, with the habit of command and the disposition to kindness clearly legible on his manly features, is not only the first, but also the finest man in the room. His Queen, whom sickness has not robbed of the feminine grace which clothed her younger years, is readily recognizable from the well known portraits representing the beautiful Mary of Hesse. In a white dress, with a train of gold stuff, trimmed with ermine, and a sparkling diadem on her head, her Majesty looks worthy to be a queen. The Grand Duke, successor to the throne, is rather stout for his age, with a good share of will and resolution stamped upon his youthful face. Like a rose growing in the shadow of an oak, Princess Dagmar stood beside him. Her lovely features were animated by the excitement, and in her eye shone confident the hope of future happiness. On her dark locks rested a crown of priceless diamonds, graceful and light as a wreath or a chaplet of flowers. A superb brooch, if a jewel covering nearly the whole upper part of the bodice can be called so, glistened on her breast. Her robe was of white moire-antique, and her train, carried by four chamberlains, of crimson velvet, trimmed with ermine.

Their Royal Highnesses the Prince of Wales, the Crown Prince of Prussia, and the Prince of Denmark entered next. Then came the younger son of the Emperor, Princess Vladimir, Alexis, Serge and Paul, the Grand Duke Constantine, and his consort with their children, and after them the other Princes and Princesses of the blood, close the royal party of the procession. All went through the same ceremony of kissing the cross offered them by the Metropolit, and all in turn were kissed, so it seemed to me by the Metropolit. He bowed lovingly down to the little children, as they went up to him, one after the other, and when the last of them had made obeisance before the cross, returned with his clergy to the altar. The Imperial family and their royal guests then likewise preceded to the centre of the church, the remaining members of the procession, as they came in, disposing themselves in the entrance-hall. There were but few ladies in the train.

And now the service began. The clergy having ranged themselves

round the altar, prayers were intoned by them, and hymns and responses chanted by the singers. The serious and measured music of the Greek Liturgy is rich in beautiful cadences, and may, perhaps, be best described as something between the rigid austerity of the Lutheran choral and the lighter rhythms of the Romish church. The solos are chiefly recitatives, broken by the constant repetition on the part of the choir of the responses, "God, be gracious to us," and "God, we cry to thee." In the more independent parts of the choral singing, soft voices of children are effectively blended with sonorous basses. At a certain part of the service the Czarewitsch and his bride stepped forward from the circle of the Imperial family, and having been conducted by the Emperor to a raised dais, joined in the prayers of the Metropolit. Later, two younger Princes of the blood, one of whom I recognized as Prince Alexis, approached and held above the heads of the bridal pair the marriage crowns peculiar to the orthodox ritual. They resemble in shape and size the Episcopal tiaras, and seem to be of silver wire, or some such material, interwoven with silk.

This singular ceremony continued for about twenty minutes, the officiating Princes being repeatedly obliged to change their hands from weariness. Suddenly the music became softer, quicker and more melodious. Its eloquent notes predicted the speedy consummation of the hallowed act. To this tune bride and bridegroom were led thrice round the altar by the Metropolit. Then they were pronounced to be man and wife. An exchange of rings in this country only takes place at the betrothal.

While the young Prince and Princess Alexander were still receiving the congratulations of their illustrious relatives, a hoary arch-priest, with stentorian voice, intoned a prayer for the health and welfare of the Czar, his wife, and children. His appeal to the Deity was preferred in urgent accents, the other clergy chiming in, and with many inflections and genuflections, asking blessings on the head of their beloved sovereign. A rolling *Te Deum* terminated the service. It was a glorious composition, and jubilantly sung.

At its close the Imperial family, having received the felicitations of the clergy, left the chapel with their royal guests. The only difference to the order in which they entered was that the bridegroom and bride walked side by side. They all acknowledged the respectful salutations of the spectators. The procession re-formed, and accompanied the Imperial personages to their private apartments. As I left the palace the first snow had fallen. Russia had assumed her national garb to welcome her future Queen.—*Correspondence of the London Times.*

