

Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

Coloured covers/
Couverture de couleur

Coloured pages/
Pages de couleur

Covers damaged/
Couverture endommagée

Pages damaged/
Pages endommagées

Covers restored and/or laminated/
Couverture restaurée et/ou pelliculée

Pages restored and/or laminated/
Pages restaurées et/ou pelliculées

Cover title missing/
Le titre de couverture manque

Pages discoloured, stained or foxed/
Pages décolorées, tachetées ou piquées

Coloured maps/
Cartes géographiques en couleur

Pages detached/
Pages détachées

Coloured ink (i.e. other than blue or black)/
Encre de couleur (i.e. autre que bleue ou noire)

Showthrough/
Transparence

Coloured plates and/or illustrations/
Planches et/ou illustrations en couleur

Quality of print varies/
Qualité inégale de l'impression

Bound with other material/
Relié avec d'autres documents

Continuous pagination/
Pagination continue

Tight binding may cause shadows or distortion along interior margin/
La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure

Includes index(es)/
Comprend un (des) index

Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/
Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.

Title on header taken from:/
Le titre de l'en-tête provient:

Title page of issue/
Page de titre de la livraison

Caption of issue/
Titre de départ de la livraison

Masthead/
Générique (périodiques) de la livraison

Additional comments:/
Commentaires supplémentaires:

This item is filmed at the reduction ratio checked below/
Ce document est filmé au taux de réduction indiqué ci-dessous.

| | | | | | | | | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-------------------------------------|--------------------------|--------------------------|--------------------------|
| 10X | 12X | 14X | 16X | 18X | 20X | 22X | 24X | 26X | 28X | 30X | 32X |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

THE JOURNAL OF EDUCATION AND AGRICULTURE,



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

FOR THE PROVINCE OF NOVA SCOTIA.

TABLE OF CONTENTS.

| EDUCATIONAL DEPARTMENT. | | PAGE. | | | PAGE. |
|---|--|-------|---|--|-------|
| Biographical Sketch of Henry Barnard, | | 49 | Baden, | | 58 |
| II. PRACTICE OF EDUCATION.—Writing, | | 51 | Wirttemberg, | | 59 |
| School Government—Incentives to Study—Emulation, | | 53 | Bavaria, | | 60 |
| III. OFFICIAL NOTICES.—Close of Summer Term of Normal School, | | 54 | AGRICULTURAL DEPARTMENT. | | |
| Statement respecting the P. Normal School, | | 55 | I. THEORY OF AGRICULTURE.—Vegetable Physiology, | | 60 |
| IV. EDUCATIONAL INTELLIGENCE.—England:—The Educational Grant, | | 56 | II. PRACTICE OF AGRICULTURE.—Manuring Grass Lands, | | 61 |
| Educational Systems of Germany—Saxony, | | 68 | Culture of Barley, | | 62 |
| | | | Gathering and Preserving Fruit, | | 62 |
| | | | III. AGRICULTURAL INTELLIGENCE.—Returns to Circulars, | | 62 |
| | | | ADVERTISEMENTS, | | 64 |

Vol. II.

Halifax, Nova Scotia, October, 1859.

No. 4.

EDUCATIONAL.

BIOGRAPHICAL SKETCH OF HENRY BARNARD.

The Grecian Alexander, and others who, like him, subverted empires, laid waste flourishing countries and pillaged cities, leaving behind them desolation, misery, and death, have been styled *great* by the admirers of their monstrous deeds. True greatness never marks its path with human wretchedness. It does not feed upon the ruined fortunes and crushed hopes of fellow-beings, but thrives most, and becomes most magnanimous, when it sacrifices most for the good of others. It drinks in largely of that spirit which "seeks not its own," but looks abroad upon "the things of others," deeming its most illustrious and self-satisfying acts, not those which bring the largest revenue of selfish gain and glory, but those which tend most to the happiness and well-being of the human race. In this class we would rank those whose whole souls are engaged and whose lives and fortunes have been spent in the cause of Education. Happy is the land which can boast a long array of such worthies. How does New England rejoice in the strivings, the sacrifices, and the achievements of her noble band of educational he-

roes! Conspicuous among these, stands Barnard, a noble son of Connecticut. His very portrait, which lies before us, indicates perseverance, magnanimity, and goodness.

Henry Barnard was born in the year 1811, and after receiving his early education at the district school, where he became experimentally acquainted with the defects of the common school system, he attended Yale College, at which he graduated in 1830. On leaving college he commenced the study of law, and was admitted as attorney and counselor, in his native state, in 1835. Before commencing the practice of his profession, he visited Europe, where he availed himself of every means to acquire useful information. He returned with enlarged views in relation to the duties of the American citizen. He saw that the prosperity of his country with its democratic institutions, was inseparably connected with the sound education of the people at large. As he loved his country, he felt that he must not live for himself alone, and his motto, as expressed in his own words was, "Every man must at once make himself as good and as useful as he can, and help at the same time to make every one about him, and all whom he can reach, better and happier." It was such high-toned principles as these, which led him, after years of diligent preparation, to lay aside a profession, from which, with his talent and learning, he could reasonably expect to gain distinction and wealth, and enlist his energies in the cause of common schools.

After holding a seat in the Legislative Halls of Connecticut for three years, where he became instrumental in the appointment of a Board of Commissioners of common schools, he abandoned his profession and banished from his mind the promptings of political ambition, and went forth to labor, with all his might, in the field of Education, as Secretary to the Board. He held this office during four years and it is a substantial evidence that he made it no sinecure, that, whilst engaged in the faithful discharge of its duties, visiting schools, enquiring into their condition, and suggesting improvements, delivering lectures, holding Teachers' Institutes, &c., he spent out of his private funds, for the promotion of the cause of Education in Connecticut, a sum nearly equal to his salary.

Neither the Educational Board nor Barnard possessed any power to change the educational law or system in practice; their duties were to collect information in relation to the existing condition of the common schools, to disseminate sound views, to awaken the public mind to the importance of educational reform, and to enlighten it with respect to what the character of the reform should be. The necessity for the establishment of a Normal School for the training of teachers was distinctly perceived, yet it was considered premature to establish such an institution before it could command popular sympathy and favor.

The result of Mr Barnard's investigations, showed a long list of evils. Teachers were poorly qualified for their duties, and still more inadequately remunerated; children were late and irregular in their attendance; school houses and furniture inconvenient and out of repair; there was total lack of uniformity in school books; schools were often discontinued in the winter season for want of fuel; a deplorable apathy with respect to the whole question of education, prevailed in the public mind, and it was the general impression that no improvements were necessary.

It would occupy more space than we can devote, to enumerate all the varied inquiries of the highest moment, in relation to the internal and external condition of education, which were instituted by Mr Barnard. The following are the general heads upon which interrogations were made:—

"Name, territorial condition, population, and pecuniary resources of the District; School Premises, including general questions, site, school house, apparatus and library; The School,—general questions, the teacher, attendance, classification, course of instruction in the physical, intellectual, moral, æsthetic, and industrial departments; Studies and text-books; Methods; Spelling; Reading; Composition; Grammar; Arithmetic; Penmanship; Geography; History; Drawing; Music; Government; Examination; Parental and public interest; Other means of popular education."

From these various subjects we select one, that of Government, and subjoin the particular questions, most of which, every teacher in every land may, with advantage, propose to himself:—

"1. Do you enter on your duties in the school-room in the right spirit, in good health, and with the right preparation for the work?"

"2. Do you aim to make your children love you, by exhibiting a strong sympathy in their pursuits, and a fondness for their company?"

"3. Do you attend strictly to punctuality, regularity, and order, in your own duties?"

"4. Do you perform your work with animation, exercise constant patience, and never lose your temper?"

"5. Do you exhibit firmness, impartiality, kindness, and parental regard, toward your scholars?"

"6. Do you see that your pupils are all properly seated, and every way physically comfortable, as to light, air, and temperature?"

"7. Do you see that all your children, at all times, have something to do, and a motive for doing it?"

"8. Do you make order, quietness, and obedience, the habit of your school?"

"9. Do you aim to enlist the affection and activity of the older pupils in doing good to you and the school?"

"10. Do you give rewards, &c.?"

"11. What punishments are inflicted, &c.?"

"12. If corporal punishment is inflicted, what is the instrument used, &c.?"

"13. Are you careful to avoid a spirit of fault-finding, &c.?"

"14. Are you careful to administer rebuke more in sorrow than in anger, &c.?"

"15. Do you try to secure the co-operation of parents in the government of the school?"

"16. Have you had cases of thoroughly incorrigible pupils? If so, what did you do with them?"

"17. Do you find that emulation, or the desire of surpassing, can be employed as a motive to study, and good behaviour, without stirring up jealousy, envy, &c.?"

"18. Are your rewards bestowed mainly for evidence of intellectual capacity, or for habitual industry, &c.?"

"19. Are your punishments unmixed with exhibitions of personal feelings, as anger, scorn, &c.?"

"20. Do you pay proper regard to the physical condition of the culprit, such as a disordered nervous system, natural irritability and restlessness of temperament, or debility of body, in administering punishment?"

"21. Have you observed that punishment is effectual in proportion to its certainty more than to its severity? and more from the manner than the frequency?"

