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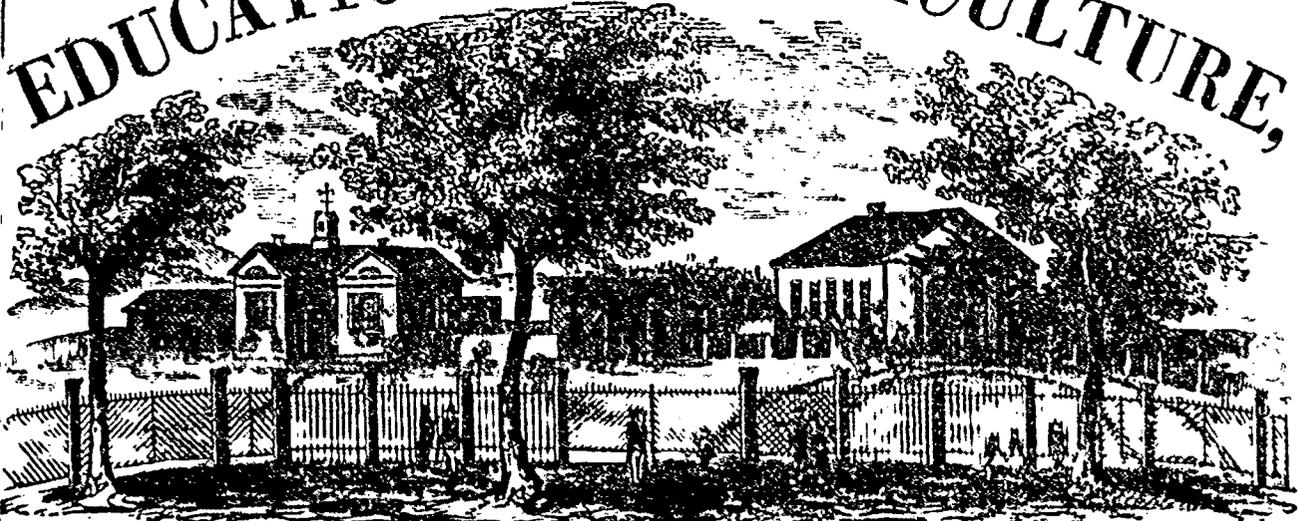
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THE JOURNAL OF EDUCATION AND AGRICULTURE,



PROVINCIAL NORMAL, AND MODEL SCHOOLS, TRURO, N. S.

FOR THE PROVINCE OF NOVA SCOTIA.

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Vol. I.

Halifax, Nova Scotia, August, 1858.

No. 2.

EDUCATIONAL.

I.—THEORY OF EDUCATION. PHYSICAL EDUCATION.

In our last we presented an outline of the subject-matter of education. We showed that, in accordance with the primary signification of the term, the education of the young consists in the developing and strengthening of all their energies and powers, and that the grand and only specific for effecting this object is exercise or the practical use of all the organs of the body, of all the faculties of the intellect, and of all the properties of the conscience. We specially insisted on the necessity of exercising all these powers simultaneously, and that mainly on the ground that it is impossible to do anything like justice to one and all of these component parts of our being, unless they are, in their use, all blended together in one harmonious whole, unless, in fact, the young are treated just as they are, with body, intellect and conscience in inseparable union.

We proceed now to view these great branches of the theory of education, separately, taking up, first of all, the subject *physical education*.

The body, as is well known, is possessed of various parts, which are called organs or instruments, because they perform

certain functions or offices. These organs, in so far as the educator is concerned, may be regarded under so many classes or systems;—the nutritive, the supporting, the cutaneous, the locomotive or muscular, and the nervous; and by physical education, we are plainly to understand the enlarging and consolidating of all these organs, by the use of legitimate and appropriate means.

This is a branch of education just beginning to receive the attention and to assume the position to which it is entitled.—The ancients, and particularly the Greeks and Romans, cultivated it very extensively; indeed, this constituted the chief burden of all their educational work,—their object being more to qualify their youth for athletic feats in the Olympic and other games, for valorous exploits in the field of combat, and for patient endurance of hardship and privation in the prosecution of their military pursuits, than to impart knowledge or to cultivate their intellectual and moral powers. Now, whilst there cannot be a doubt that this education is well fitted to give vigour and strength, as well as gracefulness of attitude, to our physical frame, and thereby to act as a powerful preservative and promoter of its health, it were to take a very limited and circumscribed view of the whole subject to make this its grand aim or its sole object. Physical education is of immense consequence in the training of the young, but it is so mainly as a means leading to great and important ends. And the principal of these are the arresting and keeping up of the

attention of the young during their varied exercises, whether secular or religious, and thereby securing a far larger amount of intellectual labour; and, still more, the strengthening and assisting of moral training through the cultivation of habits of order and physical obedience. And whence these results?—Mainly from the union subsisting between the body and the mind, the sympathy they have for one another, the way in which the body operates on the mind. We are utterly ignorant, it is true, as to the mode in which matter affects mind or mind matter, but that they do act and re-act the one upon the other, and that in the most extensive and powerful manner, is a truth which no one, we believe, will venture to dispute. If, then, the body exert such a powerful influence over the mind, if the health and activity of the body tend so extensively to the health and activity and power of the mind,—a truth which will be increasingly unfolded as we proceed with our subject,—it becomes a vastly important question as to what is to be done, so as to secure and preserve and extend the former, that full scope may be given to the latter. Before we are in a position to answer this question satisfactorily, we must be well acquainted with the nature of the bodily organs themselves; we must possess some knowledge of their anatomy, their external configuration, the laws that govern them and the functions they perform, both individually and collectively. It is on this account we insist on these branches of knowledge as indispensably necessary in the professional training of the schoolmaster. If the tradesman, however dexterous and skilful he may be in the use of his tools, occupies a commanding vantage ground, when he knows thoroughly the nature of the material on which he is operating, so is it with the educator. His great business is to operate upon the intellect and conscience of his pupils, and as one way of doing this is through the medium of the body, it is perfectly clear that, if he would use this way effectually, he must be well acquainted with its organs in all their bearings, and relationships and dependencies; in other words, he must be conversant with animal physiology.

Now it is in this very relationship that we propose to discuss the whole subject of physical education. We shall lay down certain propositions plainly deducible from the classes or systems of organs adverted to, and in the order in which they are mentioned, and evolving great and important points on the branch of our subject now under consideration. In the remaining part of this article we shall merely sketch these propositions, and in future numbers discuss them *seriatim*.

Proposition 1st. That it is the bounden duty of all interested in the rising generation, and specially of parents and teachers, to use every means for the growth and development of the various parts of their bodily frame.

This proposition is founded on the nutritive system of organs, or that system on which the whole process of assimilation depends, comprehending digestion, circulation, and respiration. Wonderful indeed are the changes through which the food that we take passes, before it becomes part and parcel of ourselves, and diffused through the body in a vitalized condition! But wonderful though they be, they are indispensably necessary for the nutrition and growth of every part of our physical nature. The great practical points involved in this proposition, in so far as physical education is concerned, are the ventilation and temperature of school houses, the provision requisite for securing these essential elements, essential alike to the Master and the scholar, and which, if un-

attended to, sets at defiance all the efficiency and experience of the former, and all the diligence and perseverance of the latter.

Proposition II. That every means should be employed for the purpose of imparting size, solidity and strength to the supporting system of organs, in the young.

Here we shall have occasion to consider the nature, the composition and the uses of the bones of the human species; and this, again, will bring under our notice the whole subject of the construction of seats and benches in schools, their being graded according to the size and age of the scholars, &c., &c.

Proposition III. That children ought to be trained to habits of cleanliness, neatness and order, not merely for the sake of decency and propriety, but for the preservation of the health and the invigoration of the physical frame.

This proposition is founded upon the cutaneous system of organs, and will naturally lead to the consideration of its functions as the most powerful absorbent and exhalant, and the consequent necessity of preserving the skin in a state of healthful circulation.

Proposition IV. That every schoolmaster ought to provide a due supply of out-door and in-door physical exercises for his scholars, and that the latter be intermingled with their intellectual and moral education according to circumstances.

This is the most important of all the propositions we have stated, and that because of its direct and immediate bearing on intellectual and moral education. It will demand a thorough analysis of the locomotive or muscular system of organs, more especially the great law of the muscles;—namely, relaxation and contraction, or repose and activity;—and the operation of this law upon the brain, the seat of thought. The in-door exercises are such as reading all together, singing, marching, simultaneous rising up and sitting down, the four motions, &c. These exercises must be varied to a certain extent every day; and are as necessary for the juvenile and more advanced sections as they are for the initiatory, only, in the latter case, they require to be more frequently repeated. The out-door exercises are principally the circular swings and gymnastic posts, though often games may be added, such as hand-ball, battledore, la grace, skipping ropes, marbles, large china bowls, &c., &c. In all these exercises, the trainer himself must show the example;—indeed, without this, one of the main benefits of the in-door exercises would not be served.

Proposition V. That every means should be used for securing the healthful and vigorous development of the nervous system of organs, not merely because it is the highest and most refined part of our physical constitution, but because it is the seat of the mind, that substance which feels and perceives and thinks and directs, and, in subserviency to the accomplishment of whose purposes, the whole bodily organization has been fashioned.

This will involve the consideration of the anatomy of the whole nervous system, the uses or functions of its various parts, and still more, the conditions on which the health of the brain principally depends, viz., a sound hereditary constitution, a due supply of well oxygenated blood, and regular systematic exercise. And all this will be followed by the laying down and expounding of certain rules to guide and direct in this exercise, so essential alike for the health of the body and the expansion of the mind, both intellectually and morally.

Such is a brief outline of the course we intend to pursue in the discussion of physical education. Much has been written

of late both on this and the other side of the Atlantic on the subject of Animal Physiology, and there are few subjects more important, more interesting and more useful. It has been said, and we believe with truth, that one half of the diseases under which the human family are labouring arises from the palpable violation of the laws of our physical nature, and that by reason of the utter ignorance that prevails in reference to these laws; and could there then be a finer field of philanthropy than is furnished to the physician and others in imparting to their fellow-creatures a knowledge of the laws of health, and of the means of avoiding those diseases to which they are more particularly exposed; and in laying before them such information as shall be needful, in order to the highest improvement of their physical organization, and the transmission to posterity of unimpaired constitutions. Would not this be acting out the principle in our physical nature so universally admitted in reference to our moral, "Prevention is better than cure!" But be this as it may, it is our decided conviction that an immense amount of misapprehension, ignorance and scepticism prevails on the subject of physical education, and particularly in its relation to intellectual and moral education; and as this, in our opinion, can alone be dissipated by the dissemination of sound views on the organs, the functions and the laws of our corporeal system, so is it our intention in a series of articles to bring before our readers those features in animal physiology that bear more directly and immediately on the elucidation and importance of our theme.

II.—PRACTICE OF EDUCATION. SCHOOL ORGANIZATION.