### 3. GREAT BRITISH DURBAR IN INDIA.

One of the most magnificent assemblages, of principalities and powers that ever took place in India, met on the 12th of November, at Agra, to do homage to Sir John Lawrence, Viceroy of India, as representative of the Queen of England. At this Durbar there were more native princes than ever attended the Durbars of the Great Mogul, and yet only about the third part of British India was represented. There was, as we have said, a great concourse of native princes (some of whom traced their descent from before the time of Alexander the Great) all decorated in magnificent and varied costumes, and glittering, not only with 'barbaric pearl and gold,' but with the most magnificent array of diamonds that was, perhaps, ever displayed at any single assembly in the world. These native princes consisted of two, or, more properly speaking, three classes. First, the ancient families of the country, who have always so far as they could, stood aloof from all invading and upstart dynasties, and who had never attended any British Durbar before. These are the chiefs of the Rajpoots and other pure ancient races of India, who have looked down alike on Mogul and English conquerors. The second class were the remaining chieftains of the Mogul empire, dating only some three or four hundred years back; and the third were the upstart Mahrattas and other plundering chieftains, who acquired great power and dominion about a hundred years ago, and who for a long time fiercely disputed the empire of India with England. It is a somewhat singular fact that the British government in India never had any trouble with the first class, and very little with the second. It was only the upstart potentates who were angry that England could stretch farther and grasp more than themselves, that have seriously opposed British progress and authority.

Among the various ranks and orders composing this great assemblage, all exceedingly tenacious of their dignity and privileges, and jealous of the slightest infringement of etiquette, it required a ruler as well versed in Indian costumes and ideas as Sir John Lawrence to maintain order and good humor. The great point with the representatives of the high old families was to get the Queen's representative to advance, not only to the edge of the carpet on which he stood, but a few inches beyond it, so that they might boast of being more honored than the rest; but he, though he knew

exactly to an inch how far to advance to meet each, and came nearest the edge for those highest in authority and antiquity, would not compromise the dignity of the Queen by going in any case an inch beyond. The great difficulty in point of etiquette, however, occurred when the new order of Indian Knighthood was conferred on a select few, and the knights took precedence in the order of their appointment. A high dignitary, who would far outrank another of inferior standing in all other relations, would find himself placed behind that other as a knight of more recent appointment: and it was only after the fullest explanation, that the Prince of Wales himself would take his place below an older knight, that they reluctantly assented to take the places assigned to them.

The excellent Viceroy gave the assembled half-independent sovereigns some very profitable advice, such as they should travel over India and other countries to enlarge their observation and knowledge, instead of shutting themselves up in their castles and devoting their lives to luxury or intrigue, and that they should open up their countries to the civilizing and enriching pursuits of commerce.

Such an assembly as this from all parts of northern and central India, under such enlightened and experienced auspices as those of Sir John Lawrence, cannot fail to do much towards the elevation and enlightenment of India.

### 4. VICTORIA CROSS IN CANADA.\*

A warrant under Her Majesty's sign manual orders that the Victoria Cross may be conferred on persons who may hereafter be employed in the local forces raised, or which may be raised, in the colonies and their dependencies generally.

In the *London Gazette* it is notified that the Queen intends to confer the Victoria Cross on private Timothy O'Hea, 1st battalion, Prince Consort's Own Rifle Brigade, for his courageous conduct on the occasion of a fire which occurred in a railway car containing ammunition between Quebec and Montreal, on the 9th of June last. The sergeant in charge of the escort states that when at Dunville station on the Grand Trunk Railway, the alarm was given that the car was on fire; it was immediately disconnected, and while considering what was the best to be done, private O'Hea took the keys from his hand, rushed to the car, opened it, and called for water and a ladder. It was stated that it was due to his example that the fire was suppressed."

### 5. HOW THE SOUTH STILL HONOURS ITS DEAD.

The *New Orleans Crescent* has the following account of the obsequies of the Confederate general Albert Sidney Johnston in that city:—"A tribute of respect was paid to the memory of the great leader which has never before been witnessed in this city—not even when Colonel Charles DreuX was interred—the first of the war victims from the state, and one of the most popular men that has ever lived in our midst. The mark of respect which was shown upon the present occasion was the marching in procession, and on foot of the ladies of the city.

"In this extraordinary procession we observed many ladies of advanced years, and all, young and old, walked through mud and mire in the middle of the street. Such a spectacle has never been seen in New Orleans within our observation. We are told that at the funeral of the wife of an illustrious general, which occurred in the midst of the war, there was a like exhibition of womanly sentiment, a sentiment expressing admiration for heroism and respect to every one allied to the hero; but with the exception of that sad solemnity, which we did not witness, no such spectacle as that of yesterday has been seen in New Orleans during the last quarter of a century, and perhaps never before.