One would suppose that if greatness of soul, self-sacrifice for the public good, purity of motives, and acts of usefulness could raise a man above the storms of party, the evil surmises and cavils of the narrow-minded and prejudiced, and secure him from the animosities and rancor of enemies, Barnard would have been hailed by all as a public benefactor. But it was far otherwise. The State Legislature annihilated, in 1842, the office which he held, as one which entailed heavy expenses on the state and yielded no proportionate beneficial results. We cannot contemplate this interruption of his labors of love, but with wonder and reprobation. Yet the feelings displayed by the politicians of Connecticut are by no means anomalous. Whilst professing to be the conservators and the promoters of the public good, with high trusts reposed in them and weighty responsibilities resting upon them, we too frequently find unscrupulous statesmen and driveling politicians impugning motives too pure to find a response in their own breasts, and striving to bring into reproach or ruthlessly to overturn institutions, and set aside men, whose sole aim and influence is the public good and whose highest crime is their unflinching adherence to the promotion of their object. Not to pander to the lust for power which reigns predominant in the breasts of such characters, is sufficient crime to draw forth a sentence of proscription from their tribunal, which no amount of inherent excellence and instrumentality in the public good, can avert or mitigate.

The motto of politicians is alas, too often, "Myself, Myself!" O that it were always, "My Country!" What a bright day if all were like the patriotic admiral who, though a zealous republican, pursued and fought the enemies of England in the days of the despotic Protector, "I fight not for Cromwell," said he, "but for my country."

(To be Continued.)

II.—PRACTICE OF EDUCATION.

WRITING.

The following extract on the teaching of Penmanship is from a Treatise "on School Management" recently published by the Head Master of the Glasgow Normal School. It embraces, in our apprehension, all that is valuable and useful in Mulhauser's System, as well as in other modern improvements. We cordially recommend its perusal, and, in as far as it is practicable, its adoption by the Teachers of the Province. This, we fear, is a matter too little attended to by many.

METHOD.

Three things go to constitute good writing:—the form of the letter,—their inclination,—and the distances between them. If any of these things is overlooked, the writing, to that extent, will be defective. Now in order to the acquisition of these three things, it is obviously necessary that some method, based on natural principles, be adopted. The mere blind imitation of examples may, in the case of a boy who has a steady hand and a good eye, lead him to write well; but the good writing, in such a case, will be the result of accident, and the acquisition of it will only serve to develop the boy's power of imitation, without calling into exercise any of the higher faculties of his mind. But with many, who do not possess the faculty of imitation in any strong degree, and who see in writing only so many unmeaning lines, the hour set apart to writing is dull and monotonous, and their great desire is to have the prescribed page filled up as speedily as possible. Nor can it well be otherwise when we remember that work, which does not exercise the understanding, possesses no charms for the young. Teachers at the outset of their career are apt to forget this; and hence, too often, they consider it quite sufficient to occupy their pupils, without observing whether or not the occupation is fitted to lead them to reflect on what they are doing. This holds true very specially of writing. The pupils are arranged at the desks, their writing books are given out, a pattern is set before them, and they are left to imitate it as best they may. The consequence is that the writing rapidly degenerates as it nears the bottom of the page; for the scholars, when they have written one line, set themselves to imitate their own writing, instead of the copy which has been set before them. Not only is this the case, but it almost always happens that the pupils have no adequate idea of what is required of them. Why a certain letter rises above the line a certain distance and no more, why one occupies more space than another, are matters with which they never trouble themselves; or should a boy whose mind desiderates reasons for what he does, make any enquiry into the principles which ought to guide him, he is rudely interrupted and told to imitate what is set before him. But writing is no mystic art which refuses to give up its secrets to the anxious enquirer; it follows laws well defined and easily comprehended by the meanest capacity; it appeals not only to the eye and the hand, but to the understanding and the memory, and only when these are taken into the account can we expect writing to assume in our schools the place which is due to it, and to receive that amount of attention without which there cannot be, except in accidental cases, good writing. To any one who examines with any degree of attention the written characters of our language, it will be evident that these characters can be analysed into a very few simple elements, and that all our letters are made up of simple modifications of these elements.—Such being the case, it would seem to be the natural method of teaching to write, to commence with analysis. The complex written characters should be analysed into their elementary parts; these elements should be arranged in the order of their complexity, and thus presented to the child, who, in reconstructing them, learns to write. The self-same principles which we endeavoured to establish when treating of reading, should, *mutatis mutandis*, be applied to writing. The simple should always precede the complex, and the knowledge which

the child possesses should be made the stepping-stone to further attainments. The known should always go before the unknown; what the child knows, either by natural or mental vision, should be laid hold of as the hand to guide him to what he does not know.

ANALYSIS OF OUR WRITTEN CHARACTERS.

Such being the natural method by which our knowledge is attained, it is obviously the teacher's first duty to make himself thoroughly acquainted with the elements which go to compose the written characters of our language, and with their classification in the order of their complexity. For the following observations on this subject, we are mainly indebted to the "Manual of Writing" by Mulhauser, who was the first to give a complete analysis of the written characters. We can only make one or two brief remarks, and must refer the reader for a fuller discussion of the subject to the manual itself, merely reminding him that, while he will meet with many things worthy of his attention, he will also find much which is both useless and impracticable. The hand in writing has four principal motions:—

1. The downward motion /
2. The upward motion \
3. The motion from right to left (
4. The motion from left to right)

From these four motions there result two sorts of lines,

1. The right line / /
2. The curved line ()

These two sorts of lines supply us with the four elements of letters; viz:—

1. The right line /
2. The curve line (
3. The loop ; h
4. The crotchet ,

With one or two slight modifications, we can resolve all the written characters in our language into these four elements. For the purpose of joining right lines to one another, we have recourse to what are termed the *hook* and the *link*, both of which are seen in the written character *m*, the hook at the beginning, and the link at the end of the letter.

CLASSIFICATION OF OUR WRITTEN CHARACTERS.

Having thus analysed the characters used in writing, the next step is their arrangement in the order of their complexity, and we have

1. The letters formed of the right line and the link, viz:—
i, u, t, l.
2. The letters formed of the right line, the hook and the link, viz:—*n, m, h, p.*
3. The letters formed of the curve, viz:—*o, e, a.*
4. The letters formed of the curve and of the right line, viz:—*a, d, g.*
5. The letters formed of the loop, viz:—*j, q, y.*
6. The crotchet letters, viz:—*l, f, v, w, r.*
7. The complex letters, viz:—*h, s, x, z.*

THE HEIGHT OF THE LETTERS.

Not only must the teacher be thus able to analyse the letters into their elements, he must also know their relative heights. All the letters are not of the same height, and in order to make this clear, we shall give a more particular analysis of each letter, in the order in which they are placed in the last paragraph. For the sake of explicitness, let us call the space between three horizontal lines \equiv a height. According as a letter passes above or below these three parallels, it is one height and a half, two heights, two heights and a half or three heights. To indicate that the line passes below these three parallels, we may use the word *down*. The *absolute* height of the letters will depend upon the size of the hand

which the pupil is required to write; we use the expression for the purpose of fixing their *relative heights*. With these explanations, and requesting the reader to rule a page of paper and write the letters as he proceeds, we present the following analysis:—

The hook commences at the half height.

The link terminates at the half height.

i is composed of a right line and link.

u of right line, link; right line, link.

t of right line, height and a half; link, bar.

l right line two heights, link.

h hook, right line; hook, right line, link.

m hook, right line; hook, right line; hook, right line, link.

n right line, two heights; hook, right line, link.

p right line, two heights and a half, one height down; hook, right line, link.

o curve, (the dot at the commencement beginning at one fourth the height,) link.

e loop, (a very narrow oval, united to the curve a little above the last height,) curve, link.

o the chief elements of this letter are two curves, the one from right to left, the other from left to right, the second curve being a fine line.

a double curve, right line, link. The right line is united to the curve at one fourth of the height, and leaves it on passing the half height.

d double curve, right line, two heights, link.

y double curve, right line, two heights down; this letter is united to the one which follows it by a stroke like the link, proceeding from the half height.

j right line two heights down, loop, half link. The loop ends in ascending at one height and a quarter down.

g double curve, right line two heights down, loop, half link.

z hook, right line, link; right line two heights down, loop, half link.

c right line two heights, link, crotchet.

f loop one height above, right line three heights, one height down, crotchet.

s hook, right line, crotchet.

v hook, right line, link, crotchet.

w right line, link, right line, link, crotchet.

The analysis of the complex letters cannot be made very clear without models. Let the reader examine carefully any good model and he will at once see how they may be analysed.—From the foregoing analysis it will be evident that all the letters maintain a certain relative height in regard to each other, and that, unless this relation in the height of the letters be preserved, the writing cannot be good. It is only when all the letters are of the exact height, that the writing will present that symmetry of form which is so essential in good writing. It will also be evident that children can, without any great difficulty, be made to know the relative heights of the letters, and thus at once correct their own mistakes in that respect.

THE INCLINATION AND DISTANCES OF THE LETTERS.