By School Organization is meant the systematizing or arranging of all external matters connected with a school establishment. This supposes the pre-existence of a plan or scheme in the mind. In every enterprize there is great advantage to be derived from forethought, but perhaps nowhere is the advantage greater than in the business of teaching. Now though it may not be in the power of the Teacher to have a plan in his mind, applicable at all times and in all cases, yet there may and there ought to be a plan, in its great leading lineaments, capable of being modified or altered according to circumstances. One of the more prominent of these lineaments or features is the appropriation of every minute of time in which he is to be engaged in school. In such an appropriation respect must be had to three things, namely: the time for recitations, the time for recesses, and the time for resting or whispering. In reference to the first of these points, it is our decided conviction that these recitations should not last longer with very young children than fifteen minutes, and with more advanced than twenty or twenty-five minutes, and that two subjects or branches of learning are sufficient for the hour. This will occupy forty minutes, leaving of the hour twenty minutes. The first ten minutes of this time may be given to music or marching, or both, or, if by any protraction in the lesson the time is much reduced, to whispering; the other ten minutes at the end of the hour should be spent in the play-ground. Twenty minutes of every hour devoted to such purposes may appear to not a few altogether unreasonable, or, to say the least, a great waste of time. So far from this being the case, we believe it is attended with many advantages. By this arrangement, all interruptions during the

recitations will be avoided, and this is of immense consequence both to Teacher and taught, as it will enable them to give their undivided attention to the subject in hand, and thereby to do ample justice to it in all its bearings and aspects. Besides, we believe that twenty or twenty-five minutes of severe application to any one subject, and particularly when that subject is in any way complicated or hard to be understood, is as much as any class of children can safely stand.

The next point in the plan should be the allocation of the different studies for each recitative period. And here it may be observed, that every effort should first be made to reduce the classes in any one branch of learning to the smallest possible number. The teacher may not have it in his power to diminish the number of the branches taught, but the classes, or the different stages of the same branch of study, he can arrange in the way that best suits his own convenience, and the accomplishment of the object contemplated. And these classes, I again repeat, the teacher should endeavor to reduce as much as possible. In some branches, such as writing, drawing, mental arithmetic, and the like, if the school is of a miscellaneous character, he can have all the scholars in one class;—and it were well for all parties concerned, did he occasionally do this with English Grammar, Geography, &c. At all events, he should strive not to have more than two sections in the same branch. This will give him so much more time to handle the subject thoroughly, to bring it before his pupils, in all its diversified aspects and in all its figurative illustrations, and thereby fix it in the understanding, even of the most stupid and obtuse. By this means, too, the sympathy of numbers would be more extensively felt. In proportion to the number of scholars will be the diversity of endowment and attainment; and whilst this will furnish a more powerful stimulus to all, it will, at the same time, elicit the peculiar gifts of each. It were well, also, that the Teacher in this plan of arrangement has respect, in the succession of study to which the attention of his scholars may be called, to the nature of the subject in its effect upon their mental powers. If, for example, the first twenty minutes of the hour are occupied with a branch of study that calls forth an unusual amount of mental energy, such as that of the higher departments of mental arithmetic, the second twenty minutes should be directed to a branch not only widely different, but to one which will not impose such a tax on the energies of the mind. It is with an eye to this that the afternoon diet is generally devoted to those subjects that are more mechanical in their nature. The number of branches and classes may be so great, that it is found impossible to overtake them all in one day, so as to do justice to each and all. In such a case the principle of alternation may be introduced; that is, some studies may be recited Mondays, Wednesdays, and Fridays,—and some other studies with other classes take their places on the alternate days. It is decidedly better for the teacher to meet a class, especially of older pupils, but twice or three times a-week, having time enough at each meeting to make thorough work, than to meet them daily, but for a time so short as to accomplish but little. The idea is a mischievous one, that every class must be called out four times a-day, or even twice a-day—except in the case of very young children. It may be compared to nibbling at a cracker as many times in a day, without taking a hearty meal,—a process which would emaciate any child in the course of three months. These scanty nibblings at the table of knowledge, so often and so tenaciously practised, may per-

haps account for the mental enervation so often discoverable in many of our schools.

The next matter in this programme of the plan of arrangement of the affairs of a school, is the occupation of those classes which are not engaged in recitation. This is one of the greatest difficulties connected with school operations, especially when that school is miscellaneous in its character, that is, made up of scholars of all ages and sizes. It is comparatively easy for the teacher to secure the attention of the scholars engaged in recitation exercises, but so to enlist the interest of those who are not thus engaged as that they shall apply themselves with diligence and perseverance to their studies, is a task with which none but the most skillful and experienced teacher can successfully cope. Here, too, regular studies for each section must be prescribed, care being of course taken to exclude those branches of study which were required to be learned out of school. It were well, too, that those studies were required to be learned that are next to be recited, and that they be of such a nature as that it is necessary to commit them to writing or to the slate. These private studies ought to be as distinctly known, and occupy as prominent a place in the programme, as the recitation lessons. But, after all, much of the success of these private studies will depend on the general character or style of the teaching: indeed there is not, perhaps, a finer test of the whole character of the teaching than is furnished by the conduct of the scholars in the prosecution of these private studies. If their minds have been truly awakened,—and this can only be done when that mode of teaching is pursued which treats them as rational, thinking beings, which aims at the development of their mental powers in the communication of the most valuable knowledge, and this can only be done when a clear and vivid idea of the subject is impressed on the mind through the aid of the perceptive faculties, or the knowledge they have already obtained;—then little difficulty will be experienced in securing the diligent application of the scholars to the lessons prescribed. If, on the contrary, the whole style or character of the school is mechanical, or consisting of mere rote exercises,—if comparatively little is done on the part of the teacher to accommodate his instruction to the nature and understanding of his pupils, all regulations and arrangements and prescriptions of study will prove of but little avail. The whole of the lessons will be a drudgery, and the pupils, instead of being interested in their studies, will evince every desire to get their neck from under the yoke.

Such are a few of the leading lineaments of the plan which every teacher ought to have in his mind's eye before he puts his hand to the plough. There may be great diversity in the plan, and the best plan may, within certain limits, be modified by external circumstances, but that there ought to be some plan must be apparent to all,—if any systematic and substantial work is to be performed;—and any plan, even the most imperfect, is infinitely better than none. And now we shall suppose that the teacher, having entered into an engagement with the Trustees, is ready to commence operations, and to give embodiment and life to his plan, whatever it be. What a critical and eventful step is this, and all the more if it is the beginning of the teacher's career as such! What momentous consequences involved both to the teacher and the scholars! How beautifully does Page, in his own gentle and impressive manner, describe the scene:—"If angels were to visit our earth and hover unseen around the gatherings of mortals, to

survey their actions and contemplate their destiny, as effected by human instrumentality, it seems to me there can be no spectacle so calculated to awaken their interest and enkindle their sympathy as when they see the young gathering together from their scattered homes in some rural district, to receive an impress, for weal or woe, from the hand of him who has undertaken to guide them." Much here, as in every other undertaking, depends on a fair starting. And in order to secure this, as far as human instrumentality is concerned, we would strongly recommend the propriety of the teacher's visiting the settlement or district a few days before he commences operations. He should, if possible, make a thorough visitation of all the families of the district, high and low, rich and poor, and converse freely both with parents and children, so as to gather up as much information as possible respecting the educational condition of the locality. By this means he will become acquainted with the views of different parties on the great subject, for the promotion of which he has come amongst them, as well as with the state of progress of the young on the matter of education. By this means, too, he will enjoy the opportunity of pointing out to parents and other influential individuals the nature of his position, the responsibilities of the office he has assumed, his views on education, both theoretical and practical, and of pressing on them the indispensable necessity of their co-operation for the furtherance of all his plans and projects. And whilst this course will furnish him with much valuable information, it will at the same time spread a strong prepossession in his favour; at all events, it will convey to those amongst whom he is going to labour the impression that he is deeply interested in the work in which he is about to engage.

The day appointed for the opening of the school has arrived; and what has first to be done by the young teacher?—He ought to be at the school at least an hour before the time fixed, that he may have all in readiness for the enrolment of the scholars, and for the reception of any statements that parents or others may have to offer on the occasion. And it were well ever after, that the teacher be in attendance at least one half-hour before the time appointed for commencing work. This will establish punctuality on the part of the scholars, and effectually prevent any concerted action among them at that hour to embarrass his government. After the devotional services are over the teacher should proceed, at once, with calmness, and gentleness, and decision, to the work of classification. This can only be done by a thorough testing of the qualifications of the pupils, and for this, a general examination is necessary. This is perhaps, on the whole, a better course than allowing them to take the position and class they previously held. Having ascertained generally their attainments, so as to be quite able to divide them into two sections, he now endeavours to get a more precise knowledge thereof, by giving out to each of these sections some exercises more and less advanced. After due time for preparation, he hears the recitation of these exercises, and is now in a position to divide the whole thirty or forty scholars, of all ages, into three, or, at most, into four classes, though he still occasionally exercises them in two sections, and these, on the same branch of knowledge, at one and the same time. He now draws out a programme of time, recitations, studies, recesses, rests or whispirings; suspends the same behind his own platform and as near the time-piece as possible, that he may be reminded of the importance of punctuality; announces to his scholars that

this programme, in its leading features, is to guide both him and them, so long as their present relation subsists; and then commences operations. The school may now be said to be organized. There are, however, points connected with the management, or the full carrying out of this arrangement:—such as reviews, giving out lessons, hearing recitations, &c., still demanding our attention, and to which we shall recur in subsequent numbers.

III.—OFFICIAL NOTICES.

Though the Normal School Bill has been in operation for upwards of four years, it is much to be feared that no small amount of ignorance still prevails in reference to some of its provisions. On this account we have resolved to insert it in our *Journal*, that all, and especially School Commissioners and Normal School students, may have an opportunity of consulting it when necessary:—

AN ACT TO ESTABLISH A NORMAL SCHOOL.

(Passed the 31st day of March, 1854.)

Be it enacted by the governor, council, and assembly as follows:

1. A Normal school for the training of teachers, shall be founded in a central and convenient locality.

2. A Building for such purpose, provided with all necessary furniture and apparatus, shall be erected under the direction of commissioners appointed by the governor in council, upon a site, and according to plans approved of by the governor and council, and such commissioners may draw from the treasury, for the cost of the building, with its furniture and site, a sum not exceeding one thousand pounds.

3. The teachers of the Normal school shall be a principal appointed by the governor in council, who shall superintend the Normal and model schools, and teach such classes as he may deem necessary, and shall also be superintendent of education, and shall receive a salary of three hundred pounds per annum, and two assistants, chosen by the principal, with the approval of the governor in council, and who shall respectively receive salaries of one hundred and fifty pounds per annum.

4. The superintendent may draw annually from the treasury a sum not exceeding one hundred pounds, for expenses of fuel; repairs, and books for the Normal school, and the expense of teachers' institutes, the expenditure of which he shall annually make return of to government.

5. The school shall be under the management of a board of five directors, appointed by the governor in council, who shall frame the bye-laws, and regulations of the institution, and arrange the length of its terms of instruction.

6. The principal may enter into arrangements with the trustees of schools in the place in which the Normal school shall be situated, for the purpose of having such schools used as model schools, in which pupil teachers from the Normal school may practise the art of teaching; provided such model schools shall be maintained in the same manner as if they were ordinary schools.