"No one, so far as we could observe, rode, excepting the ministers who officiated, and one of the generals who had lost the use of his limbs. The rest followed, although the way was a long one, on foot. It was composed, without exception, of the most respectable population of the city. It certainly was the saddest we have ever seen. There was not an exclamation or a shout upon the streets as it passed; there was no appeal to the emotions in any dire-like music; there was scarcely any whispering or conversation in the immense throng that followed." The *Picayune* says:

"No stranger could have supposed that the plainly-attired pallbearers who walked beside the hearse were generals high in rank and reputation—men who had led armies to battle and to victory; who had defended cities and who had organized campaigns. Among them were several who had been the friends and associates of the de-

\*Few who remember the gallantry displayed by Dr. S. P. May (of the Educational Department of U. C.) Assistant Surgeon of the Queen's Own Rifles, at Ridgeway on the 2nd of June, but feel that he, too, richly deserves some such mark of honor for his heroism on that memorable day.



ceased in the old army of the United States, and some who had been his lieutenants in the recent war, and who stood beside him on that fatal but glorious day which deprived the confederacy of his services. There was Beauregard, the favourite son of Louisiana, who immediately succeeded him in command of the army; there was Bragg, his energetic and indefatigable chief of staff; there was Buckner, who so gallantly fulfilled the chieftain's orders, by the heroic but fruitless defence at Donaldson.

"It is remarkable, too, that among this distinguished assemblage there were three men, Beauregard, Bragg and Hood, who had each in turn succeeded to the command of the army upon which the life and the death of its first leader seem to impress a peculiar character and a strange fatality—an army, whose history was illustrated by so many heroic deeds and so many signal misfortunes—an army which seemed to have inherited its heroism from his life and its misfortunes from his death.

"Besides those just named, there were present among the pall-bearers, General Richard Taylor, who achieved the splendid victories of Mansfield and Pleasant Hill; General Harry T. Hays, who commanded the famous Louisiana brigade in the Army of Virginia; General James Longstreet, whose name is memorable as the commander of a corps of General Lee's army, and who won distinction on so many battle fields from Virginia to Georgia, at Manassas and at the second Manassas, at Gaine's Mill Frazer's Farm, Chickamauga, and at the Wilderness; General Jeff, Thompson, so renowned for his partisan exploits in the West; General R. L. Gibson, who fought under the lamented Johnson at Shiloh, and who led his brigade of Louisianians through all the bloody battles in which the Army of the West was engaged; General Dabney H. Maury, whose gallant defence of Mobile added a tinge of glory to the closing of the war."

## 6. MENTAL AND MORAL LABOUR.

Professor Houghton, of Trinity College, Dublin, has published some curious chemical computations respecting the relative amounts of physical exhaustion produced by mental and manual labour. According to these chemical estimates, two hours of severe mental study abstract from the human system as much vital strength as is taken from it by an entire day of mere hand-work. This fact, which seems to rest upon strictly scientific laws, shows that the men who do brain-work should be careful, first, not to overtask themselves by too continuous exertion, and, secondly, that they should not omit to take physical exercise on a portion of each day, sufficient to restore the equilibrium between the nervous and muscular system.—*Exchange.*

## 7. ROMAN LAWYERS AND THEIR FEES.

The bar with us is one of the great forces of society, and opens a road to affluence and to political success. But the old Roman lawyers seem to have had some advantages over their modern brethren, to judge by an article in the *British Quarterly*.

At first the Roman pleaders received no remuneration beyond the services which every client owed to his patron.—Subsequently, when law had become a difficult science, it became the practice for clients to reward their advocates by making them presents, which (to evade the Cinctan law passed to prevent this) were disguised as secret loans. Before the fall of the republic these fees equalled in magnitude the largest fees known in modern times. Even Cicero, who was regarded as a model of disinterestedness, is said to have received from Publius Sylla about \$40,000 as a fee for his forensic services. In modern times many large fortunes have been made at the bar, but, we imagine, none to be compared with that of M. Lucinius Crassus, whose fortune is said to have exceeded \$15,000,000. One mode of rewarding advocates, by legacies left to them by their clients, appears to have been a source of considerable profit, and was esteemed highly honorable to the legatee. Cicero boasted that in this way he had received twenty millions of sesterces, more than \$800,000. We fancy that clients in our days are not so liberal in their last wills and testaments.