But the letters must not only be of the proper height, they must also be properly inclined, and placed at proper distances from each other. The inclination for all the letters is the same; but, while this is the case, we are not aware that there

is one uniform standard of inclination. This may depend much on the taste of the master; the point to be specially attended to being that, when the first letter has received a given inclination, all the others must be regulated by it. Hence an easy rule can be laid down whereby children may for themselves detect to what extent they have adhered to the prescribed form. We shall have occasion immediately to point out some of the aids which may be employed in assisting children to acquire the various essentials of good writing. In addition, however, to a proper inclination of the letters, good writing requires that they be placed at proper distances from each other, and that each letter occupy a space exactly proportioned to its size, without which its correct form cannot be given. Let us call the distance between two right lines a *space*, and let this distance be equal to *half the height*; then "letters formed of the right line and link should occupy one space. Between letters formed by a link and a hook there is one space and a half. Between letters composed of curves, there is only a half space. The letters *c* and *e* take up each a space and a half; but when the link of either of these letters is united to a letter commencing with a hook, there are two spaces between the curve of the *c* or *e* and the right line of the succeeding letter. The letter *o* is separated by a whole space, whether it goes before or follows a right line. The loop forms a very narrow oval. Its width is three fourths of a space. In regard to the crotchet letters, there is a space and a half between the leg or right line of the letter *r*, and the letter which follows it. When *b*, *v*, and *w*, are united to curve letters there is only one half space between them; but, when united to right lines, they are separated by one whole space."

WRITING DESK.

Having thus analysed and classified the letters in the order of their complexity, and having indicated, in very general terms, their height, inclination, and distance, we are now in a position to teach children to recombine them, and by this very exercise, as we have already remarked, they learn the art of writing. But in order to their writing, various other things are necessary, and these we shall now briefly consider. And first in order is the arrangement of the classes. As pointed out in the chapter on organization, it is exceedingly desirable to have the writing desks arranged along the length of the school, rising slightly the one above the other, and so constructed that all the pupils face in one direction. The advantage of this is that the master can give a general lesson on the black board to the whole class at once, can make the correction of one individual's fault the means of calling the attention of all to the cause of the fault, and may thus save much precious time and much unnecessary trouble. Along the top of the desk there should run a narrow ledge for holding the ink-bottles, which ought, in all cases, to be fixed, so as to prevent the possibility of the ink being spilled. The leaf of the desk should have a very slight inclination, and to prevent the writing-book from slipping off, a bending of wood should run along its lower extremity. This bending should be so thin as not to incommode the arm when resting it. It would also be desirable to have each pupil's place at the desk marked off by a stripe of paint; this would prevent confusion, as no boy could have any excuse for trespassing on his neighbour's ground. The height of the desks will, of course, depend upon the size of the scholars; but it is of great importance to have them neither too high nor too low; for, unless the children feel quite comfortable when seated, they cannot write well.—For the same reason, there should be a foot-board, on which the feet of the scholars may rest when writing, to prevent them from swinging backwards and forwards; for "the position of the feet determines that of the body, and this latter determines the character of the writing, its inclination, and its regularity; the pupils require, therefore, a resting place at a convenient height. To move the feet is so natural, and yet so injurious to good writing, that considerable vigilance will be required to prevent this motion."

* Mülhauer's "Manual of Writing"

(To be Continued.)

SCHOOL GOVERNMENT—INCENTIVES TO STUDY—EMULATION.

Is the outline already given of this subject, we showed that, in our apprehension, it takes a much wider range than is generally assigned to it, embracing not merely all matters appertaining to obedience and good order, but to diligence and perseverance in study. Indeed, we hold that these two requisites of school management are inseparable, and that in very proportion to the interest infused into the minds of the scholars in reference to their lessons, will the whole matter of good government be facilitated and promoted.

We now proceed to discuss the whole subject in detail, commencing with the various incentives to study, what constitutes the proper and what the improper motives to diligent application. And now a question arises at the very outset, Is it right or proper to ply the *principle of emulation*, in the prosecution of study? Instead of answering this question in our own words, we present to our readers the statement of *Page* on this point, with which we most thoroughly sympathize:—

The teacher will find in a greater or less degree, in the mind of every child, the principle of EMULATION. It is a question very much debated of late, *What shall he do with it?* Much has been said and written on this question, and the ablest minds, both of past ages and the present, have given us their conclusions respecting it; and it often increases the perplexity of the young teacher to find the widest difference of opinion on this subject among men upon whom in other things he would confidently rely for guidance. Why, asks he, why is this? Is there no such thing as truth in this matter? or have these men misunderstood each other? When they have written with so much ability and so much earnestness,—some zealously recommending emulation as a safe and desirable principle to be encouraged in the young, and others as warmly denouncing it as altogether unworthy and improper.—have they been thinking of the *same thing*? Thus perplexed with conflicting opinions, he is thrown back upon his own reflection for a decision; or what is more common, he endeavors to find the truth by *experimenting* upon his pupils. He tries one course for one term, and a different one the next; repeats both during the third, and still finds himself unsettled as he commences the fourth. Meantime some of his experiments have wrought out a lasting injury upon the minds of his pupils; for, if every teacher must settle every doubt by new experiments upon his classes, the progress that is made in the science and art of teaching must be at the untold expense of each new set of children;—just as if the young doctor could take nothing as settled by the experience of his predecessors, but must try over again for himself the effect of all the various medical agents, in order to decide whether arsenic does corrode the stomach and produce death, —whether cantharides can be best applied inwardly or outwardly,—whether mercury is most salutary when administered in ounces or grains, or whether repletion or abstinence is preferable in a fever! When such is the course of a young practitioner in a community, who does not confidently expect the churchyard soon to become the most populous district, and the sexton to be the most thrifty personage in the village, unless indeed he too should become the subject of experiment? But is there not a good sense and a bad sense, associated with the term Emulation;—and have not these eager disputants fallen into the same error, in this matter, that the two knights committed, when they immolated each other in a contest about the question whether a shield was gold or silver, when each had seen but one side of it? I incline to the opinion that this is the case,—and that those who wax so warm in this contest, would do well to give us at the outset a careful definition of the term EMULATION, as they intend to use it. This would perhaps save themselves a great deal of toil, and their readers a great deal of perplexity.

Now it seems to me the truth on this question lies within a nutshell. 1. If emulation means a *desire for improvement, progress, growth*,—an ardent wish to rise above one's present condition or attainments,—or even an aspiration to attain to eminence in the school or in the world, it is a laudable motive. *This is self-emulation.* It presses the individual on to surpass himself. It compares his present condition with what he would be—with what he ought to be; and “forgetting those things which are behind, and reaching forth unto those things which are before, he presses towards the mark for the prize.” “An ardor kindled by the praiseworthy examples of others, inciting to imitate them, or to equal, or even excel them, without the desire of depressing them,”* is the sense in which the apostle uses the term [Romans xi. 14] when he says: “*If by any means I may provoke to emulation them which are my flesh, and might save some of them.*” If this be the meaning of emulation, it is every way a worthy principle to be appealed to in school. This principle exists to a greater or less extent in the mind of every child, and may very safely be strengthened by being called by the teacher into lively exercise; provided always, that the eminence is sought from a desire to be useful, and not from a desire of self-glorification.

2. But if emulation, on the other hand, means a *desire of surpassing others, for the sake of surpassing them*; if it be a disposition that will cause an individual to be as well satisfied with the highest place, whether he has risen above his fellows by his intrinsic well-doing, or they have fallen below him by their neglect; if it puts him in such a relation to others that their failures will be as gratifying to him as his own success; if it be a principle that prompts the secret wish in the child that others may miss their lessons, in order to give him an opportunity to gain applause by a contrast with their abasement,—then, without doubt it is an unworthy and unhealthy principle, and should never be encouraged or appealed to by the teacher. It has no similitude to that spirit which prompts a man to “love his neighbor as himself.” It has none of that generosity which rejoices in the success of others. Carried out in after life, it becomes ambition, such as fired the breast of a Napoleon, who sought a throne for himself, though he waded through the blood of millions to obtain it.

It is to this principle that the apostle, before quoted, alludes, when he classes emulation with the “works of the flesh,” which are these: “adultery, fornication, uncleanness, lasciviousness, idolatry, witchcraft, hatred, variance, ENULATION, wrath, strife, seditions, &c.,—of the which things, I tell you before, as I have told you in times past, that they which do such things shall not inherit the kingdom of God.” It is of this principle that the commentator, Scott, remarks: “This thirst for human applause has caused more horrible violations of the law of love, and done more to desolate the earth, than even the grossest sensuality ever did.”

Thus Emulation is a term which indicates a very good or very bad thing, according to the definition we give it. In one view of it, the warmest aspirings to rise are consistent with a generous wish that others may rise also. It is even compatible with a heartfelt satisfaction in its possessor, at the progress of others, though they should outstrip him in his upward course. It is the spirit which actuates all true Christians, as they wend their way heavenward, rejoicing the more as they find the way is thronged with those who hope to gain an immortal crown.

In the other view of it, we see men actuated by selfishness mingled with pride, inquiring, in the spirit of those mentioned in scripture, “Who among us shall be the greatest?” We everywhere see men violating these sacred injunctions of divine wisdom: “Let no man seek his own, but every man another's wealth.” “Let nothing be done through strife or vain glory; but in lowliness of mind, let each esteem other better than themselves;”—“In honor preferring one another.”