7. The course of instruction in the Normal school shall be similar to that in the Normal schools of Upper Canada, New York and Massachusetts, or as nearly approaching thereto as circumstances will permit.

8. Each board of commissioners shall have the right of sending to the Normal school, at the commencement of any of its terms, one pupil, either male or female, for every one hundred pounds received by the board from the provincial treasury, and if necessary, they shall aid such pupils from the provincial grant at their disposal, in paying their travelling expenses to and from the Normal school, at the rate of three pence per mile: provided that such pupils, shall not be less than sixteen years of age, and of good moral character, and shall have received an ordinary common school education before the commissioners shall give any order or orders for their admission to the school—such pupils shall give to the principal a written pledge that they will teach for at least three years within this province.

9. The principal of the school may receive an additional number of pupils not exceeding twenty in any one year, on their being examined by him and giving the necessary pledge; and all licensed teachers shall have access to the school, either as spectators or regular pupils. Instruction and the use of text books shall be free to all pupils.

10. The principal may admit pupils not intending to teach in

this province, at such rates of fees as he may think proper, such fees to be applied in improving the apparatus of the school: provided no greater number of such pupils than ten to be in attendance on the school at any one time.

11. All pupils shall be examined by the principal after having attended the school for a term not less than five months, and if competent, shall receive certificates as graduates of the school,—such certificates shall be of three classes, denominated, A, B, and C, according to the capacity of the graduate; and pupils, who, after having studied one year, shall be found incompetent to act as teachers, may be dismissed or receive instructions for a second term at discretion of the principal; and such graduates as may have received certificates of the class A or B, may be admitted anew, and after attending for one or more terms shall receive a certificate of such class as upon examination they shall be found entitled to.

12. Any person holding a certificate from the principal of the normal school shall be entitled to a license from any board of commissioners unless the holder of such certificate be of bad moral character, in which case, so soon as the fact of any graduate having contracted immoral habits is made known to the principal, he shall erase the name of such person from his list of graduates.

13. The principal shall have the power of sending, as free students, to any college or academy receiving provincial aid, graduates of the normal school, who may desire instruction in mathematics and classics, with the view of becoming teachers of high schools; provided that no such institution be required to give instruction to more than three such pupils at one time.

14. There shall be an annual public examination of such school.

15. The principal of the Normal school and his assistants shall be exempted from the performance of statute labor on the highways, from militia duty, and from serving in any town office, or on juries.

AN ACT TO AMEND THE ACT TO ESTABLISH A NORMAL SCHOOL.

(Passed the 1st day of May, A. D. 1857.)

Be it enacted by the Governor, Council, and Assembly, as follows:

1. The model schools now in course of erection at Truro in connection with the normal school, shall be considered as an integral part of such normal school, and shall be under the control of the commissioners of that institution.

2. Such model schools shall be recognized by the board of school commissioners of the county of Colchester proper, as the schools of the district, and shall be entitled to all the rights and immunities appertaining thereto, and the bounds of the district shall be fixed by such school commissioners.

3. The teachers of the model school shall be chosen in the same manner as the teachers of the normal school, and shall be under the same management and control.

4. The teachers of the primary, juvenile, and high schools shall receive respectively fifty pounds, seventy-five pounds, and one hundred pounds per annum; and the sum now payable to the academy at Truro, together with a grant of twenty five pounds to be made by the school commissioners of the district, and a further sum of one hundred pounds to be drawn annually from the treasury, shall be the source from which this endowment is derivable; and when the fees to be received from scholars shall yield a sufficient fund the salaries above mentioned shall be increased to one hundred pounds, one hundred and fifty pounds, and two hundred pounds respectively; and the surplus of such fees shall be appropriated towards the general improvement of the model schools, and an account of the expenditure of such surplus shall be rendered annually to the legislature.

5. The superintendent of education is authorized to draw up a code of rules for the regulation of the model schools, such code of rules to be submitted to the commissioners of the normal school and receive their sanction before going into operation.

6. The principal of the normal school shall be empowered henceforth to grant diplomas as well for grammar schools as for common schools, and the time of attendance and amount of qualification of every one intending to graduate for a grammar school diploma shall be fixed by the commissioners of the normal school.

7. The sixth and seventh clauses of chapter five of the acts of 1854 entitled "An act to establish a normal school," are repealed.

BYE-LAWS OF PROVINCIAL NORMAL SEMINARY,

1. As the main object of this Institution is to prepare and qualify Teachers of common Schools, as well as to improve those who have been already engaged in teaching, that the course of study, the conditions of admission, the qualifications of graduates, &c., shall accord with that object.

2. That the first Autumn term shall commence on the first Wednesday of November next, and terminate on the last Wednesday of March; that the Spring term shall commence on the second

Wednesday of April, and that the duration of this and subsequent terms be afterwards arranged.

3. That the Superintendent at the close of every term, shall appraise each Board of School Commissioners of the number of vacancies to be supplied by it, and shall specially instruct the Commissioners to use all diligence in enquiring after talented and promising young men and women residing within their respective bounds, and in encouraging them to prosecute their studies, with a view to their attending the Normal School:—that the Commissioners shall require from each applicant a certificate of moral character from the clergyman or minister of the religious denomination to which he belongs, and that they furnish each pupil with a certificate of his appointment, to be presented to the Principal on the day fixed for the examination.

4. That all applying under section 9th of the Act, if found qualified, as well as all licensed Teachers, shall be admitted in the order of their application.

5. That all applying under section 10th shall be received in the order of their application, on standing such an examination as the Principal shall deem satisfactory.

6. That none shall be admitted unless they present themselves within one week of the time of the opening of the School.

7. That all candidates for admission sustain a satisfactory examination in reading, spelling, the simple rules of arithmetic, the elements of Geography, and of English Grammar.

8. That all pupils on admission shall be required to subscribe the following declaration:—“We, the subscribers, hereby declare that it is our intention to devote ourselves to the profession of Teaching within this Province, for three years at least, and that our sole object in attending this Normal Seminary is to qualify ourselves the better for discharging the important duties appertaining to said profession.”

9. That certificates, under section 11th of the Act, shall in the mean time be confined to classes A & B, and that such certificates, subscribed by the Principal and Board of Directors, shall be granted to all pupils found qualified on the various subjects prescribed by the Principal, and that all holding the certificate B shall be entitled to the privileges of a First Class Common School Teacher.

10. That each Pupil entitled at the close of the first term to the certificate of Class B, shall receive, out of the funds granted by the Legislature to aid pupils for the first year, a scholarship of £5, and that each pupil entitled to a certificate of class A, shall receive a similar scholarship, on condition of attending the following term, payable at the commencement of that term,—and that such scholarships shall be granted only to those pupils who have been recommended by the Boards of School Commissioners, under section 8th.

11. That all Teachers-in-training shall board and lodge in such houses, and under such regulations as are approved by the Principal.

12. That all pupils attending the institution shall be required when practicable, to attend their respective places of worship on the Lord's day, and wait on such means of religious instruction as the Clergymen or Ministers thereof shall see fit to appoint, and that a certificate to this effect be produced at the close of every term, before any Diploma is granted.

13. That the regulations for the internal management of the Institution be prepared by the Principal, and submitted to the Board of Directors at its first meeting.

14. That the Board shall meet regularly, on the day appointed for each semi-annual examination, and that special meetings may be called by the Secretary, on the application of the superintendent.

POSITION OF TEACHERS HOLDING DIPLOMAS FROM THE NORMAL SCHOOL.

Considerable diversity of opinion seems to exist amongst the Boards of School Commissioners on this point. The majority of Boards, we believe, do not examine the Normal School Graduates who come amongst them for the purpose of engaging in teaching, but record them a place in their list, corresponding with the rank they hold as Graduates of the Normal School. Other Boards, however, examine them and give them a position according to their view of their qualifications. And others, again, seem in great dubiety as to how they should act in the matter: whether they should examine at all, and if they do, through what ordeal they should make them pass. A few days ago, I received, from the father of one of the Graduates of the Normal School, a letter of enquiry on

the subject, and perhaps the shortest and simplest way of bringing the whole matter before the public, is to publish that letter with my reply:—

“REV. AND DEAR SIR,—

I have just received the first No. of the *Journal of Education*. I think it is calculated to do much good in the Province.

I have much pleasure in informing you that ——— is much improved in health since she came home. . . .

I should feel obliged if you would inform me whether or not it is necessary that she should submit to an examination before the Board of School Commissioners (having a first class Diploma from the Provincial Normal Seminary) to entitle her to Provincial aid. I have been informed that the Board in ——— examine candidates having a first class Diploma, and that, in some instances, they are allowed second class schools. I cannot vouch for the truth of the report. One who had applied for a school in that district told me that such was the case, and alleged it as a reason for not attending the Normal Seminary.

If Boards of School Commissioners have power to ignore or condemn the Diploma of the Normal Seminary, it appears to me that the Normal School is treated with contempt. I may be in error, but I think that your Diploma should be a sufficient title to any one holding it from you for a school in the class to which it belongs. I would say further, if the students of the Normal School are obliged to compete with parties who engage to teach only to suit some emergency, I fear very much that its usefulness will not be appreciated.

Your opinion on this subject will be most acceptable.

I have the honor to be, Sir,

Your obedient servant,

REPLY.

“TRURO, 2nd August, 1858.

“MY DEAR SIR,—

I beg to acknowledge the receipt of your communication of the 22nd ult.

In reply, I have to state that the law on the point to which you refer is perfectly explicit. The twelfth clause of the Normal School Bill runs in these terms: “Any person holding a certificate from the Principal of the Normal School shall be entitled to a license from any Board of Commissioners, unless the holder of such certificate be of bad moral character, in which case, as soon as the fact of any Graduate having contracted immoral habits is made known to the Principal, he shall erase the name of such person from the list of Graduates.” Surely, if language has any meaning, the above clause plainly intimates that the power of sitting in judgment on the professional capabilities of teachers who hold a Diploma from the Normal School, by Boards of School Commissioners, has been superseded, and that their power extends only to the moral character of the applicants for a school within their bounds. Every one who understands any thing of the nature and design of Normal Schools, in any national system of education, cannot fail to perceive the propriety of this arrangement.

Again, in the 9th clause of the Bye-Laws of the Commissioners of the Normal School we read, “And that any holding the certificate of Class B. (that is, first class) shall be entitled to the privileges of a first class Common School Teacher.” This clause ought, I think, to set the matter at rest, in so far as the legitimate interpretation of the Normal School Bill on the point, is concerned;—and to show, that every teacher possessing a Diploma from the Normal School, be it of first or second class, is entitled to a corresponding license from any Board within whose bounds he happens to be labouring, provided there is no moral delinquency in the case.

Furthermore, I am decidedly of opinion—an opinion to which I have more than once given expression in my Educational Reports—that if the Normal School really serves the end for which it was intended, every one of its graduates is entitled

to a higher position and to a larger remuneration from the Province, than those who betake themselves to teaching merely, as you well style it, "to suit some emergency." As yet, however, there is no legal provision for such purposes, and perhaps it is just as well and as satisfactory that the Normal School graduates be allowed to work out for themselves such a claim;—and this I have little doubt they will do, if the Province give the Institution anything like ordinary justice.