In fact during the last days of Rome, success at the bar was the surest introduction to popularity, distinction, and political power. No wonder, then, that the art of forensic speaking was greatly cultivated, and with so much success. Probably no age has produced a band of more eloquent men than Cicero and his contemporaries of the Roman bar. Nor were the barristers of Rome distinguished only for oratory. Many of them were men of enlarged erudition, of literary taste, and of varied acquirements. Varo, 'the most learned of the Romans,' Quintilian, Suetonius, Pliny, and Tacitus, were all advocates: and the volumes of Cicero still bear testimony to his versatility and power in almost every department of literature. Under the emperors eloquence of the Roman bar had greatly declined, as all that is manly and great must decline and wither with

the loss of freedom. Moreover, the treatment of the bar was not always such as to encourage much mental vigor. Lord Mackenzie relates that one day Gallicus was pleading before the Emperor Claudius, near the banks of the river Tiber, when the advocate, having irritated the Emperor, was by his orders thrown into the river. Some days after a client of Gallicus brought his case to Afer, the most celebrated advocate of the age, and requested him to plead it before the Emperor. 'Who told you,' said Afer, 'that I was a better swimmer than Gallicus?'

## VIII. Educational Intelligence.

### CANADA.

—CANADIAN LITERARY INSTITUTE, WOODSTOCK.—At a recent meeting the Trustees passed the following resolution: Moved by the Rev. T. Baldwin seconded by the Rev. E. Topping, and: "Resolved,—That in the opinion of this Board it will not be possible for us to carry on much farther the educational work which is now forced upon us by increasing numbers, unless the denomination endow the Institute, and furnish additional strength in the staff of teachers, and enlarged accommodations for our pupils." We learn that every room in the building is full, as well as all the additional room which the teachers in charge can make in the west end of the building.—*Canada Baptist.*

—ONTARIO COLLEGE.—We understand that this Institution, the claims and object of which were brought before the Synod by the Bishop of the Diocese, is likely to go into operation in the spring. The following resolution was unanimously adopted by the Synod: That this Synod having heard his Lordship's remarks in his Charge, concerning the Collegiate Institution to be established in Picton, desire to express their wish to see such an Institution established in this Diocese; and they will, in their several stations, render to it such support as they may consistently feel themselves enabled to do. We have since heard that a number of gentlemen have given a guarantee to supply any deficiency, in the sum of £500 per annum for three years, as salary for a Principal, for the purpose of engaging whom, either the Bishop or Archdeacon will immediately proceed to England.—*Canadian Churchman.*

—SCHOOL EXAMINATION IN EKFRID.—On the 19th December, the half-yearly examination of S. Section No. 17, in the Township of Ekfield, taught by Miss M. Campbell, was held, and on the next day December 20th, the examination of S. Section No. 6, taught by Miss McIntyre, was held. These Schools were examined in all the branches generally taught in our Common Schools, in the presence of the Local Superintendent, Trustees, and other parties interested. The results were highly creditable to both teachers and pupils, and all parties present seemed to be greatly delighted with the state of their Schools, and the progress made by the pupils in all the branches taught. Various appropriate addresses were given by the Local Superintendent, Trustees, and others. At the conclusion, the pupils of each School, presented the Local Superintendent, with an address, accompanied with a purse, well filled with Canadian Currency, as a token of their affection, and their appreciation of his services among them, and his interest in their secular and religious training.—*Com.*

—STRATHALLAN SCHOOL.—A grand soiree was lately held at Strathallan, in the school house, by the people of that section, the object of which was simply for a night of amusement and mutual greeting at the close of the present year. There were over two hundred present, all of whom enjoyed themselves in an admirable degree during the evening. The chair was occupied by Wm. Stewart, Esq. Thomas Oliver, Esq., M.P.P. spoke at some length upon the proposed change in our school system. His remarks were listened to with marked attention and seeming interest, and loudly applauded. The chairman then sang a piece, which was rendered very well. Mr. John Stewart then spoke upon the soiree and its beneficial effects, after which Miss Ellen Cook sang a solo, to the delight of every one present. John Craig, Esq., Local Superintendent, followed in a pithy, eloquent and forcible speech 'on the "dignity of labor,"' throughout which he was repeatedly cheered. After the choir singing another piece, prizes were distributed to the pupils of the school, prefaced by a few remarks from Mr. Craig, there having been an examination on that day. The school is under the direction of Mr. Murray, whose efficiency as a teacher, was then publicly acknowledged by a resolution, which was responded to by three hearty cheers from the company. The whole proceedings closed by the choir of the school children—singing the national anthem.—*Woodstock Times.*