If such be the true pictures of emulation, in both the good

* Dr. Webster.

and the bad sense, certainly teachers cannot hesitate a moment as to their duty. They may appeal to the principle first described,—cultivate and strengthen it; and in so doing, they may be sure they are doing a good work. But unless they intend to violate the teachings of common sense, and the higher teachings of Christianity, I know not how they can appeal to the principle of emulation as defined in the second case.

But it may be urged that the teacher will find emulation, even in this latter sense, existing in human nature; that he cannot get rid of it if he will; that it will be one of the most active principles to which he can resort in arousing the mind to exertion; and, furthermore, that it has been appealed to by many of the most eminent teachers time out of mind.

To this it is replied, that it is not disputed that children are selfish; and that this selfishness may indeed be made a powerful instrumentality in urging them forward to the attainment of a temporary end. But does the existence of selfishness prove that it needs cultivation in the human character? And will the end, when attained, justify the means? Is the end, whatever it may be, if attained at such a cost, a blessing to be desired? Will not the heart suffer more than the head will gain?

It may be further urged, that the child will find the world full of this principle when he leaves the school; and why, it is asked, should he at school be thrown into an unnatural position? I answer that evil is not to be overcome by making evil more prevalent,—and though there may be too much of self-seeking in the world, that is the very reason why the teacher should not encourage its growth. The more true Christianity prevails in the world, the less there will be of that spirit which rejoices at another's halting; hence I am convinced the teacher should do nothing to make that spirit more prevalent.

Nor is it essential to the progress of the pupil even temporarily, since there are other and worthier principles which can be as successfully called into action. If we look carefully at the expediency of thus stimulating the mind, we find that after the first trial of strength, many become disheartened and fall behind in despair. It will soon be obvious, in a class of twenty, who are the few that will be likely to surpass all others; and therefore all the others, as a matter of course, fall back into envy, perhaps into hopeless indifference. Who has not seen this in a class in spelling, for instance, where the strife was for the "head" of the class, but where all but two or three were quite as well satisfied with being at the "foot?" It does not then accomplish the purpose for which it is employed; and since those who are aroused by it, are even more injured than those who are in dissent, their undesirable qualities being thus strengthened, the opinion is entertained that those teachers are the most wise, who bend their ingenuity to find some other means to awaken the minds of the children under their charge.

From what has been said, then, *Emulation* is to be recognised or repudiated among the incentives of the schoolroom, according to the signification we assign to the term.

III.—OFFICIAL NOTICES.

CLOSE OF SUMMER TERM OF NORMAL SCHOOL.

THE close of another Term of this Institution took place on the last week of September. The season thus terminated is the seventh since the commencement of the Institution, and, we believe, that, on no former occasion, did the Pupil-Teachers, as a whole, evince the same amount of scholarship and professional qualification. This, we think, ought to be a

source of satisfaction and gratification to every friend of education throughout the Province, holding out, as it does, the encouraging prospect of a higher style of education in our Common Schools. Perhaps one cause of this marked general improvement is the fact that a greater number than before of the students in attendance had been educated, at least to a certain extent, by Graduates of the Normal School. This is a cheering consideration, and will, every succeeding Term, be more beneficially felt, alike by the Normal School, and the general style of education throughout the country.

The concluding services of this Term were the same as usual, and as described in the fourth number of the *Journal of Education*. The attendance of visitors was as large as heretofore, every available inch of room being occupied.—Among the other gentlemen present, we observed the Rev. Dr. Smith, Rev. Professor Ross, Rev. Messrs. McCulloch and Davis, Messrs. Adams G. Archibald and S. Creelmann, Commissioners of Normal School—Andrew Mackinlay, Esq., Halifax, who kindly offered a scholarship, of £5 to the student of next Term, possessed, in the estimation of the Principal, of the highest merit. After the Principal had read the list of the Graduates of this Term, and delivered his valedictory address, several gentlemen spoke in complimentary terms of all they had witnessed during the whole of these services. Thereafter, Mr. Simcoe Sykes, of Yarmouth, in name of his fellow-students, came forward and presented an Address to the Principal and the other Teachers of the Institution, expressive of their gratitude for all the kind interest manifested in their welfare during the whole season now at a close, and of their determination to carry out, in their respective spheres, those important educational principles in which they had been instructed, and which, in the Model-schools, they had seen exemplified.—To this address Dr. Forrester made a suitable reply. These services being over, and the Principal having intimated that the next session of the Normal School would commence on the second Wednesday of November next, dismissed the assembly by praise and pronouncing the benediction.

The following is a list of the Pupil-Teachers who gained Diplomas at the end of the Summer Term of 1859:—

GRAMMAR SCHOOL DIPLOMA.

Mr. Nicholas Smith, . . . Queen's County,
Samuel Raymond, . . . Yarmouth.

FIRST CLASS DIPLOMA.

Ladies.

Miss Jane Gow, . . . Lunenburg,
Emma Homer, . . . Shelburne,
Elizabeth Thomson, . . . Hants,
Letitia Crowell, . . . Shelburne,
Mrs. Hill, . . . Digby,
Miss Mary Revett, . . . Halifax.

Gentlemen.

Mr. A. Hiltz, . . . Lunenburg,
Donald McLeod, . . . Cumberland,
Duncan Duff, . . . Hants,
Charles Kehnoth, . . . Lunenburg,
Frederick Lawrence, . . . Inverness, C. B.
J. Blackadar, . . . Yarmouth,
Charles Darby, . . . Yarmouth,
Samuel Archibald, . . . Colchester,
Nathaniel Hebb, . . . Lunenburg,
Richmond McCurdy, . . . Colchester.

SECOND CLASS DIPLOMA.

Ladies.

| | |
|----------------------------------|-------------|
| Miss Charlotte Fletcher, | Colchester, |
| Esther Barnhill, | Colchester, |
| Jessie Baxter, | Colchester, |
| Annie Green, | Halifax, |
| Janet Chipman, | Colchester, |
| Ellen Keiller, | Colchester, |
| Charity Snadden, | Halifax, |
| Elmina Coxe, | Colchester, |
| Louisa Wilson, | Shellburne, |
| M. A. Kirkwood, | Pictou, |
| Marie S. Corbett, | Annapolis, |
| Janet Mattheison, | Cumberland, |
| Elizabeth Lander, | Pictou, |
| Louisa Crowell, | Shellburne, |
| Isabella Kent, | Halifax, |
| Harriet G. O'Brien, | Hants. |

Gentlemen.

| | |
|--------------------------|------------------|
| Mr. J. Christie, | Colchester, |
| M. McKinnon, | Inverness, C. B. |
| J. A. Morse, | Annapolis, |
| A. Gayton, | Yarmouth, |
| Daniel Keiser, | Lunenburg, |
| Reuben Raymond, | Yarmouth, |
| Simoon Sykes, | Yarmouth, |
| Benjamin Rogers, | Yarmouth, |
| G. A. Frost, | Yarmouth, |
| G. R. Downing, | Colchester, |
| G. A. Kent, | Colchester, |
| Samuel O'Brien, | Hants. |

The following Ladies and Gentlemen were noticed as having made excellent progress, but, in consequence of their deficiencies in scholarship when they entered, as having not yet reached the requisite attainments to entitle them to a Second Class Diploma, viz. :—

| | |
|-----------------------------|------------------|
| Miss Maggie Walker, | Colchester, |
| Fanny Fisher, | Colchester, |
| Ellen Page, | Cumberland, |
| E. J. Crowdie, | Victoria, C. B. |
| Annie Leake, | Cumberland, |
| — Bremner, | Halifax, |
| Mrs. McLennan, | Inverness, C. B. |
| Mr. William McNab, | Colchester, |
| Samuel Sperrie, | Lunenburg. |

TEACHERS' INSTITUTES.—The Superintendent of Education will hold Teachers' Institutes at the following places and dates:—At Halifax on Saturday, the 8th October, for the Teachers within the bounds of the Board of the City of Halifax and of Western Halifax; at Kentville on Saturday, the 15th do.; at Windsor on Saturday, the 22nd do.; at Amherst on Saturday, the 29th; and at Parrsboro' on Saturday, the 5th November. It is earnestly solicited that all the Teachers within the bounds of these Boards attend these meetings.—The Clerks of the different Boards will give due intimation of the hour and place of meeting.

STATEMENT RESPECTING THE PROVINCIAL NORMAL SCHOOL.

Notwithstanding all the efforts we have made to diffuse information regarding the proceedings and workings of this Institution it appears from the notes of enquiry we are almost every week receiving, that no small amount of ignorance still prevails. On this account we have felt it to be our duty to draw out a sort of programme of its more prominent features and operations, which we purpose inserting in several numbers of this Journal, in the hope that we shall thereby save ourselves much time and labour in correspondence.

OBJECT OF NORMAL SCHOOL.

The object of this Institution is to qualify those who intend to devote their time and energies to the education of the young for a more efficient discharge of their duties; and this is done in two ways, first, by more accurate and extensive attainment in all the branches of a common and more advanced education, and secondly, by an acquaintance both theoretical and practical with that system of education generally designated the Natural or Training System.

SUMMER AND WINTER TERMS.