I am, my dear sir,
Faithfully yours,
ALEXANDER FORRESTER."

TRAVELLING EXPENSES OF NORMAL STUDENTS.

On this subject, too, there seems to exist amongst some Boards of School Commissioners considerable variety of opinion as to their mode of procedure. A few weeks ago I had a letter from one of the students who attended the Normal School last winter, which amongst other things contained the following sentences, "The Commissioners served us this time the same as last winter. They did not grant a copper for travelling fees at their last meeting," &c., &c. To this communication I sent the following reply bearing on this subject; and as there may be other students and Boards in the same circumstances, it is here inserted:—

"DEAR SIR,—

I am sorry to learn from your communication that you and other students who attended the Normal School last winter, from such a distant part of the country, received no assistance from the Board in the way of travelling expenses, and do earnestly hope that this arose not, as you allege, from any opposition, on the part of the Board, to the Normal School, but from a previous distribution of their available funds. In the 8th clause of the Normal School Bill it is thus stated, "Each Board of Commissioners shall have the right of sending to the Normal School, at the commencement of any of its terms, one pupil, either male or female, for every one hundred pounds received by the Board from the Provincial Treasury, and, if necessary, they shall aid such pupils from the Provincial Grant at their disposal, in paying their travelling expenses to and from the Normal School at the rate of 3d. per mile," &c.

I hold, then, that, in accordance with this enactment, every Board of School Commissioners is bound to pay to every student duly recommended to the Normal School, at the rate of 3d. per mile for travelling expenses to and from the Normal School, and that, at the time when the recommendation is granted. True, there is the condition appended 'if necessary,' but this, I apprehend, has respect not so much to the circumstances of the applicant, as to the place of his residence, being contiguous to, or at a distance from, the seat of the Normal School. An individual living within a few miles of the institution, and who can easily obtain a private conveyance, may not require such assistance; but it is otherwise when the pupils, as in your case, require to travel the distance of more than 120 miles. I regret the circumstances to which you allude all the more, seeing that this is the only encouragement given to the young men and women of the Province to attend the Normal School, with the view of qualifying themselves for the office of the educators of the young. There is scarcely a Normal School, either on this or the other side of the Atlantic, placed in the same disadvantageous circumstances, in so far as pecuniary assistance to the students in attendance is concerned, as the one at Truro. In some Normal Schools, not only are the travelling expenses of the students defrayed, but a considerable amount of their maintenance, when in attendance. In others, the pupils are entirely supported. And, in others, a superior position and larger emoluments are assigned to their Graduates when they go forth in the capacity of Teachers. All that is granted to the

Normal Pupils in this Province, is 3d. per mile for travelling, and it is hard, when even this is refused, or hesitated about, by any Board. I am happy, however, to say, that this has only occurred, as far as my knowledge goes, in the case of two or three Boards. Generally, they act in the most liberal manner towards the young men or women who intimate their desire to attend the Normal School.

I am yours, faithfully,
ALEX. FORRESTER."

CLOSE OF PRESENT TERM.

The present Session of the Normal School will terminate on Thursday, the 23rd of September. The private examination for Diplomas will take place on the 16th, 17th and 18th, and the public review of the whole Institution on the 22nd and 23rd. Teachers, parents and others interested in the cause of education are respectfully invited to attend on the occasion.

Trustees of Schools and others, who desire Normal Trained Teachers, are again informed that they will require to apply to the Principal of the Normal School with as little delay as possible.

MODEL SCHOOLS.

These Schools will be re opened, after the summer holidays, on Monday, the 16th August. All admitted at any time between the quarterly days are required to pay the whole quarter's fee.

The public review of these Schools took place on Thursday, the 15th July, when the pupils were examined on the work in which they had been engaged during the preceding quarter. There was a large attendance of visitors, including parents, clergymen and others. The interest taken in these Schools seems unabated. They have now been in operation about a year, and the progress made by those pupils who have been in regular attendance during that time has fully realized the anticipations of the supporters of the system.—We believe, however, that its full effects will not be apparent till those who have commenced in the Primary Department have reached the High School and been there a year. Then, we believe, that those pupils who have gone through all these stages will compare favourably, in scholarship and in general character, with those of any similar Institution in this or other lands.

It may again be intimated to parents and others living at a distance, who wish to send their children to these Schools, that there are excellent boarding-houses in Truro and neighbourhood. Some of the teachers are prepared to receive a few boarders at a very moderate rate. Applications to be forwarded to J. B. Calkin, Esq., Head Master of the Model Schools.

GENERAL NOTICES.

REV. ALEX. FORRESTER, D.D., Superintendent of Education:

DEAR SIR,—

I beg to inform you that I taught in School District — for the period of ten months, which is partly within the Board of —, and partly within the Board of —.

At the end of four months, as then agreed on, I sent in my returns to both Boards. The Board of —, in which the school is erected, paid me their proportion at the rate of £25 per annum. The Board of — refused making

any allowance, stating that the Board in which the School is placed is bound to pay for both sides. I travelled about 35 miles to meet the Board of ———, and all that I received from them was only a few School books. They assured me that they would compel the ——— Board to pay me the whole sum.

I continued teaching in the same school, and, after six months more, I again renewed my application with another return, and still they refused granting me any provincial allowance.

This is my position, and I now humbly solicit from you, as Superintendent of Education, to give me advice in this matter.

I remain your obedient servant,

We have had several letters on the same subject, and have therefore deemed it expedient to give insertion to the above. In answer to the inquiry therein made, we have to state that there is no provision made for such cases in the present educational enactment, but that the Legislature, during the session of 1857, passed a law, of which the following is a copy, and which will, we trust, be sufficient to guide both Teachers and Boards of School Commissioners in such cases:—

AN ACT TO CONTINUE AND AMEND THE LAWS RELATING TO EDUCATION.

(Passed the 1st day of May, A. D. 1857.)

Be it enacted by the Governor, Council, and Assembly, as follows:

1. Chapter 60 of the revised statutes, "Of public instruction," as amended by the acts hereinafter mentioned and by this act, also the act 13th Victoria, chapter thirty-six, entitled, "An act relating to the Pictou academy," also, chapter twenty-six of the acts of 1854, and chapter thirty-three of the acts of 1855, respectively entitled, "An act to continue and amend the laws relating to education," are hereby respectively continued until the first day of May, in the year one thousand eight hundred and fifty-eight.

2. The allowance for common schools shall be increased to the sum of fourteen thousand eight hundred and ninety pounds, and shall be divided among the various counties and districts in the proportion of one third in addition to the amounts which they now receive under chapter sixty of the revised statutes and the acts in amendment thereof.

3. Where the bounds of any school district are intersected by the lines of educational districts into which any county may be divided, such school district shall be assessed proportionally by the board of commissioners for each educational district by the lines of which the bounds of such school district are so intersected.

4. The sum of one hundred pounds granted for the support of three grammar schools in the county of Cape Breton, may hereafter be applied to the support of two grammar schools only in that county.

To enable the teachers, in their semi-annual returns, to give a correct and reliable report of the educational statistics within their respective districts, they ought to keep an accurate register of the daily attendance and of all that transpires in school. It is to be hoped that the returns from the Common and Grammar Schools, as well as from the Academies, will be far more complete this year than heretofore.

The Superintendent of Education will hold Teachers' Institutes, meet the Boards of School Commissioners and address public meetings, as follows:—

Now Glasgow—September 10th.
Pictou—September 11th.
Antigonishe—September 27th.
Port Hood, C. B.—September 29th.
Margaree, C. B.—October 1st.
Baddeck, C. B.—October 4th.
Sydney, C. B.—October 8th.
Arichat, C. B.—October 13th.
Guyaborough—October 16th.
St. Mary's—October 19th.
Middle Musquodoboit—October 21st.

The Teachers' Institutes will meet on the days fixed at 10 o'clock A. M.; the Boards of School Commissioners at 3 o'clock P. M., and the public meetings at 7 o'clock P. M.

Dr. Forrester requests that the Clerks of the different Boards will be so kind as give intimation of the above appointments to the parties concerned.

Dr. F. will also address public meetings on the subject of Education, at the following intermediate places, Merigomish, Little River, and, in Cape Breton, Plaister Cove, Mabou, Hogamah, Lake Ainslie, Broad Cove, Middle River, St. Ann's, North Shore, Boularderie, Little Bras d'Or, Sydney Mines, Bar, Mire, West Bay. Due intimation of the time and place of these meetings will be forwarded.

IV.—EDUCATIONAL INTELLIGENCE. COLONIAL.

NOVA SCOTIA—PUBLIC EXAMINATIONS OF SCHOOLS.

During the past month, the only subject worthy of notice, connected with education, is the public examination of schools, and especially of those of the metropolis. This is the season of the year when the majority of schools have their summer holidays, and these holidays are generally preceded by public examinations. What has particularly struck us in reference to these examinations has been the prominent position assigned them in the public prints, and the eulogistic terms in which they have been described. Of such a character have been the notices given of the National School, under Mr. Willis, of the Academy, Wolfville, under Mr. Hart, of the Free Church Academy, under Mr. George, of the Dalhousie College, High School, under Mr. Reid, of the Model Schools, Truro, under Mr. Calkin, of the Acadian School, under Mr. Garvie, of the Dartmouth Academy, under Mr. Miller, of the Pictou Academy, under Mr. Costley, and of the Female Schools, under Miss Pearson and Miss Topper, Halifax. And we doubt not that other examinations have been equally signalized in local and other papers which have not met our eye. All this is exceedingly cheering, and is surely indicative of an increasing interest taken in the cause of popular education. We fondly trust that these examinations will continue to rise in the public estimation, and that every effort will be made to render them in reality what they are intended to be, tests of the industry and skill of the teacher, and of the proficiency of the pupils. In order to this, it is necessary that the teachers make these examinations fair representations of the actual condition of his school, and not showy exhibitions or celebrations; and that the pupils be made to feel that the results of their exertion through the term, and not a few special efforts near its close, will be brought into review.

NEW BRUNSWICK.

We observe from the *Gazette* of this Province that the Superintendent of Education is busily engaged visiting different counties, holding public meetings, and addressing them on the subject of popular education. This is beginning in the right quarter. We have long been impressed with the conviction that the formation of a correct public opinion constitutes the rallying point of all improvement and progress in the cause of education. And how is this to be brought about? It is not by legislative enactments on the subject of education; it is not by the appropriation of a large amount of the revenue of the country for its furtherance. It is by direct, and enlightened, and earnest, and stirring appeals to the conscience and heart of the people themselves. It is by inspiring the minds of parents with a sense of their responsibility and privilege in reference to their offspring. It is by showing the men of wealth and influence in any

community that there is no way in which they shall obtain such a per centage for the money they expend, as in the furtherance of the education of the young, the patriot, that in this walk he will find the highest gratification for his benevolent spirit; and the Christian the noblest, the most animating reward for all his self-denying—self-sacrificing acts. We earnestly hope, then, that much good will be effected by these exertions of our fellow-laborer, and shall be glad to hear, of his movements.

CANADA.—SKETCH OF THE SYSTEM OF ELEMENTARY INSTRUCTION IN UPPER CANADA.