—**LAVAL UNIVERSITY.**—It is said that the Rev. Mr. Brunet, of Laval University, will replace the Rev. Mr. Langevin, the newly appointed Bishop of Rimouski, as Principal of Laval Normal School. The University of Laval has founded three medals for competition, which will be annually awarded to the three best scholars in French poetry. They will be embellished with a design representing the arms of the University, and be of gold, silver and bronze respectively. The first subject for competition, next May, will be "the discovery of Canada."

**QUEEN'S UNIVERSITY.**—A meeting was held in the Convocation Hall of the University of Queen's College on Wednesday afternoon the 3rd inst. for the purpose of formally opening the classes for the session in the faculties of Arts and Medicine. Since last year a change of considerable importance has taken place in the organization of the Medical department, it being now specially incorporated under the title of the Royal College of Physicians and Surgeons, Kingston, with special powers conferred upon the corporation for the purpose of granting licenses and fellowships to practitioners in medicine. The Medical department under its new name is affiliated with the University, and is distinct only in having a regulating of its own. It was perhaps the desire felt by the public to learn something of the nature of this change, and also the growing interest which is being taken by the people of Kingston in the affairs and success of the Arts department, that led to a very full and highly respectable audience being present at this meeting. There was a good attendance of students, and the hall was filled with visitors, both ladies and gentlemen. Introductory addresses were delivered by the Principal, the Rev. Professor Mowat and Dr. Dickson. The proceedings were concluded with the benediction.—*Kingston Chronicle and News.*

—**CALENDAR OF THE MCGILL COLLEGE AND UNIVERSITY.**—We have received a copy of this University Calendar, got up with all the preciseness and care one would expect from the learned body which controls its operations, and printed with the greatest neatness and taste by Mr. Becket. It consists of eighty-eight pages, and, as will be seen by the table of contents, affords every possible information relative to the University itself, and the Colleges and Schools affiliated with it. Following the Almanac for the Academical year, which commences in September, we have the names of the Governing Body, General Announcement, Officers of Instruction, Faculty of Arts, List of Donations, Faculty of Medicine, Faculty of Law, Prizes and Honours, List of Students, List of Graduates, High School, Normal School, School Examinations. We find under the heading Scholarships and Bursaries, that sixteen Scholarships have been placed by the Governors at the disposal of His Excellency the Governor General. Application must be addressed to His Excellency, through the Provincial Secretary. Candidates for such Scholarships must pass the usual Matriculation Examination. By command of His Excellency, four of these Scholarships will be offered for competition in the Matriculation Examination of the ensuing session. Eight other Scholarships will be granted by the Governors, from time to time, to the most successful Students who may present themselves as candidates. One of these will be given annually to the *Dux* of the High School.—*Transcript.*

—**LOWER CANADA EDUCATION.**—His Excellency the Governor General was pleased, by an Order in Council of the 15th October, 1866, to approve of the Resolution of the Council of Public Instruction, recommending that in view of perfecting as far as practicable our system of Public Instruction, and giving the best possible direction to Education in the interest of the youth of the country, it is of the utmost importance to compare the system adopted and the results obtained so far in Lower Canada with the systems and methods pursued in other countries, and that in consequence the Superintendent of Education should visit Europe and the United States at an early day, and report to the Government the result of his observations, as well as the suggestions which he may think proper to submit with regard to public instruction in this country. His Excellency was pleased accordingly, by said Order in Council, to grant leave of absence to the Hon. Pierre J. O. Chauveau until the 1st May, 1867, for the purpose of carrying out the instructions contained in the foregoing resolution. An address was presented to Mr. Chauveau by the employees of his department, prior to his departure for Europe. His Excellency the Governor General in Council was pleased, on the 6th November, 1866, to appoint Louis Giard, Esquire, M.D., Deputy Superintendent of Education for Lower Canada, under the powers conferred by the Consolidated Statutes of this section of the Province, Cap. 15.—*Lower Canada Journal of Education.*