There are two Terms in the year, the Summer and Winter, the former commencing on the second Wednesday of May and finishing on the last Thursday of September, the latter commencing on the second Wednesday of November and finishing on the last Thursday of March. In Summer the School meets at 8 o'clock, A. M. and closes at 3 o'clock P. M., and in Winter at 9 o'clock A. M. and closes at 4 o'clock P. M., with an hour's interval. None are admitted later than a week after the commencement of each Term. Licensed Teachers may attend as spectators, but they cannot graduate unless they enrol as regular pupils, and attend the whole Term.

ADMISSION OF PUPIL TEACHERS.

Each Board of School Commissioners has 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 Treasurer. The Principal may admit twenty additional Pupil Teachers on their being examined and taking the necessary pledge. All licensed Teachers are admitted. The Principal may admit ten pupils, not intending to teach in this Province, at such rate of fees as he may think proper, (£2 per Term is the fee charged.) None are admitted save those above sixteen years of age, and who are able to stand a satisfactory examination in Reading, Spelling, the simple rules of Arithmetic, the elements of Geography and of English Grammar.

All regular Pupil Teachers, when enrolled, declare it to be their intention to devote themselves to the profession of teaching within the Province for three years at least.

COST OF ATTENDANCE AT NORMAL SCHOOL.

Instruction and the use of Text Books are free to all Pupil Teachers.

Boards of School Commissioners are required to pay the travelling expenses of the Pupil Teachers they recommend, to and from the Normal School, at the rate of 3s. per mile.

The Pupil Teachers have nothing to pay save Board and Lodging, which they may obtain in and around the village of Truro from 8s. to 15s. per week. The whole actual cost of Term will thus be about £10.

TEACHERS OF NORMAL SCHOOL.

Principal and Lecturer on Professional Department and Natural Science, Rev. A. Forrester, D. D.; English and Classical Department, C. D. Randall, Esq; Mathematics, Natural Philosophy, &c., W. R. Mulholland, Esq; Theory and Practice of Music, Professor Williams.

COURSE OF STUDY PURSUED.

English and Classical Department.—All the Branches of an English Education commencing with the very elements and proceeding to the more advanced,—such as Reading, Spelling, English Grammar, Composition, Geography in all its branches, History, Astronomy—Classics, from Grammar up to the highest Classical Authors, according to the nature of the Diplomas for which the Pupil Teachers intend to compete. French is also taught. Books used in English—Irish National Series, Read's Composition, MSS. Lectures by Master—Classics, Latin and Greek Grammar of Edinburgh Academy, with Doletus—Aubon's Edition of Classics—Ahu's French Grammar.

Mathematical Department. Drawing and Penmanship—Mental and Slate Arithmetic, Geometry, Algebra, Use of Globes—Outline Lectures on Natural Philosophy. Books used—National Series, Thomson's Arithmetic, Euclid's Geometry, Chambers' Algebra—MSS. Lectures by Master.

Professional Department.—Course of Lectures on Teaching as a Calling or Profession, embracing the What, the How, the Who and the Wherewithal, or the Science, the Practice, the School-Master, and the whole support of this branch of the public service.

Under the Science of Education, after presenting an outline of the whole, the Physical, Intellectual and Moral Education of the young is discussed in all its aspects and bearings, in connection with a regular Course of Lectures on Animal Physiology, on Intellectual and Moral Philosophy.

The How embraces everything appertaining to the Practice of Education;—such as School Premises, School Organization, School Government—Different Systems of Education—Different Branches taught in Common and more advanced Schools—System adopted,

its distinctive features and its application to the various branches taught.

Under the Who comes everything belonging to the Living Agents, the Schoolmaster;—such as the Office of Teacher—his Qualifications and means of obtaining them—his Duties—his Difficulties and his Rewards.

Under the Wherewithal falls to be considered whatever belongs to the External System;—such as the Party on which devolves the responsibility of this branch of the Public service—The mode of raising the Adequate Support—External Systems of National Education, with an examination of the system pursued in this Province.

From the connection subsisting between one prominent feature of the Training System and Natural Science, Dr. Forrester also delivers an Outline Course of Lectures on Chemistry, Mineralogy, Botany, Zoology and Geology, all which are applied to the scientific cultivation of the soil.

Music.—Instruction is given twice in the week on the Theory and Practice of Music, the great aim being to make the Pupil-Teachers acquainted with ten or a dozen tunes, so as to enable them the better to carry out the various physical exercises, &c. of the system.

CONNECTION BETWEEN NORMAL COLLEGE AND MODEL SCHOOLS.

Six weeks after the commencement of a Term, the students of first section are required to go into the Model Schools, first as spectators, and then as practitioners,—at least, for two or three hours every week. For example they have received, in course, instruction in the way in which Mental Arithmetic should be taught in accordance with the Training System. But they require to see that mode exemplified; nay more, they require to practice it themselves, ere they can teach it with efficiency. And all this they do, first, in the Primary, then in its more advanced stage, in the Intermediate, and more advanced still, in the High School department,—and so on with the other branches. The other sections of Pupil-Teachers pass through the same ordeal though, in consequence of their deficiencies in scholarship, they cannot afford to give the same time to the Model Schools.

MODEL SCHOOLS.

These schools are erected within a few yards of the Normal College and are intended to furnish the best exemplification of the Training System, as well as to afford a favorable opportunity for the Pupil-Teacher to practice the same.

They consist of three departments, Primary, Intermediate, and High, with Female Industrial; and embrace all the branches of a Common and Grammar School education, including the higher branches of Mathematics, Greek and Latin, with French and German.

Teacher—MISS S. CHRISTIE, Primary.
MISS JANE GRAVES, Female Industrial.
MR. J. B. WRISTAR, Intermediate.
MR. J. B. CALKIN, Head Master.

The fees paid in advance are, per quarter, for Primary, 6s. 3d.; for Intermediate, 8s. 9d.; and for High School, 11s. 3d. The commencement of Quarterly Terms is the first of May, August, November, February, and none are afterwards admitted without paying the full fee. Holidays from the 15th July to 15th of August.

The Books used are the Irish National Series, with Edinburgh Academy Greek and Latin Grammars—Ahn's French and German Grammar.

IV.—EDUCATIONAL INTELLIGENCE.

ENGLAND:—THE EDUCATIONAL GRANT.

On Monday, July 22nd, the house went into committee of supply, Mr. MASEY in the chair.

Mr. LOWE, in moving that the sum of £836,920 be granted for educational purposes in Great Britain, said it was very instructive and interesting to watch what had been the progressive increase of this vote. The first expenditure was in 1840, and amounted to £10,642. In subsequent years the expenditure gradually advanced, year by year, up to 1849, when the parliamentary grant amounted to £109,948, in 1852, it amounted to £188,000, in 1853 to 250,000, in 1854 to £326,000, in 1855 to £369,000, in 1856 to £425,000, in 1857 to £559,000, in 1858 to £668,000, so that there had been a gradual and steady progress which had established itself hitherto at about an annual increase of £100,000. He believed he was expected to say something to the house upon the sub-

ject of education, and perhaps it would be only respectful to them if he offered some remarks on subjects of practical importance. (Hear, hear.) Much good had been done in promoting education by attention being directed to educational machinery already in existence, which had received a stimulus; besides which, the great religious bodies which divided the spiritual domain of this country had been stirred up. The object had been to aid voluntary effort. They had left every sect free to teach whatever system of Christianity it desired; and probably they had done as much good, intermixed with as little evil, as the state of English society would allow. Its capability of increase was no ordinary proof of its suitability as a system; for there was no better test, whether as applied to a man, to a tree, or to a system, than being able to grow up to maturity without altering the nature, but expanding gradually and symmetrically, (Hear.) He thought it was impossible to deny that the system had that merit. He saw the results of the system in the most tangible form all over the country in the number of schools it had raised, and he might fairly say this system had raised them, although they resulted also in great part from private benevolence, the contributions for the last year standing in the ratio of three to two. When this system was established, popular education had been in a most imperfect state; but now a good standard of popular education had been fixed, which would maintain itself before the public mind. Another advantage of the system was, that it had raised up a large and intelligent body of instructors, who would prove most valuable co-workers in the educational cause. It had stimulated teachers, because it had given them an augmentation of income according to their merits; thus holding out an inducement to them to proceed in their own education and acquirements. It had also, by the Education of Pupil-teachers, sent forth to the world a type of the education of the middle class. It had also, by stimulating the demand for good education, raised the remuneration of teachers, and thereby raised their status in the community. It had, besides, by its constant inspection, kept up the standard once established, and provided the means of seeing what was going on in respect to education all over the country, and made the teachers feel that they must not rest on their oars, for that their own progress was constantly watched. These were the principal benefits which the system had conferred on the country, and he thought they were of no ordinary nature; and whether the system should remain as a permanent system, or be dropped as an experiment, it would have done much good. The total cost to the country was somewhere about £3,700,000, and he thought that, upon the whole the house would be of opinion that the money had not been ill-spent. (Hear, hear.) They had under instruction somewhere about 821,000 children; and for this they paid £761,000; that was deducting the £70,000 which represented the deficiencies of former years. This was something like £1 a head for their education, or rather 13 children were educated for £12. It was estimated that there were 3,000,000 children who ought to be brought under the operation of this public education. In order to educate these they would require an army of 200 inspectors, 1800 school masters and mistresses, and 45,000 Pupil-teachers, besides the other appliances of education. It was difficult to ascertain what the expense of all this would be. That it would not increase according to the number of children was clear, because, after the large expense which had been incurred in the building of schools, that expense would rather be on the decrease. But supposing things to progress as of late, the total grant that would be required for educational purposes would be £2,500,000. These were all grave considerations. He rejoiced that the nation was spending so much money in doing so much good. In the schools of art the results were extremely gratifying. The returns of the central institution, including schools of navigation, showed that 68,212 pupils had attended it; and in the school where drawing was taught, 79,473, an increase of 83 per cent. The art schools cost 10s. 1½d. each pupil. He hoped that, by unity of judgment and mutual concession, the committee would arrive at some solution of the question, which, while it left inviolate the feelings and opinions of different religionists, should give to the people of England a thoroughly good education, fitting them for their different stations in life, and not involving an unreasonable expense to the revenue.