Annual parliamentary grants were made in aid of common schools for more than thirty years, but expended without system, and with little advantage to the country. In 1841, the first law was passed, embodying the great principle of granting money to each county, upon condition of such county raising an equal amount by local assessment. The machinery of the law requiring modification, the Hon. F. Hincks brought in another bill in 1843, which became a law, and which very much simplified and improved the details of the Act of 1841. By that law, the Secretary of the province was ex-officio Chief Superintendent of schools, with an assistant. In 1844, the office of assistant Superintendent was offered to the present incumbent; and after having received the sanction of the authorities of his church, he accepted it in the autumn of that year, upon the understanding that the administration of the school system should constitute a distinct non political department, and that he should be permitted to provide for the performance of his duties for a year by a deputy, and have a year's leave of absence to visit and examine the educational systems of other countries, both in Europe and America, before attempting to lay the foundations of a system in Upper Canada. The whole of 1845 was employed in these preliminary enquiries, and the results were embodied, in March 1846, in a "Report on a System of public Elementary Instruction for Upper Canada," and a draft of a bill which was introduced into the Legislative Assembly by the Hon. W. H. Draper (then Attorney General), and became a law in June 1846. In a few months afterwards, a draft of bill was prepared for establishing a system of schools in cities and incorporated towns, which was introduced into the Legislative Assembly by the Hon. J. H. Cameron (then Solicitor General), and became a law in June 1847. These two acts, with the modifications and improvements which experience has suggested and the progress of the system required, have been incorporated into one Act, which was introduced into the Legislative Assembly by the hon F. Hincks (Inspector General), and became a law in 1860—the first Act to which his Excellency the Earl of Elgin gave the royal assent after the removal of the seat of Government to Upper Canada.

The municipal council of each township divides such township into school sections of a suitable extent for one school in each, or for both a male and a female school. The affairs of each school section are managed by three trustees, who hold their offices for three years, and one of whom is elected annually by the free-holders and house-holders of such section. The powers of trustees are ample to enable them to do all that the interests of a good school require—they are the legal representatives and guardians of their section in school matters. They determine whatever sum or sums are necessary for the furnishing, &c., of their school and the salaries of teachers, (in addition to the Provincial grant and County assessments,) and report fully to the local superintendent by filling up blank forms of annual reports which are finished to them by the Chief Superintendent of Schools from year to year. The township council imposes assessments for the erection of school houses, or for any other school purpose desired by the inhabitants of school sections through their trustees. The inhabitants of each school section decide as to the manner in which they will support their school according to the estimates and engagements made by

the trustees, whether by voluntary subscription, by rate bills on parents sending children to the schools, or by rates on the property of all according to its assessed value, and opening the school to the children of all without exception. The latter mode is likely to supersede both the others; but its existence and operation, in connection with each school, depend upon the annual decision of the inhabitants of each school section at a public meeting called for that purpose.

The duties of teachers are prescribed by law, and their rights are effectually protected. No teacher is entitled to any part of the school fund who does not conduct his school according to law, and who has not a legal certificate of qualifications from a county Board of Public Instruction; nor is any school section entitled to receive any aid from the school fund in which a school is not kept open six months during each year by a teacher thus recognised as to both moral character and attainments. The law also requires a public quarterly examination to be held in each school.

The inspection of the schools is made by local superintendents, who are appointed annually by the county councils, and who may be appointed one for each county, or one for one or more townships, at the pleasure of each county council. Each local superintendent is entitled to at least one pound (four dollars) per annum for each school under his charge. He is often allowed more. He is required to visit each school at least once a quarter, and to deliver a public lecture on education in each school section once a year, besides apportioning the school-moneys to the several sections within his jurisdiction, giving checks, on the orders of Trustees, to qualified teachers upon the county treasurer or sub-treasurer, aiding in the examination of teachers, deciding various questions of dispute and reference, corresponding on school matters, and reporting annually to Chief Superintendent according to the forms prepared and furnished by him.

Besides the local superintendents, all clergymen recognised by the judges, members of Legislature, magistrates, members of the county councils, and aldermen, are school visitors, to visit all the schools, as far as practicable, within their respective charges and municipalities.

There is a Board of Public Instruction in each county, consisting of local superintendents and the trustees of grammar schools in such county. These county boards consist largely of the clergy of different religious persuasions, associated with some of the most intelligent lay gentlemen in each county, so that the county has the best guarantee that its circumstances will admit for the moral character and intellectual qualifications of teachers. The Teachers are examined and arranged into three classes, according to the Programme of examination prepared and prescribed by the Council of Instruction for Upper Canada.

The Municipal Council of each county is responsible for raising at least an equal sum for salaries of teachers in the several townships within its jurisdiction with that which is annually apportioned to them out of the parliamentary appropriation by the Chief Superintendent of Schools.* The county councils also appoint the local treasurers of the school fund, and the local superintendents of schools, and provide for their salaries. Special provision is also made for the security of the school fund, against the diversion of any part of it, and for the prompt payment of it to teachers at the time specified by law. Both the county and township councils have authority to raise any sums they shall think proper for public school libraries under general regulations prescribed according to law. A parliamentary appropriation has been made for the establishment of school libraries, to be expended on the same conditions with the appropriation for the support of schools.

The law also provides a system adapted to the circumstances of cities, towns, and incorporated villages. In each city and town there is one board of trustees for the management of all schools in such city or town—two trustees elected for each ward, and holding office for two years—one retiring annually. In each incorporated village not divided

* By County Assessment.

into wards, there is a board of six trustees elected—two retiring from office and two elected, each year.

At the head of the whole system we have a Council of Public Instruction and a Chief Superintendent of Schools, both appointed by the Crown. The Council has the entire management of the Provincial Normal and Model Schools, recommends the text books for the schools and books for the school libraries, and makes the regulations for the organization, government and discipline of common schools, the examination and classification of teachers, and the establishment and care of school libraries throughout Upper Canada.

The Chief Superintendent, who is *ex-officio* member of the Council of Public Instruction, and provides accommodations for its meetings; apportions the school fund to the several municipalities throughout Upper Canada, prepares the general school regulations and submits them, as well as that of text and library books to the consideration of the Council; prepares the forms of reports and modes of all school proceedings under the act, and gives instructions for conducting them, as well as for holding teachers' institutes; decides questions of disputes submitted to him; takes the general superintendence of the Normal School; provides facilities for procuring text and library books, and provides and recommends plans of school houses; prepares annual reports; corresponds with local school authorities throughout Upper Canada, and employs all means in his power for the promotion of education and the diffusion of useful knowledge. He is responsible for his official conduct and for all moneys that pass through his Department.

EDUCATION IN GREAT BRITAIN AND IRELAND.

We are entirely indebted for the undormentioned facts to a Pamphlet recently published, entitled, "A Report of an Examination into the Working, Results and Tendencies of the chief public Educational Experiments in Great Britain and Ireland; by the Rev. William Frazer, Paisley." This highly talented and deeply interesting Pamphlet we shall notice more formally in our next. In the mean time, we gather from it the more important facts bearing on the present state of Education in these countries—as the most recently furnished and perfectly reliable.

IRELAND.

In this portion of the British dominions there are two parties pushing forward the education of the people—the *National Board* and the *Church Education Society*.

NATIONAL BOARD.—So far back as 1812, the Commissioners of Education recommended the adoption of a system "from which should be banished even the suspicion of proselytism, and which, admitting children of all religious persuasions, should not interfere with the religious tenets of any. The Kildare Place Society was commissioned to distribute the National Grants and to work out this theory. In 1831, when the Grants were withdrawn and the National Board organized by Parliament, there were 1021 schools, with 137,689 scholars—89,000 of whom, or more than one-half, were Roman Catholic children. In 1828, a Committee of the House of Commons, to which were referred the various Reports of the Commissioners of Education, recommended a system to be adopted which should afford, if possible, a combined literary and a separate religious education, and should be capable of being so far adapted to the religious persuasions which prevail in Ireland, as to render it, in truth, a National system for the poorer classes of the community. This theory is now being wrought out by a vast educational machinery. In the centre, is the National Normal School, training between 300 and 400 Teachers, annually. Around it, in the country, are 12 District Model Schools, to exhibit the best methods and diffuse educational spirit; and 5124 National Schools, having on their roll upwards of 500,000, with a daily attendance of 235,000. Associated with the Normal School, and in its neighbourhood, is the Agricultural College, with its lectures and experiments, open to all the National Teachers; and, with its Albert Farm, to exhibit all that is valuable in

Agricultural improvements. Connected with this experiment are 30 Model Farms and 153 Agricultural Schools. To keep all in working order there are 30 District Inspectors; 6 Sub-inspectors; 3 Inspectors of Agricultural Schools; 18 Organizing Masters; and 6 Organizing Schoolmasters.

CHURCH EDUCATION SOCIETY.—"The objects of this Society are to assist Schools at present existing in the country, and to establish new Schools on an improved system for the purpose of affording to the children of the Church, instruction in the Holy Scriptures, and in the Catechism and Formularies of the Church under the direction of the Bishops and Parochial Clergy, and under the tuition of Teachers who are members of the United Church of England and Ireland." The Society holds the principle of State Education, admits the right of Government inspection, and is willing to submit to it; but refuses all Government advantages, unless permitted the unrestricted use of the Bible in Schools. This Society has a Normal Institution, in which 100 Students, male and female, are annually trained. It has 1769 Schools, instructs between 80,000 and 90,000,—upwards of 15,750 of whom are Roman Catholics,—and raises about £40,000 a-year.

ENGLAND.

England is attempting a National Education through denominational action. There are certain principles and regulations on which the distribution of assistance from Parliament depends, and to which all denominations alike must conform. While in Ireland the national system repudiates denominationalism, and ignores religious teaching in the public work of the School—in England, the Privy Council Grant system depends on denominationalism, insists on religious teaching as part of public school work, and refuses assistance in any form to secular Schools. The Committee of Council on Education demand proportional liberality to meet their outlay in assisting to build School-houses, to pay Teachers' salaries, and to supply Books, Maps, and Apparatus. They also demand for their money a certain amount of awakened and well-directed intelligence. The different agencies at work are: 1. The British and Foreign Society; 2. The Church of England; 3. The Wesleyans; 4. The Roman Catholics.

We intend, in subsequent numbers, to detail the efforts of these agencies respectively. In the mean time, the following tables will show the result of their combined exertions since 1839—that is, during the last 20 years:—Schools built, 2,587; enlarged or improved, 982; Teachers' residences built, 1,377; Scholars for whom additional accommodation have been provided, 459,754. In the same period the Church of England has raised for Normal Colleges, £148,847 13s. 2½d., and obtained from Privy Council for the same object, £69,062 10s. 3d.; for ordinary Schools, £1,285,541 8s. 11½d.; and from Privy Council for the same object, £476,880 12s. 5½d. The British and Foreign School Society raised for Normal Colleges, £16,433 7s. 9d.; and from Privy Council for the same object, £5,000; for ordinary Schools, £87,804 6s. 5½d.; and from Privy Council for the same, £43,762 12s. 5½d. The Wesleyans raised for Normal School purposes, £33,301 9s. 3d.; and from Privy Council for the same object, £5,049 10s.; for ordinary Schools, £26,805 9s. 11½d.; from Privy Council for the same object, £10,758 9s. 8d. Home and Colonial, for Normal Colleges, £1,600; from Privy Council for same, £6,000; for ordinary Schools, included in the Church of England Schools, Roman Catholics, for Normal Colleges, £9,630; from Privy Council Grants, £3,900; for ordinary Schools, £13,074 11s. 9d.; from Privy Council, for same, £5,041 19s. 2d.