## BRITISH AND FOREIGN.

—**WASHINGTON COLLEGE, LEXINGTON, VA.**—A Richmond paper, remarking on the prosperity that has attended this ancient institution since the appointment of Gen. R. E. Lee to the presidency, thus speaks;—"Applications for the admission of students continue to pour in from all the States, but mainly from the South. It is thought, from present indications, that Texas will send the largest number, next to Virginia. Gen. Lee's own estimate for the next year is three hundred students, and we all know that he is never over sanguine. Indeed Washington College is now on a firm basis and destined to become the Cambridge (as the University is at Oxford) of Virginia at no distant day." This, considering the terrible results of the war, is an exceedingly satisfactory state of affairs. In addition to the large endowment of the College, it has recently received a donation amounting in the aggregate to \$70,000 from private resources.

—**UNIVERSITY OF CAMBRIDGE.**—The Vice-Chancellor of the University of Cambridge has fixed the "Atlantic Cable, 1866," as the subject for the Chancellor's English poem medal for next year. The Sir William Browne medal for Greek Lyrics is to be given for the best poem on the Prince of Wales at Petersburg, and the subject for the Latin Ode is, the November Star Shower.

—**DARTMOUTH COLLEGE.**—George H. Bissell, a graduate of Dartmouth College, has given \$24,000 for the erection of a new gymnasium. He is a believer in muscular education.

—**EDUCATION IN NEW ZEALAND.**—In the province of Nelson, New Zealand, every householder, rich or poor, pays a tax of £1 towards the government free schools, and 5s. per head for each child who does not go to some school. An inspector is appointed, who reports periodically to a board of management on the progress and attendance of the pupils; thus, the system is persuasive rather than compulsory, and answers very well. The education is secular, and certain times are set apart for religious instruction, of which the pupils can avail themselves or not, at the discretion of the parents.

## IX. Departmental Notices.

### FREE PUBLIC SCHOOL LIBRARIES IN U. C.

"The Public School Libraries are becoming the crown and glory of the institutions of the Province."—LORD ELGIN at the *Provincial Exhibition, Sept. 1854.*

"Had I the power, I would scatter libraries over the whole land, as the sower sows his seed."—HORACE MANN.

Under the regulations of the Department, each County Council can establish *four classes* of libraries in their Municipality, as follows. City, Town, Village, and Township Councils can establish the first three classes, and school trustees either of the first and third classes.

1. An ordinary *Common School Library* in each school house, for the use of the children and rate payers.

2. A *General Public Lending Library*, available to all the rate payers of the Municipality.

3. A *Professional Library* of books on teaching, school organization, language and kindred subjects, available to teachers alone.

4. A Library in any *Public Institution*, under control of the Municipality, for the use of the inmates, or in the *County Jail* for the use of the prisoners.

We cannot too strongly urge upon School Trustees the importance and even necessity of providing, (especially during the autumn and winter months,) suitable reading books for the pupils in their school, either as prizes or in libraries. Having given the pupils a taste for reading and general knowledge, they should provide some agreeable and practical means of gratifying it.

The Chief Superintendent will add *one hundred per cent.*, to any sum or sums, *not less than five dollars*, transmitted to the Department by Municipal and School Corporations, on behalf of Grammar and Common Schools; and forward Public Library Books, Prize Books, Maps, Apparatus, Charts, and Diagrams, to the value of the amount thus augmented, upon receiving a list of the articles required. In all cases it will be necessary

for any person acting on behalf of the Municipal or Trustee Corporation, to enclose or present a written authority to do so, verified by the corporate seal of the Corporation. A selection of Maps, Apparatus, Library and Prize Books, &c., to be sent, can always be made by the Department, when so desired.

☞ Catalogues and Forms of Application furnished to School authorities on their application.

\* \* \* If Library and Prize Books be ordered, in addition to Maps and Apparatus, it will be NECESSARY FOR THE TRUSTEES TO SEND NOT LESS THAN *five dollars additional* for each class of books, &c., with the proper forms of application for each class.