Mr. BAINES had entertained the deepest sense of the value of education during the whole of his life; and he rejoiced to see the house and the society of England brought into a state altogether different from what he remembered in his youth, when discussions took place as to whether it was desirable that education should be universal. For himself he had always thought that it should. But he felt some alarm at the rapid progress of this educational estimate. The hon. gentleman then proceeded to criticize the educational returns, according to which it would appear that the children of the poor did not remain at school more than three years; but this, he contended, was a great mistake. He knew something of the habits of the poor, and was aware that they were very frequently accustomed to change their residence, the result of which

was, that their children, after remaining at one school for a certain period, removed to another. There was no doubt that many dissenting sects did not object to receive the grant. The Wesleyan Methodists, the Presbyterian Church of Scotland, and the Roman Catholics were in this category, but let it be remembered, on the other hand, that the chief portion of the Nonconformists, the Independents, and Baptists—who possessed from 5000 to 6000 places of worship between them—the United Presbyterian Church of Scotland, and the minor sections of Wesleyan Methodists refused it. All these were strongly impressed with the absolute necessity of adopting the voluntary principle in matters of education as well as religion, and believed that, if the principle of this grant were followed out, it would eventually end in the endowment of all sects of religionists—the endowment of error as well as truth. He was anxious to promote the spread of education, but he verily believed that education, like industry, did best when it was left in perfect freedom. Take it out of the hands of Government, and, as with industry, religion, and literature, so they would find with education, that the spirit of self reliance amongst the people would be aroused, and they would have a more honest, healthy, and vigorous system than any system of public endowment was capable of being made. (Hear, hear.)

Mr ADDERLEY said the hon. gentleman who had just spoken had complained of the enormous amount of this vote, and in that respect he (Mr Adderley) sympathised with him. The constant gradual increase of the vote was matter for serious consideration, and for careful and immediate revisal; but when the hon. gentleman said that the voluntary principle was sufficient to maintain the national education of the kingdom, he must surely be oblivious of what was the state of education before the present system was instituted. If the hon. gentleman looked back to the state of things which existed some 20 or 25 years ago, he would see that a great deal had been effected by the present system, and that the state of things was now very different from what it was before the system began. To what might that be attributed? Simply to the mode in which the system had stimulated the voluntary principle throughout the country. The voluntary action of the people themselves was that which must be looked to in the question of education. But there was a poor class of parents who could not efficiently undertake the task of educating their children; and it was here, and here only, that Government should come in and supply either the absence of will or of power on the part of the parents to fulfil their obligations to their children. The first persons, however, who ought to assist them were the rich inhabitants of the locality, the employers of labour. These were the natural guardians and patrons of the poor; and it was not until the parents had failed in will or ability, that it became absolutely necessary for the Government to step in; but even then, when public aid was obliged to supplement the incapacity of the parents, the true principle was not to go to the treasury but appeal to local aid. (Hear.) The house would, he was sure, be always ready to advance the cause of education; but it ought never be forgotten that the proper and legitimate limit of the expenditure under the estimate now before the committee ought to be the supplementing of what was done by the people themselves. (Hear.)

Mr CowREN said that the right hon. gentleman who had just sat down admitted that the estimate was very large. While the general system and general minutes remained as they were, the expense would go on increasing as it had increased while that right hon. gentleman was in office. He thought that every examination of the schools under the inspection of the Privy Council had been sufficient to justify the expenditure. The system now adopted could be shown to be as good as that in any country in Europe, and only failed to produce its full results on account of the shortness of the time during which the pupils were subjected to its influence. He believed the country had declared itself so unequivocally in favour of the system that there was hardly any use in re-opening the argument again. The country had made up its mind in favour of religious education, and what the Government did was to give that religious education the aid of science. The Government did not teach education at all, nor did it interfere with religion, but only required that it should be reported on by the inspectors; so that the country had all the benefits of a religious education, without any of the evils of intruding on the rights of conscience. (Hear, hear.) The capitation grant had been complained of and he admitted that it could only be justified by stipulating regular and punctual attendance. He would agree, however, that wealthy schools ought not to have the grant, but he believed that there were great numbers of schools that would be broken up if the capitation grants were withdrawn. No doubt it was distressing to find that, after a good system of education was established the children of the country did not avail themselves of it; but still he could not think that any system of compulsion ought to be attempted. (Hear, hear.) They must, therefore, rely on the workings of night schools. He was surprised to hear the hon. mem-

ber for Leeds say that the night schools assisted by Government were injuring the mechanics' institutes. So impressed was he with the lamentable deficiency of night schools, that he was disposed rather to extend the benefits of Government aid to mechanics' institutes, which he thought might be done to some extent. Until they were disposed to make a decided change in the system, they must make up their minds to pay this large sum, satisfied that it was, on the whole, well employed.

Sir J. PARKINGTON rose mainly to make a few inquiries upon this interesting question; but at the same time he could not refrain from expressing his delight at the excellent tone and temper of the speech to which they had recently listened from the hon. member for Leeds, and the great pleasure in seeing him in that house—the fittest arena in which he could state his views. He was afraid the hon. gentleman had himself regarded the question from very different points of view; but no one, he had paid any attention to the history of the education of the people, could be ignorant of the zeal and ability which the hon. gentleman had devoted to the question. To a certain extent the hon. gentleman and himself entertained similar opinions with regard to the grant that was now before them. They both viewed with distrust the immense amount to which this grant had risen; but the hon. gentleman's distrust arose from his opposition to State assistance to education of whatever kind; while his (Sir J. Parkington's) distrust arose from his doubts whether they obtained from that State assistance the maximum of aid which they had a right to expect from it. On that point he certainly had great doubts, and he was gratified to hear the observations made on both sides of the house as to the growing nature of this vote. He was satisfied that they had not yet reached anything like the maximum, and that if they persevered in that system, the day was not far distant when it would arrive at £2,000,000 or £3,000,000. He thought there was great force and truth in what the hon. member for Leeds said with regard to the capitation grants; while he did not object to the expenditure of this or any other sum on the education of the people, he thought that the money might be administered on a better system, in which the public would have greater confidence than they could feel in the present. He did not believe that any board sitting in London could administer this fund with the maximum amount of efficiency and economy. He wished to know whether the noble duke still retained the presidency of that commission? He also wished to know what prospect there was of receiving the Report of the Commissioners?

Mr LINDFELT observed, that they had heard a great deal about the enormous increase in this vote, and that it was likely to increase rather than diminish, but they ought not wholly to regard this vote as it appeared upon the estimates. They ought to compare it with the Reports of the inspectors of schools; and although those Reports in their candid feelings and details, might not contain so satisfactory an account of the education of the country as they could wish, still they developed a steady and fair ratio of facts and progress; and if there were one feature more agreeable than another in these Reports, it was the improvement in the pauper schools of the country, and which dealt with a class of children whose parents could not afford to educate them otherwise. He would draw the attention of the President of the Poor Law Board to this. In spite of the large expenditure staring them in the face, there was the yet important fact that there were 300,000 poor children not receiving any education in this country, and who belonged to a large proportion of that class of paupers who received out-door relief. Machinery had already been provided for their education, but the act being permissive it was inoperative. From a return that had been furnished on the subject, out of 612 unions only 199 availed themselves of the Act, 418 had neglected to avail themselves of it altogether; and of the 199 who had availed themselves the total number of children amounted to 5650. The Act in question was the 18 Vic. c. 94; and the best plan that could be adopted for rendering the Act more operative was for hon. members and poor law guardians to exercise their influence in their own districts in promotion of the Act, and to bring it into public notice.

Mr. WALKER said the Government inspection of these schools had been referred to as of considerable importance, and he thought that a sound and efficient system of inspection was calculated to give great and effective aid; but it was to be regretted that, in the general working of the system, Government withheld its aid from those who did most to assist themselves, and he thought the Privy Council ought more readily to acknowledge these efforts, and render the requisite assistance. The inspectors' Reports furnished but an inadequate idea of the efforts for education made throughout the country. They utterly ignored the existence of many well conducted schools, supported on the voluntary principle, throughout the country. He had, on his own estate schools of this kind that had never enjoyed Government inspection; and he hoped, that if he applied to the Government for an inspector, his request would meet with a ready acquiescence.