In addition to the above efforts by denominations and Government, there is another section of the Christian Church, a certain portion of the Congregationalists, acting on the purely voluntary principle. The leading principles of the Board are thus stated, "That the Board is expressly constituted to promote popular education partaking of a religious character, and under no circumstances receiving aid from public money administered by Government." In 1843 they started operations by a magnificent money contribution of £120,000. The

Training Institution at Homerton cost £12,000; and the yearly outlay of the Board for training students is about £1,000.—The number of students trained last year and appointed to situations was 36. This experiment, intended to exemplify the adequacy of the voluntary system, is only exemplifying its inadequacy, the general income of the Board being only £3,000.

In addition to the sums granted by Government to the different denominations complying with the conditions of the Privy Council, there are also large sums granted annually for Capitation Grants, Industrial Schools, &c., to which we may afterwards refer.

Though the means of education are thus liberally distributed in England, yet, after twenty years toil, we find 2,262,019, of school age, not at school.

SCOTLAND.

The educational views of Knox in this country at once became national. In the first Book of Discipline it is stipulated "that every several Kirk shall have a schoolmaster," such a one as is able at least "to teach Grammar and the Latin tongue;" and that in every notable town Colleges be established for the diffusion of higher education in Language, Logic and Rhetoric. These proposals were practically secured by the Act of Privy Council in 1616, and more fully and formally by legislative enactments in 1638. The conception too of the education which should be given, and of the position and power of the public Teacher, was much higher than that common in England.

But there was no provision made in the Parochial School system for the increase of the population, which in time far exceeded the means of supply. This drew forth the efforts of different religious bodies and of associations of individuals, which efforts have been largely aided by Parliamentary Grants,—there being not less than 926 schools receiving aid from Parliament.

From the census of 1851 (and there has been no great change since) it appears that the day-schools are 5,429, of which 3,349 are public and 1,893 private. Of the public schools 1,039 are supported by general or local taxation, 401 by endowment, 1,385 by religious bodies, and 434 miscellaneous. The total number of scholars in day-schools was 368,517. This gives a proportion to the population of Scotland of 12.76 per cent., or one scholar to every 7.84 inhabitants. Making a fair allowance for deficient numbers, it seems probable that 14 per cent., or 1 in 7 of the people of Scotland, are at school.

In 1856-7 the average salaries of male Teachers, including all emoluments from Government Grants and all professional sources of income, were of certificated (that is, Teachers holding Queen's certificate) in Established Church Schools £98 11s., of uncertificated £75 13s.; in Free Church Schools, certificated £92 13s., and of uncertificated £69. In Episcopalian Schools, certificated £74 18s., uncertificated £44 11s. In Roman Catholic Schools, certificated £76 14s., uncertificated £53 8s.

So much for the outer combinations of popular education in Britain; it may now be asked, What are the inner processes that are giving form and power to the teaching of the Common Schools? These may be regarded as threefold. 1st. The Mechanical and Verbal. 2nd. The Social, Intellectual and Emotional. 3rd. The Physical, Intellectual and Moral, or the two-fold training power of the covered and uncovered School.

I. The Mechanical and Verbal. This system, originated by Bell and Lancaster, was fostered and represented in England by the National Society and British and Foreign School Society, in their Central Training Schools, adopted with slight modifications in the National Normal Schools, Dublin, and long wrought out in the Sessional Schools of Scotland. This system introduced monitorial agencies, which broke up the olden apathy and listlessness and gave impulse and rapidity of movement to the classes.

II. The Social, Intellectual and Emotional. This system,

originated by Pestalozzi, has been exemplified, in Britain, chiefly in the Central Institution of the Home and Colonial Society, London, adopted partially in the Training School of the Church Education Society in Dublin, and appears generally in the Infant Schools of Britain. While the system of Bell and Lancaster dealt only with the outer and surface elements of life, Pestalozzi's lays hold of the sympathies of the young heart in its dreaming connections with nature, and encourages children to look to objects, observantly, that, through their mutual sympathies and communings with nature, they might increase their own happiness. Some of his principles are sound, others without foundation in nature, and consequently false in philosophy and hurtful or useless in application. All our knowledge, he says, arises out of number, form and words. On this trifling basis education must proceed.

III. The Physical, Intellectual and Moral. This system, originated by Stow, has been long fostered by the Glasgow Education Society, and now exemplified in Glasgow Training College (Free Church), in Cheltenham College (Church of England), Westminster Training College (Wesleyan), and Homerton College (Congregationalist), and appears in modified forms in many of the leading Institutions of the country. This is the only system which has survived in all its parts the test of manifold experiments. It was gradually evolved amid the changes and demands of life, and is founded on experience. It is in truth a creation of necessity.

The Normal Colleges of Britain now number 31.

We intend to pursue the same course with the Continents of Europe and America.

V.—REVIEWS OF SCHOOL BOOKS.

THE SPELLING BOOK SUPERSEDED; or a new and easy method of teaching the Spelling, Meaning, Pronunciation and etymology of all the difficult words in the English Language; with exercises on Verbal Distinctions. Halifax, N. S.: A. & W. MacKinlay.

Nothing is more necessary to the scholar than to be a good speller. Whatever be his general attainments, a document from his hand, containing misspelled words, will secure for him among strangers, a reputation for being illiterate. And yet how many are there who are sometimes at a loss how to spell a simple word: or rather how many who are often puzzled with the most common ones! It is a well known fact, that many men who have studied spelling from their boyhood, cannot write a letter free from inaccuracies in this particular; and that in most of our schools, the pupils are made acquainted with the Orthography of only a small number of the words in the language.

But what is the cause of this very general failure? Does it arise of necessity from the intricate structure of the language; or is the method usually adopted in teaching this branch of education not calculated to secure the end in view? That our language does abound in irregularities, which present the student with many difficulties, is true indeed; but if any way can be pointed out, by which these difficulties could be obviated, and greater efficiency insured, it becomes a matter well worthy of the attention of the teacher.

The study of long columns of words, such as are usually found in our spelling books, is very dry and uninteresting. But even when he has laboured through his spelling book, the student has mastered only a few of the words in general use, for it would be impossible thus to learn all the words in the columns of a dictionary.

If the use of the common spelling book fails to make good spellers, where shall we find a remedy? To what shall we have recourse but the reading book, where we find all the words, and in the very combinations in which they must be used in writing? A pupil who can spell all the words as they occur in sentences dictated from his reading lesson, can spell the same words when he comes to use them himself in the same manner. Spelling in connection with the reading lesson then, will secure greater efficiency with less labor than

any other way. But not only should this be done orally, but the sentences dictated should often be written by the pupils; for it is in writing only they are called upon to test their abilities; and here they are most liable to mistakes.

Yet to facilitate the study, and make the pupil thoroughly acquainted with orthography, a book is needed. Not a book whose object is merely to present a certain number of words promiscuously arranged, which may be learned by rote; but one calculated to remove every difficulty, and make the pupil master of the Orthography of all the words in the language. Such is the aim of the "Spelling Book Superseded," and it is at least an advance in the right direction.

As its name implies, it is not simply a spelling book, but it is intended to supersede the use of the spelling book. It presupposes that spelling is taught from the reading book, and furnishes means for readily investigating those nice distinctions where the latter fails.

Almost all those words that are sometimes confounded, on account of being pronounced or spelled alike, are arranged side by side, so as to enable the student at once to see and mark the distinction. And the same words are afterwards ingeniously arranged in sentences for dictation.

Rules for spelling are given, by the aid of which, the Orthography of the majority of the words in the language becomes easy. And all the irregular and difficult words are collected together;—they being the only ones which it is necessary to study simply for the purpose of becoming acquainted with their orthography. But their number is not so great as to preclude the possibility of getting through with them, in a limited time, by taking a very few every day. And by picturing out two or three words in each lesson, the teacher may make it not only an intellectual exercise, but highly interesting to the children.

J. H. W.

CRUISE OF THE BETSEY, &c., &c. By Hugh Miller, L.L.D. Author of the "Old Red Sandstone," &c. Halifax, N.S.: A. & W. Mackinlay.

This is the first volume of the posthumous works of the late Hugh Miller. It would seem that his widow, so celebrated for her literary attainments, had resolved to collect and edit the scientific remains of her husband; but scarcely had she begun when she was compelled, from the state of her health, to desist from the undertaking. This task has now devolved on the Rev. W. S. Symonds, Paddock-Rectory, who seems well able to do justice to it. The volume before us contains an account of "The Cruise of the Betsey, or a Summer Ramble among the Fossiliferous Deposits of the Hebrides," as well as "The Rambles of a Geologist" hitherto unpublished, save as a series of articles in the *Witness* newspaper. The continuousness of the narrative is thus preserved, and this circumstance, even to those who read it as it appeared in the pages of the *Witness*, must greatly enhance the worth of the publication. We regard the work as specially valuable to the practical Geologist, furnishing an admirable illustration of the best method of procedure in an exploratory expedition. "The Old Red Sandstone," and "The Footprints of the Creator," as pieces of Descriptive Geology, must ever remain the favourite productions of our author to the scientific Geologist; "The Testimony of the Rocks" to the philosophico-Theologian; and the work before us to the practical Geologist.

AGRICULTURAL.



I.—THEORY OF AGRICULTURE.

AGRICULTURE A BRANCH OF EDUCATION.

It is, we believe, an incontrovertible truth, that it is the design of the Deity that the soil of every country should maintain the whole people of that country. For His own purposes, it may please the Almighty to multiply the people of an isolated spot beyond the capability of the land to support them. But history furnishes us with no clear case in which He has done so. We read of famine and pestilence being sent as his avengers, but never that the land, in ordinary seasons, could not, in any country, be made to maintain the whole population. Now, if this position be a sound one, then it is clear that no ordinary responsibility devolves on the tillers of the soil. It is not only their bounden duty to provide for themselves and their household, but to use every effort so to develop the capabilities of the soil, as that the means of living are raised for the whole people,—allowance of course being made for extraordinary seasons, which no skill or industry can avert. Nay more, we hold, that, if the position we have taken is a sound one, the whole agricultural interests of a country ought to enter largely into all its political arrangements and undertakings;—that as much of a nation's prosperity and happiness depends on the skilful cultivation of the soil, so does it behoove it to see that everything is done for its furtherance, and to give such encouragement as that this end shall be most extensively effected.