☞ The *one hundred per cent.* will not be allowed on any sum less than *five dollars.* Text books cannot be furnished on the terms mentioned above: they must be paid for at the net catalogue prices.

### ASSORTED PRIZE BOOKS IN PACKAGES,

*Selected by the Department, for Grammar or Common Schools, from the Catalogue, in assorted packages.*

Package No. 1.	Books and Cards,	5cts. to 70cts. each.....	\$10
" No. 2.	Ditto ditto	5cts. to \$1.00 each.....	\$16
" No. 3.	Ditto ditto	5cts. to \$1.25 each.....	\$20
" No. 4.	Ditto ditto	10cts. to \$1.50 each.....	\$26
" No. 5.	Ditto ditto	10cts. to \$1.75 each.....	\$30
" No. 6.	Ditto ditto	10cts. to \$2.00 each.....	\$36
" No. 7.	Ditto ditto	15cts. to \$2.25 each.....	\$40
" No. 8.	Ditto ditto	15cts. to \$2.50 each.....	\$46
" No. 9.	Ditto ditto	15cts. to \$2.75 each.....	\$50
" No. 10.	Ditto ditto	20cts. to \$3.00 each.....	\$56
" No. 11.	Ditto ditto	20cts. to \$3.25 each.....	\$60
" No. 12.	Ditto ditto	20cts. to \$3.50 each.....	\$66
" No. 13.	Ditto ditto	25cts. to \$3.75 each.....	\$70
" No. 14.	Ditto ditto	25cts. to \$4.00 each.....	\$76
" No. 15.	Ditto ditto	25cts. to \$4.25 each.....	\$80
" No. 16.	Ditto ditto	30cts. to \$4.50 each.....	\$86
" No. 17.	Ditto ditto	30cts. to \$4.75 each.....	\$90
" No. 18.	Ditto ditto	30cts. to \$5.00 each.....	\$96
" No. 19.	Ditto ditto	35cts. to \$5.25 each.....	\$100
" No. 20.	Ditto ditto	35cts. to \$5.50 each.....	\$120

☞ *Special Prizes*, in handsomely bound books, singly at from \$1.05 to \$5.50. In sets of from two to six volumes of Standard Literature, at from \$3.00 to \$10.00 per set. Also Microscopes, Drawing Instruments, Drawing Books, Classical Texts, Atlases, Dictionaries, Small Magic Lanterns, Magnets, Compasses, Cubes, Cones, Blocks, &c. &c.

\* \* \* Trustees are requested to send in their orders for prizes at as early a date as possible, so as to ensure the due despatch of their parcels in time for the examinations, and thus prevent disappointment and delay.

### SUNDAY SCHOOL BOOKS AND REQUISITES.

Application having been frequently made to the Department for the supply from its Depository of Sunday School Library and Prize Books, Maps and other requisites, it is deemed advisable to insert the following information on the subject.

1. The Department has no authority to grant the one hundred per cent. upon any remittance for Library or Prize Books, Maps or Requisites, except on such as are received from Municipal or Public School Corporations in Upper Canada. Books, Maps and other Requisites suitable for Sunday Schools, or for Library or other similar Associations, can however, on receipt of the necessary amount, be supplied from the Depository at the net prices, that is about twenty-five or thirty per cent. less than the usual current retail prices.

2. The admirable books published in England by the Society for Promoting Christian Knowledge, and by the London Religious Tract Society, are furnished from the Societies' catalogues at currency for sterling prices (i. e. a shilling sterling book is furnished for twenty cents Canadian currency, and so on in proportion.) These two catalogues will, as far as possible, be furnished to parties applying for them. Books suitable for

sunday schools are received from the other large religious societies, Presbyterian and Methodist, and from the various extensive publishers in Britain and the United States, but the list would be two extensive to publish separately.

3. On receiving the necessary instructions, a suitable selection can be made at the Department, subject to the approval of the parties sending the order. Any books, maps, &c, not desired, which may be sent from the Depository, will be exchanged for others, if returned promptly and in good order.

### COMMON SCHOOL MANUAL FOR UPPER CANADA.

A copy of the last edition of the Common School Manual for Upper Canada, is supplied gratuitously to all new School Sections in Upper Canada. To other Sections the price is thirty-five (35) cents, inclusive of postage, which is now payable in advance.