Mr. HENLEY agreed with hon. members that there might be

many defects in the present system, but until there was a better one they must go on with the existing one. Hon. gentlemen had stated that the great defects in the present system were, that the trust deeds in the several schools were made too exclusive with reference to the peculiar religious bodies to which they belonged; but if there was an evil of that sort it was brought about by the action of the Privy Council itself, causing it to be suspected that they wished to bring in conscience clauses. A vast body of the schools in this country were mainly set about by the religious feeling of the country in their own way and principle; and he trusted that the right honourable gentleman would not take any steps to blow up the jealousies that might exist, and the slumbering feelings on this question, into a fire. (Hear, hear.) He believed, according to the census of 1831, there were 2,400,000 receiving education in this country, of which number 800,000 were dealt with by the Privy Council. Consequently there were a vast number who did not want aid, and who wished, whether they were Presbyterians, Roman Catholics, or Church of England men, that no strain should be put on the religious conscience of the people. There was one portion of the grant that ought to be watched—the portion expended on training and producing masters through the agency of pupil-teachers. Unquestionably one of the greatest blots on the system was, that it helped the richer and did not afford adequate assistance to the poorer districts.

Mr. Lowe, in reference to the question which had been put about Pupil teachers, said the information he possessed was not very accurate, but about 12 per cent. of them, he believed, stayed to the end of their time, and about 87 per cent. of them obtained certificates. Of these most of them became schoolmasters. In answer to the question of the right hon. member for Dronwich (Sir J. Pakington), he might say that he had no official information of the proceedings of the commission, except that they had sent him a set of questions which he had been unable to answer. (A laugh.) He hoped, however, that they would report by the next session of Parliament. The hon. gentleman who had moved the motion proposed to reduce the estimate by £75,000, which was a deficit for three years.

Mr. HADFIELD said he proposed to reduce the vote by £100,000. Mr. Lowe—Then that would simply have the effect of creating a deficit of £100,000, which must be paid next year, and it would have no effect in reducing the expenditure. There was an admitted debt which must be paid.

Mr. HENLEY thought that this was rather an awkward statement. The Government had no control over the estimates, and now it appeared the house had no control either.

Mr. HADFIELD withdrew his motion, and the vote was agreed to.

EDUCATIONAL SYSTEMS OF GERMANY.

CONTINUATION OF ARTICLE ON "THE PRUSSIAN SYSTEM,"
IN OUR LAST NO.

S A X O N Y .

The Kingdom of Saxony is divided into four circles; each of which has its school board, which has charge of all primary schools and teachers' seminaries, and regulates the appointment of teachers, and all pecuniary matters—subordinate only to the Minister of Public Instruction. Next in authority is a district board of inspectors, having charge of several schools—subordinate to the school board of the circle. The district board consists of a superintendent, and a representative of the patrons of each school. The superintendent is the district inspector, who must counsel with the board, visit all schools, and report on the fidelity and capacity of each teacher. The lowest authority is a committee for each school circuit, whose duty it is to hold semi-annual examinations in presence of the district inspector, and report annually on the condition of the classes.

The law provides that all children between the ages of six and fourteen shall go regularly to school; but in the rural districts, children over ten years of age are exempted from school attendance, during the season of harvest. Attached to each school is a person whose duty it is to ascertain the causes of absence on the part of pupils; and he is entitled to a small fee from the parents for each call he makes upon them. No

boy can be apprenticed until after the age at which he may lawfully leave school.

Every school circuit must furnish a school house, and a dwelling for the teacher. The schools are supported from funds of the church, from the interest on donations to the school fund, from fines levied on parents who neglect sending their children to school, from a payment made to the school fund in purchases of property, from collections, from fees paid by the pupils, and from direct taxation. These funds are chargeable with the master's salary, with furniture of the school, with books and slates for poor children, prizes, insurance, and incidental expenses.

Primary schools in Saxony are of two grades, corresponding to the elementary and higher schools of Prussia. The prescribed course of instruction in the Normal Schools occupies four years; and no one can now receive a certificate of qualification as a teacher, without having gone through the course, or showing an amount of attainment and practical skill which shall be deemed its equivalent.

With a population of 1,809,023 in 1846, there was one university, with 85 professors and 835 students; six academies of the Arts and Mining, with 43 professors and teachers and 1,400 pupils; eleven gymnasia, with 131 teachers and 1,590 pupils; six higher burgher and real schools, with 18 teachers and 270 pupils; three special institutions for commerce and military affairs, with 43 teachers and 240 pupils; nine teachers' seminaries, with 41 teachers and 362 pupils; seventeen higher schools of industry or technical schools, with 72 teachers and 779 pupils; sixty-nine lower technical schools, with 6,966 pupils; twenty-four schools for lace making, with 37 teachers and 1,928 pupils; and 2,155 common schools, with 2,175 teachers and 278,022 pupils; besides one institution for the blind, one for deaf mutes, three orphan asylums, and a number of infant schools and private seminaries.

B A D E N .

The Grand Duchy of Baden possesses a regular series of school authorities, from the Prime Minister down to the local school committee; and is well provided with Normal Schools for the training of teachers. Parents are obliged to keep their children at school from the age of 6 to 14. The school law is very minute, furnishing directions for the internal organization of primary schools. Schools that have but one teacher are to be divided into three classes, to be counted from the lowest as first upward. In the summer half-year, the third or highest class has two morning hours of schooling daily; the second class has also two morning hours, and the first or lowest has two hours in the afternoon. In the winter half-year, the third or highest class has three morning hours of instruction daily; the second class the first afternoon hour alone, and the second in conjunction with the first class. Care is to be taken that the pupils assemble punctually at the fixed hours, and that they are clean in person and attire. They must also behave with propriety both on their way to and from school, and while at school. Permission to absent themselves from a single lesson may be granted by the teacher; for more than one, the permission must be obtained from the school inspector. School rooms must be ten feet in height, and be built on a scale of six square feet to a pupil.

The aim of the primary school is to cultivate the intellect of the child, and to form his understanding and religious principles, as well as to furnish him with the knowledge requisite for

his station in life. Instruction must therefore be imparted in such a manner as shall improve the mind. The pupil must have his attention sharpened, and his intellectual energies must be brought into activity. He must learn nothing mechanically. The memory must not be cultivated, except in connexion with the understanding and the feelings. The formation of every idea is to be preceded by the requisite insight into its fundamental principle, whether exemplified by objects or figuratively. In all explanations the elementary principles must precede the complex views. What has been learned must be made familiar by frequent application and illustration. The instruction given in the different classes must correspond with the plan here laid down.

In each union (district or circle) the union inspector is obliged, every September, *i. e.*, during the holidays, to send notices to all teachers in his district, to assemble at a place and time specified in the notice: and every teacher who receives the notice is required by law to attend. Notices are also sent to all the religious ministers of the union, that those who are able may meet the teachers. The educational magistrate of the county, or some one representing him, is also always at the meeting. The notices are sent round as early as the month of May preceding the meeting. The inspector, when he issues them, sends at the same time to each teacher in his district, one or two questions on some point, connected either with the practice, or the methods of teaching, or with some of the various subjects of instruction, and upon which there has been some difference of opinion or practice; to which answers must be forwarded by the month of August. When the inspector has received these answers, he reads them carefully through, and writes a short criticism of each, and reads it to the teachers when assembled at the conference. After the inspector has read the answers and criticisms to the meeting, the teachers proceed to debate the subject among themselves, rising one after another, and addressing the meeting upon it by turns — When this debate is concluded, three teachers, selected at the previous meeting, are called upon to instruct a class of children before the rest of the assembly, in different branches of instruction. Their performances are then criticised and discussed by the others, who had been looking on as spectators.

WIRTEMBERG.

Wirttemberg was one of the earliest of the German States to take effective measures for the advancement of education, and at the present time, provides on a liberal scale for the educational wants of the whole community. Parents who keep their children from school, subject themselves to a fine, and even imprisonment; and the children are compelled to attend school. There are six Teacher's Seminaries, one of which has at its head Director Denzel, who is the author of the most complete treatise on education in any language. In his preface to the last edition he says: "When, three and twenty years ago, I entered upon my present occupation, great exertions were already in progress for the improvement of the elementary schools of Germany. Much had been accomplished in particular states, and much active discussion was going on with respect to the methods pursued, and the best means of raising the qualifications of the schoolmaster. But the times required something more than had yet been done for the popular schools. It came more and more to be understood that the school was not merely a place of instruction, but of education; that the common and necessary acquirements of the arts of reading, writing, and cy-

phering were not to be the sole or the principal objects of its care, but rather the unfolding and strengthening of the mental and bodily powers of the child conformably with nature and circumstances. When this began to be held to be the province of the elementary school, a new era broke upon it. Viewed in this its new and loftier position, it assumed a totally different aspect, and all relating to it required to be dealt with in a more serious and scientific manner. This salutary change of view respecting the real character and destiny of the elementary school, though long in progress, became at length universal, chiefly through the genius and exertions of Pestalozzi, whose principles, even where only partially adopted, facilitated and infused a new spirit into the processes of teaching."

B A V A R I A .