And in what way can a nation, in a national capacity, most efficiently advance the cause of Agriculture? Generally, we reply, by the diffusion of sound and thoroughly tested knowledge, both theoretical and practical, respecting the whole subject of Agriculture; and by furnishing every stimulus to those who are engaged in this employment, to call in the aids of science and of art,—to search for and to avail themselves of those inexhaustible stores of good, which the Creator has everywhere laid up for them, and which He the more lavishly lays open, the greater the amount of bodily and mental labour expended in the search for them.—And how is this to be done? Principally, we believe, by the Legislature and Government of the country giving to this department of its economical resources a conspicuous place in the common school education of the country.—Much, very much, has been accomplished through the medium of Agricultural Associations, popular Lectures, Magazines devoted to the purpose, Legislative Grants of public money, &c., &c. But these means, however valuable, in their way, are not sufficient to lay a thorough foundation of all the relations in which Agriculture stands to Science, to saturate the public mind with a knowledge of these relations. For this purpose the principles and laws of this knowledge must be understood and inculcated in our common schools. Just as the principles and laws of Book-keeping are taught,

in order to qualify the youth for the better performance of their future duties as merchants, so ought it to be with the youthful farmer. We are aware that this has been attempted in some countries, that Legislatures have given a prominent place to Agriculture, both theoretical and practical, in their national systems of education, and that these efforts have not been followed with the results anticipated; that, in fact, they have proved a comparative failure; and Ireland is quoted as an exemplification. Now we humbly apprehend that this falling short of the desired result, if it may be so regarded, is not owing to its being introduced into the national system, but to the way in which it is done,—its being made a separate branch of study and practice, with Model Farms and Lectures, and an equipment of Professors and Teachers apart from the common education of the country. It is our decided conviction, that if the Legislative enactments of the country referred to, as well as of other countries, instead of assigning to Agriculture an exclusive position, they had enjoined it, in all rural districts at least, as one of the branches of a common school education, and made provision for a due qualification of their teachers in this department, through the national Normal Institutions, far more extensive and vastly more beneficial would have been the results.

In accordance with these views and impressions we have all along pleaded for the establishment of a small Experimental Garden and Farm, in connection with the Provincial Normal School. On our earnest recommendation the Legislature of 1856 granted to the Directors of that Institution such a sum as enabled them to purchase a lot of land, surrounding the Normal School Building, in every way suited for the purpose above mentioned. The Session of 1857 granted £100, with the view of aiding in bringing these grounds into shape and order. Almost the whole of that sum was expended in the constructing of roads, and in the trenching of a portion of the ground intended for the growth of Fruit Trees. In our last Educational Report to the Legislature we stated that all was now in readiness for commencing operations in this department, and applied for the annual grant of a £100 for four or five years, in the hope that, by that time, the fees of the Agricultural Students and the sale of the Stock collected would render it self-sustaining.—That request was refused, not because of any disapproval of the undertaking, but because it was deemed inexpedient in the present financial condition of the country to originate any new movement involving the expenditure of public money. In the mean time we are doing what we can to bring the land into working order, in the hope that the day is not far distant when the Legislature will see meet to finish what it has begun, and thereby place the cope-stone on this important Provincial undertaking.

We are much gratified in being able to quote from the Report of the Royal Agricultural Society of Prince Edward Island of last year, the following sentiments so entirely accordant with our own, "In 1833 the Royal Agricultural Society imported from the Messrs. Blackwood, of Edinburgh, several works on Agricultural Chemistry, by Professor Johnson, a gentleman of great practical knowledge—for distribution throughout the Island; but your committee regret that their endeavours to introduce those works—which are of a very practical and useful nature—have not been attended with anticipated result, and they despair of improving the condition of the young farmers of the Island in this way, unless some uniform system of Agricultural instructions be introduced into the Government Schools."

STATE OF AGRICULTURE IN NOVA SCOTIA.

There is perhaps no pursuit in the industrial economy of nations that has made such strides in advancement, within the last twenty-five years, as that of Agriculture. This has been specially the case in Great Britain, owing mainly we apprehend to these three causes;—the progress of science, the advancement of the mechanical arts, and the growth of

the Turnip. It is no doubt true that events in Providence overrule, and control, and stimulate all these subordinate instrumentalities. This they do in every department of the physical well-being of any country, but more particularly in the cultivation of the soil. Nothing in this way, in these modern times, has produced such results as the failure, the all but universal failure, of the Potato crop, and that not for one, but for a succession of years. Among other results, it has produced a complete revolution in the commercial affairs of Britain; and this again has imparted a powerful stimulus to the application of those scientific discoveries in Organic Chemistry made several years ago by Lord Dunderdale, Sir Humphrey Davy, De Saussure, Sprengel; and more recently by such men as Nilder in Holland, Liebig in Germany, Dumas and Boussengault in France, Norton in America, and Johnson in England. The question "*cui bono*" is often put by the utilitarian in reference to the researches and discoveries of the men of science. Why every thing, we reply; and it is only the grossness of his apprehension that prevents him from looking beyond the matter of pounds, shillings and pence, and perceiving that, in nine cases out of ten, every profitable speculation on which he embarks is owing to the discovery of some scientific fact, which up to a certain time may have lain buried in some large folio volume, but which, from events in Providence, has then been resurrectionized and turned to practical account. The allusion above made forms a fine exemplification of the truthfulness of this remark. The discoveries of these savans lay entombed in their works for years, or at best were mere matters of speculation, until the great Proprietor of matter as well as of mind arose to vindicate the wrongs that had been inflicted on the vegetable kingdom, through an excess of cultivation of the Potato, and sent that blight which produced such havoc. This was the immediate cause of the carrying of the measure of Free Trade in Corn in the Imperial Parliament; which aroused and stimulated the British to compete with the foreign growers, in far more favourable circumstances both as it respects climate and the condition of their soils. This competition produced its legitimate results, inducing the former to resort to every means both scientific and mechanical; and it was then, and not till then, that the noble discoveries of Davy and Sprengel, received that attention which their importance demanded; by means of which the land was rendered capable of yielding five, or eight, or ten times the quantity of its wonted produce, and that too with much less mechanical labour and much less injury to the soil than heretofore. But enough in this strain at present.

The same progressive advancement in Agriculture has not taken place on this Continent, and the reason of this is obvious. It is just because in many districts nature has done too much for the farmer. In new and virgin soils, in the alluvial intervals and marshes, the ten or eleven ingredients,—to which we have already referred,—as essential for securing the fertility of the soil are to be found in sensible proportions, and thereby render the application of science and mechanical art in a great measure unnecessary. In the old or cultivated districts, however, the continued cropping of the soil is beginning to produce its legitimate results, and those lands capable of yielding from thirty to forty bushels of grain per acre, now, with a great deal more labour, scarcely yield eight or ten. The crops that have been taken off, have robbed them of many of their ingredients, and these not being replaced, the grain has very properly refused to grow. The first effect of this state of things is emigration to newer districts, such as is yearly taking place from Lower Canada to the Far West. But others are here and there pursuing a surer, more profitable and more exalted course. They are beginning to apply science and mechanical skill to the culture of the soil, and as the beneficial results of these efforts are more visibly apprehended, they will be resorted to by a much greater number.

Nova Scotia has shared, to a certain extent, in this improvement. Never before was such an impulse imparted to the whole cause of Agriculture in this Province as was done

some thirty years ago through the instrumentality of Mr. John Young. That talented and highly educated gentleman, in his letters of Agricola, presented a very luminous exposition of the bearings of science on Agriculture, and accomplished these in a very satisfactory manner on his Farm at Willow Park, near Halifax. He proved that the doctrines he taught and propagated were sound by the exhibition of their practical results. Hence the organization of Agricultural Associations throughout the Province, with a Central Board, and an Annual Grant from the Legislature, under the auspices of the Earl of Dalhousie, the then Governor of Nova Scotia. These Associations, on the wane for a number of years, were considerably revived six years ago by Sir Gaspar LeMarchant, the late Governor, who exerted himself very laudably in the introduction of new breeds of Cattle and in the encouragement of Agricultural Exhibitions. This movement was much assisted by the last Educational Enactment, requiring Agricultural Chemistry to be taught in the higher Seminaries of learning. This last mentioned circumstance drew the special attention of Principal Dawson, then Superintendent of Education, to the subject of Agriculture, who by his lectures, experiments, and publications, diffused throughout the Province an immense amount of valuable information. Still little more has been done than the breaking up of the fallow ground. The high scientific principles, so lucidly presented in the writings of Agricola, and, more recently, by Principal Dawson, must be carried into far more practical and vigorous operation.—A great variety of means must be resorted to for this purpose, to which, as time and opportunity admit, we shall revert. In the mean time, we may specify a few of them. 1st. A remodelling and an infusing of new life into the Agricultural Societies throughout the length and breadth of the Province. 2nd. A wider diffusion of information relative to the pecuniary benefits, to be derived from a scientific culture of the soil. 3rd. A greater adaptation on the part of our farmers to external circumstances, both as it regards soil and climate. 4th. A far more careful husbanding and preparation of all the varieties of fertilizing media; organic and inorganic, natural and artificial. 5th. A greater breadth of land devoted to green cropping—every Farm with thirty acres of arable land ought to have three of these in Turnip. 6th. The rotation of crops must be more rigidly adhered to. 7th. Warmer and more commodious housing must be provided for the Live Stock.

II.—PRACTICE OF AGRICULTURE.

GENERAL TOPICS.

SURFACE MANURING.

The capital of the Farmer is his manure or compost heap,—the fertilizing media. Whenever the Farmer thoroughly believes this, from his own practical experience, he is on the high road to prosperity, in so far at least as his agricultural operations are concerned. As then the Merchant strives to keep up his credit with the Bank so ought the Farmer to do with his Compost Beds. But more of this anon. We have introduced the subject here for the purpose of calling attention to a matter too little attended to in this country,—we refer to surface manuring. This is a practice now very generally followed in countries where the cultivation of the soil is in an advanced state. Whenever the Farmer sees any field of grain, as it is starting into vegetation, of a sickly growth or thin of plant, he topdresses it. He generally applies the manure at two times, the period of application depending on the state of growth.—The time most suitable in this country for surface manuring of grain crops may be from the middle of June to the middle of July. The state of the weather should be studied, as the action of the manures depends mainly upon their being washed into the soil. By the use of the harrow the manure can be mixed with the soil, and thus brought nearer the roots of the plants; but the presence of moisture to dissolve the manure,

and convey it to the rootlets of the plants, is essential for its being taken up. Besides, when certain manures are exposed on the surface to drying winds and sunshine, there is always a danger of the more volatile constituents passing into the atmosphere. The best kinds of manure for top-dressing are those containing, besides nitrogen, a portion of phosphate, a mixture of nitrate of soda or of sulphate of ammonia, with a portion of dissolved bones. One cwt. of nitrogenous with one cwt. of phosphate manure per acre is sufficient, except the land is in a very low condition, and the appearance of the crop unseasonably backward. Peruvian guano may be substituted for the other manures, two or three cwt. to the acre. This spring we sowed in the Experimental Farm about an acre of wheat. The ground, being very much exhausted, the plant looked exceedingly sickly and yellowish when in the single leaf. When the second leaf was beginning to show itself, we sowed six bushels of crushed bones, and in ten days the change was very noticeable. The bone dust was of very excellent quality, and was obtained at the new mills at Wallace Harbour, County of Cumberland. Though we have not visited these mills, we are informed that they are of a superior order; at all events, the crushed bones we obtained from them seemed to be of excellent quality. The establishment is deserving of every encouragement.