All Local Superintendents retiring from office, are required by law to hand over to their successors the copies of the School Manual furnished to them by the Department, and all other official school documents in their possession. Extra copies of the Local Superintendent's Manual can be furnished for fifty (50) cents, including postage.

### SCHOOL REGISTERS SUPPLIED THROUGH LOCAL SUPERINTENDENTS.

School Registers are supplied gratuitously, from the Department, to Common and Separate School Trustees in Cities, Towns, Villages and Townships by the County Clerk—through the local Superintendents. Application should therefore be made direct to the local Superintendents for them, and not to the Department.

### PRINCIPAL ARTICLES OF CANADIAN MANUFACTURE.

General School Room Maps, Raised Maps, Map Cases, Rotary Map Stands, Globes, and Elementary School Apparatus relating to Astronomy, Natural Philosophy, Pneumatics, Electricity, Electro-Magnetism, Optics, Chemistry, &c. &c., may be obtained by Schools at the Educational Department, Toronto.

### POSTAGE REGULATION IN REGARD TO GRAMMAR AND COMMON SCHOOL RETURNS.

All official returns which are required by law to be forwarded to the Chief Superintendent, or a Local Superintendent, and which are made upon the printed blank forms furnished by the Educational Department, *must be pre-paid*, at the rate of one cent, *and be open to inspection*, so as to entitle them to pass through the post as printed papers. No letters should be enclosed with such returns. A neglect to observe this regulation has repeatedly subjected this Department to an unnecessary charge of 14 cts. and 21 cts. on each package, including the Post-office fine of nearly *fifty per cent.* for non-payment.

### INDISTINCT POST MARKS.

In the course of the year, a number of letters are received, on which the post marks are very indistinct, or altogether omitted. These marks are often so important, that Postmasters would do well to see that the requirements of the Post-office Department, in relation to stamping the post-mark on letters is carefully attended to.

### PRE-PAYMENT OF POSTAGE ON BOOKS.

According to the Postage Law, the postage on all books, printed circulars, &c., sent through the post, *must be pre-paid by the sender*, at the rate of one cent per ounce. Local Superintendents and teachers ordering books from the Educational Depository, will therefore please send such an additional sum for the payment of this postage, at the rate specified, and the Customs duty on copyright books, as may be necessary.

**DISTRIBUTION OF JOURNAL OF EDUCATION.**

In consequence of the number of Local Superintendents who, for various reasons, have declined personally to superintend the distribution of the *Journal of Education* in their respective townships, it is suggested that each Local Superintendent should make arrangements at the post offices within the bounds of their respective fields of labour, for the prompt and regular delivery of the *Journal*. All copies not called for within a reasonable time, should be returned to the Educational Department.

**CANADIAN SCHOOL MAPS AND APPARATUS.**

Sets of the two new series of maps of Canadian manufacture are now ready, and can be had, by school authorities, at the Educational Depository, Toronto, either singly, in wall cases, or on rotary stands, embracing Maps of the World; Europe, Asia, Africa, and America, of two sizes; the British Isles, Canaan and Palestine, and British North America.

Terrestrial and Celestial Globes, of Canadian manufacture, of the following sizes: *three* (hemisphere), *six*, *twelve*, and *eighteen* inches in diameter, and on various kinds of frames.

The Canadian School Apparatus embrace, among other things, Planetariums, Tellurians, Lunarians, Celestial Spheres, Numeral Frames, Geometrical Forms and Solids, &c. Also, a great variety of Object Lessons, Diagrams, Charts, and Sheets. Magic Lanterns, with suitable slides, from \$2.40 to \$1.20 with objects, Telescopes, Barometers, Chemical Laboratories, beautiful Geological Cabinets, and various other Philosophical Apparatus in great variety. Catalogues, and printed Forms of Application, may be had at the Depository.

**CONFEDERATION MAP OF BRITISH NORTH AMERICA.**

New Map of British North America, including Nova Scotia, New Brunswick, Prince Edward Island, Newfoundland, Vancouver Island, British Columbia, Red River, Swan River, Saskatchewan; showing at one view (without any dividing boundaries,) the Provinces embraced in the proposed new Dominion of Canada, &c., with a Map of Steamship Routes between Europe and America, &c. &c. 7ft. 9in. by 3ft. 9in. Constructed and lately published under the supervision of the Educational Department for Upper Canada. Price \$6.

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