BOG MUD.

Between the hay-harvesting and the grain-harvesting there is frequently an interval of two or three weeks. This is an excellent opportunity for preparing the compost heaps, particularly for mixing bog mud with lime or ashes, or common manure. The following description of mixing these ingredients is taken from Dawson's work:—

Bog Mud, of which there is abundance in this Island, is a most valuable manure, but very generally neglected, one frequently sees a farm poor and worn out, its owner complaining he cannot get manure, and yet in the midst of his worn out fields lies an acre, or half an acre, of mud, from two to five feet deep, containing manure sufficient to make the whole farm as rich as a garden, if he would but use it. An American Agriculturist, speaking of bogs and swamps, says:—"Such reservoirs of vegetable nutrition are mines of wealth to the farmer, if judiciously applied; nor can he justify meagre returns from his fields while this remedy is within his reach." This kind of mud frequently contains an acid quality, and then if spread and ploughed in fresh from the bog, it will be of little or no service to the first crop, and may prove injurious to it; yet, even then, in a year or two, its beneficial effects will be evident, and will be found durable.

But to make it produce prompt and immediate effect, it should be mixed with manure, or lime, or ashes, which may be done in various ways. In mixing it with manure, the plan I pursue—suggested to me by Fessenden's Complete Farmer—is this: I first form a bottom of mud fifteen feet wide and eight or ten inches deep; then lay on a layer of manure about six inches deep; then eight or ten inches of mud; then six inches of manure, and so on, alternate layers of mud and manure, till the heap is about four and a half feet high; the sides, ends and top are then coated with mud ten or twelve inches thick; the manure and mud should be thrown on from each side, and no one allowed to tread on the heap, because, if it is packed too closely, it will not heat so well. The dryer the mud the less manure will be required to cause the whole to heat. I generally make the compost in August or September, and use about one load of manure to three of mud; if not made up till October, I use a larger proportion of manure, as more is then required to produce heat than when the weather is hotter. Early in the spring the heap is turned; it then heats slightly again, and is ready for turnips or other crop, and a cart load of it will be found equal to a cart load of farm yard manure.

In mixing it with lime, I have found twenty barrels of roach lime sufficient for one hundred cart-loads of mud. The lime should be slacked beside the mud, and mixed with it while it is hot; it should remain a year in compost, and be two or three times turned.

SPECIAL WORK FOR AUGUST.

HAY-MAKING.—The former part of this month has proved exceedingly precarious for Hay-making, and in many places, it is not yet mown. The best plan in these critical circumstances is to cut as little as possible at a time and to prepare it well, making it "when the sun shines," for the barn. It is all the more tender and nutritious and beneficial for the milch cows

when it is housed before it has lost its sweet aroma. The following appropriate paragraph is from the *New England Farmer* for July:—

Learn to swing the scythe with an easy, uniform motion, and keep yourself as much as possible in an erect position. Do not attempt to cut too much at one stroke, or to drive the scythe through the grass by main strength. Mowing does not require so great an outlay of strength as many seem to suppose. With the right stroke, and a keen scythe, mowing is pleasant work, especially when the dew falls in pearly drops before every stroke. "Make hay while the sun shines,"—but you must get it cut early to make, by the time the sun shines bright and clear, and then it will be ready to "set on cocks," before the dew of evening gathers upon it. Keep it stirring and tossing in the bright sunshine, through the middle hours of the day. Hay-making is busy work. There is no time for idling. Hay should be put into the barn warm from the field, and well stowed in the mow, and it will come out fresh and fragrant.

GRAIN REAPING.—Late though the season be, by the end of this month or beginning of next the grain fields will be whitening for the harvest. Generally speaking, we are apt here to fall into the same mistake as we are in reference to the Hay, viz., to allow the grain to be over-ripe before it is reaped, which renders it very liable to be injured by winds and rain. *Wheat* should be reaped a little before it is ripe. The uppermost grain ripens before the others in the same ear, and the whole ear is ripe before the straw; if you wait, therefore, till the straw is ripe, the ears will be too ripe, and the uppermost grains will be lost. *Oats* should be reaped when under-ripe. Being well protected by the awn this grain is not easily shrivelled up like *Wheat* and *Barley*, and it fills and ripens in the stock. *Barley* should not be reaped until it bends down its head entirely and presents a light colour. No grain shrivels up more, if it is under-ripe when cut, and no grain bears over-ripeness with less loss; for the grain holds on after the awns have been blown off.

Barley and *Oats* are generally mowed with a scythe with a hoop or cradle. One man can do as much as four with the sickle in this way; and, where laborers are scarce, a great deal of time and labor may be saved. In some of the best farming districts, however, both in England and Scotland, some of the greatest farmers have pronounced this a slovenly and wasteful method, and prefer binding into sheaves, to save the grain from being shed by the raking and tossing about, and for the convenience of having the Corn laid on end in sheaves for protection in rainy weather. The *Wheat* crop is very generally cut in Britain, and in many parts of Nova Scotia, with the reaping hook or sickle; and this method is certainly to be preferred with this crop. It would be of great advantage were the short, broad scythe employed in Flanders, and in many parts of Scotland, introduced into this country.

WHEAT MIDGE OR WEEVIL.—We have received, through the kindness of our friend, Principal Dawson, a very interesting and important treatise on this subject. It is entitled an "Essay on the Insects and Diseases injurious to the Wheat Crops, by H. Y. Hind, Esq., Professor of Chemistry at Trinity College, Toronto." It would seem that the Bureau of Agriculture and Statistics for Upper Canada offered a prize of £10 for the best essay on this subject, and that to this, a very elaborate and scientific description of the whole subject, was adjudged the first prize. We shall very likely refer to this work in a subsequent number. In the mean time we give below a summary of the results arrived at after a series of experiments on this matter by Principal Dawson, and to which honourable reference is made in the above essay:—

The facts above stated may be summed up as follows:

1. The insect deposits its eggs on the grain about the time when it is in flower, and usually in the evening.
2. The larva when hatched attaches itself to the young grain and prevents its growth.
3. When full grown it becomes stiff and torpid, and if left long enough falls to the ground.
4. It buries itself in the ground and thus passes the winter.
5. In July, it emerges from the ground as a perfect insect, in which state, if the weather be favourable, it seeks the growing wheat for the purpose of depositing the germs of a new brood.

Lastly, though there are many partial remedies, the only sure one is to cut early and destroy all the grubs found after threshing the grain. To ensure safety, this should be kept up as regularly as the washing of seed wheat to avoid smut.

SALTING OF BUTTER.—"The firkins are seasoned by frequent washing, and exposure to the air, or by scrubbing the firkin with salt and water boiled. It is then dried, and salt strewed on the surface, before the butter is put in. In the ordinary process of salting, after separating the buttermilk as completely as possible, salt in the proportion of about one ounce to a pound of butter is worked in thoroughly, so as to become incorporated with the mass; for if not equally mixed in every part, the butter will acquire two colours, or become 'pyety' or pinsowed.' The salt should be of the purest kind, well dried and broken down, but not completely pulverized. Bad salt will soon cause it to become rancid. The following preparation is recommended as better than salt alone."

"Two parts best salt, and one part each sugar and saltpetre, well mixed; one ounce to each pound of butter. Incorporate it thoroughly with the mass, and cless up for use."

"It will be necessary to keep butter thus prepared for two or three weeks after it is cured, before using; as otherwise it will not taste well; but if properly cured according to the above prescription, it will continue perfectly sweet for three years or more."

"After strewing salt on the bottom of the firkin, the butter may be pecked in, thoroughly moulding each layer into that beneath it. When the cask is full, more salt should be strewed on the surface, and the head put on. If the butter has been well freed from milk, and the salt moulded into it quite dry, it will not shrink from the cask. This is always regarded as one criterion of the goodness of the butter."

AGRICULTURE.

From the *Pictou Times Magazine*.

Among the various methods of improving the condition of Agriculture, suggested by the most enlightened modern agricultural writers, probably none is destined to perform so conspicuous and important a part as that denominated agricultural education. The public mind is now being turned, we should hope, in favour of this movement, and there are now in these Provinces, in the United States, and in various parts of Europe, gentlemen to be found possessing the very highest order of intellect, who are strongly impressed with the necessity of establishing a higher grade of Educational Institutions than are generally to be met with, for the education of farmer's sons, or those young men who have a desire to become thoroughly acquainted with the science as well as the practice of agriculture.

So far as the masses of mankind are concerned, the only opportunity that will be presented to them, for the education of their children, is the common school. These institutions, under efficient management, and with a liberal support from those whom they are intended to benefit, will exert a powerful influence on the future destinies of the country. To make them effectual in bringing about the good so much to be desired in a country so agricultural as this, it will be necessary that the teachers be thoroughly taught the principal rudiments of agricultural education. If the design of this institution, the Normal School at Truro, be fully carried out in practice, it will ultimately have a very salutary influence in elevating the character of common school education in this province.

As important as are the interests of common schools, and that of combining with those institutions, branches of studies, that from their nature would have a peculiar tendency in inspiring the agricultural youth of our land with a taste and proper reverence for agricultural pursuits; still, a higher order of agricultural instruction is quite as necessary to finish the education of a gentleman farmer, if we may be permitted to use the term—as Colleges and Universities are required to finish the education of young men, who aspire to the practice of the learned professions, Commerce, Engineering, or any other of the higher branches of learning. The period has at last arrived in the history of Nova Scotia, when the agriculturists as a body, feel that they have been neglected by those who ruled the destinies of this province in years past. All who reflect upon the subject, also find that this state of things must continue to exist to a considerable extent, so long as the education of their sons is confined as has been heretofore the case within the walls of common schools. We have at the present period a very large and respectable class of farmers in Nova Scotia, who are independent in their circumstances, and who are impressed with the necessity of liberally educating their sons and daughters, so that they may when they grow up, in point of education and refinement, be entitled to rank with the first families in our land. The farmer is the most useful, the most independent, and certainly should be the most liberally educated man in our country. All other interests are dependent on him. The farmers are the class and the only class that are capable of sustaining the human family, and also in maintaining our commercial and national credit. As trifling as our exports may appear, still without them we would be-

come a nation of commercial bankrupts in less than twelve months. And what would signify the amount of revenue that would accrue to government, if it were not for the large amount of foreign goods that are annually consumed by the agricultural classes? The amount collected from other classes, if they had not farmers to sustain them, would be comparatively insignificant, and would not be sufficient to maintain the national credit of the province a single month. Then the farmers above all other men should be educated, and as the routine of their operations on a farm are practical, and require a large amount of skill, and likewise science, to ward off the evils that so frequently prove disastrous to the crops, so the education which is imparted to the youth of our land, who aspire to this honorable profession, should be both practical and scientific, and especially of that character that would qualify them to perform the very important and responsible duties that they may be required to execute as farmers and statesmen.

We cannot yet find room either for our Agricultural Intelligence or our Horticultural Department.

INTERESTING GEOLOGICAL DISCOVERY.—Remains of a Thecodont Saurian have been found in one of the recently opened Coal Mines in the County of Pictou. A full description of these will be given in our next number.

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