In Bavaria, the external machinery for administering public instruction is similar to that of Saxony, already described. All parents must send their children to school, from six to fourteen years of age, or be fined. The course of instruction is the same as in the primary schools in other states of Germany. Every school, according to law, must have a small nursery-garden under the care of the teacher, where the pupils may learn the mode of treating trees and plants. Out of 6065 schools, it appears from the official reports that 5284 had such grounds attached. By a regulation adopted in 1836, every teacher appointed to a public school, must have qualified himself at one of the Normal Schools. There are seven of these institutions now in operation; five for Catholic, and two for Protestant teachers. The following remarks on the schools and teachers of Bavaria, are from Kay's "Social Condition and Education of the People:—"

When I was in Nuremberg, in the kingdom of Bavaria, I asked a poor man, whether they obliged him to send his children to school. He said, "Yes; I must either send them to school or educate them at home, or I should be fined very heavily." I said, "I suppose you don't like these rules?" He answered, "Why not, sir; I am a very poor man; I could not afford the time to teach my children myself, nor the expense of paying for their education; the municipal authorities pay all the school fees for my children, and give them good clothes to wear at school; both my children and myself are the gainers by such a regulation; why should I object to it?"

In Ratisbon, I spent the whole of one day in company with a poor peasant, who acted as my guide. I said to him, "Have you any good schools here for your children?" He answered with an air of astonishment, "Oh dear yes sir: all our children go to school; the law obliges us to send them to school, and provides good schools for them." I said, "But don't you dislike being obliged to send them to school?" He answered, "Why should I, sir; the teachers are good and learned men, and our children learn from them many things, which enable them afterward to get on in the world much better than they would be able to do, if they were ignorant and incapable of studying." I asked again, "But what sort of men are the teachers?" He answered, "Oh, they are very learned men; they are all educated at the colleges." I said again, "But are the teachers generally liked by the poor?" He answered, "Oh yes, they are learned men, and teach our children many useful things."

When I reached Munich, according to my usual custom, I engaged a poor man as my guide. I asked him to take me to see some of the schools, where the children of poor people were educated, and told him, that I did not wish to visit the best, but the worst schools in the city. He answered me, "Sir, we have no bad schools here; the government has done a great deal for our schools, and they are all very good." I said, "Well take me to the worst of those you know." He answered again, "I don't know any poor one, but I will take you to

the one where my own children go. I am a poor man, and cannot afford to pay anything for the education of my children, and many of the children that you will see there are like my own, sent to the school at the expense of the city." * * *

I went first into the second class room. The children were so clean and respectably dressed, that I could not believe they were the children of poor persons. I expressed my doubt to my guide. His answer was, "My children are here, sir;" and then turning to the teacher, he requested him to tell me, who were the parents of the children present. The teacher made the children stand up, one after another, and tell me who their parents were. From them I learned, that two were the sons of counts, one the son of a physician, one of an officer of the royal household, one of a porter, and others of mechanics, artisans, and of labourers, who were too poor to pay for their children's education, and whose children were clothed and educated at the expense of the town. They all sat at the same desks together. They were all clothed with equal respectability. In their manners, dress, cleanliness, and appearance, I could discern no striking difference. My inference from this interesting scene was, that the children of the German poor must be in a very different state from that of the children of our English poor, to allow of such an intercourse, and to enable the richer classes to educate their sons at the same desks with the children of the peasants.

After spending some time in the different class rooms, I went to the town hall to see the chief educational authority for the city. Outside his door, I found a poor woman waiting to see him. I asked her what she wanted. She said, she had a little girl of five years of age, and that she wanted to persuade the minister to allow her to send her little daughter to school a year before the legal age for admission, which in Bavaria is the completion of the sixth year. I said to her, "Why are you so anxious to send your child to school so early?" She answered, smiling at my question; "The children learn at school so much, which is useful to them in after life, that I want her to begin as soon as possible." I thought to myself, this does not look as if the people dislike being obliged to educate their children.

AGRICULTURAL.



I.—THEORY OF AGRICULTURE.

VEGETABLE PHYSIOLOGY.

In our last article on this subject we presented an outline of the elementary contents of every part of the Vegetable Kingdom. We showed that the basis of all vegetation is cellular tissue, that this enters into the composition of every part—the root, the stem, the leaf, flower, fruit, and seed—and that both the vascular and fibrous tissue is but the elongation and enduration of this substance.

We proceed to make a few observations on each of the compound organs. The term organ is derived from the Greek word

organon, which signifies an instrument or weapon, and is applied to those parts of plants or animals which perform certain functions or offices. In the Vegetable Kingdom, these organs are regarded in a twofold aspect; those essential to vegetation,—the root, stem and leaf, and those essential to reproduction,—the stamens and pistils. The knowledge of these is termed Organography, and the office which each of these discharges is, properly speaking, Vegetable Physiology. As, however, a knowledge of these organs is necessary before we can fully comprehend the functions they discharge, the structure and the form of these, or, in scientific language, their anatomy and Organography, are all embraced in the important branch usually designated Vegetable Physiology. We shall therefore discuss each of these in order.

THE ROOT.

This constitutes one of the most important organs of vegetation, both in its relation to the plant in general, and to the Animal Kingdom. As soon as a certain amount of moisture, air and heat, congenial to the nature of the plant, comes in contact with the seed, the embryo contained within the outer lobes or coverings germinates, and manifests its polarity, one end growing upwards and the other downwards. The part that grows downwards, or the descending axis, is designated the root. Between the ascending and descending axis there is an exact correspondence. As the stem shoots out, either vertically or horizontally, so does the root. The expansion of every bud and leaf requires a fresh supply of nutriment, and this demands a new mouth, or orifice. The roots continue to spread and produce new cells or fibrils, which absorb the fluid required to compensate for that lost by evaporation or consumed in growth. In this way the rain which falls on a tree drops from the branches on that part of the soil which is situated immediately above the absorbing fibrils of the roots. It is not by watering a tree close to the trunk that it will be kept in vigour, but by applying the water on the soil at the part corresponding to the ends of the branches. "We have here," says Roget, "a striking instance of that beautiful correspondence which has been established between processes belonging to different departments of nature, and which are made to concur in the production of such remote effects as could never have been accomplished without these preconcerted and harmonious adjustments. If the roots are not allowed to extend freely, they exhaust the soil around them, and are prevented from receiving a sufficient supply of food. The plants, in such a case, deprived of their proper means of support, become stunted and deformed. Another beautiful provision in the root, so strikingly indicative of design on the part of the great Creator, is the elongation of the roots taking place at their extremity, so that their advancing points are enabled easily to accommodate themselves to the nature of the soil in which the plant grows. If the roots had increased by additions throughout their whole extent, in the same way as stems, they would, in many instances, when meeting with an impenetrable soil, have been twisted in such a way, as to unfit them for the free transmission of fluid. But, by the mode of lengthening at the point, they insinuate themselves easily into the yielding part of the soil, and, when obstacles are presented to their progress, they wind round about them until they reach a less resisting medium. They are thus also enabled to move from one part of the soil to the other, according as the nourishment is exhausted.

The root, when viewed externally, is made up of three parts,—the collar, the belly, or the thick part, whether fibrous or cellular, and the small fibres, or rootlets, or spongoles. The first forms an important part in all herbaceous plants, whether biennial or perennial, as it is from it that the bud emanates every succeeding Spring. In transplanting all such plants, every possible care ought to be taken that the collar be neither too deep in the soil, nor too high above it, and thereby entail canker or some disease upon the plant. The thick or middle part of the root is hard and woody in shrubs and trees, and succulent and soft in herbaceous, and, especially, in biennial plants. In the latter sort of plants it forms a reservoir of nourishment for the growth of the plant the following Spring. The cellular tissue, of which it is made up, is all transferred to the flower

and seed, in the latter of which it remains in a concentrated condition, and leaves the root nothing but a mass of woody fibre. It is this sort of root that is mainly used for culinary or kitchen purposes, as in the case of Turnip, Beet Root, Carrot, &c. And here, again, we see another beautiful adaptation of the vegetable to the animal, thereby furnishing incontestible evidence of design on the part of the Creator. In what climate do we find biennial plants in greatest abundance and growing with most luxuriance? In frigid regions, or in temperate with long and protracted winters. And all this plainly for the purpose of providing an adequate supply of cellular tissue for the animal—that tissue in which the essence of vegetation resides; in the same way, and for the same reason, that we have the greatest supply of luscious fruit in tropical countries. The other part of the root is the rootlets, or the little fibres that cover the whole of the fleshy parts, but which are generally more plentiful at the extremities. It is by means of these, as so many sponges that the various substances are absorbed from the surrounding soil, in a state of solution, congenial to the nature of the plant in all its parts. There is a marvellous instinctive power possessed by these sponges, at one time taking up certain ingredients to the exclusion of others, and at another stage in the progressive growth of the plant absorbing those very substances which but a little before were rejected—The wheat rootlets, for example, during the growth of the stalk, absorb chiefly the silicious substances held in solution in the surrounding soil, but, during the swelling and ripening of the grain, they reject these and take up the sulphates;—and so with every other plant and shrub and tree. And if such is the tendency of these rootlets, and such the important functions they discharge, it is clear that the utmost care is requisite to supply them with the nutriment congenial to the nature of the plant, as well as to defend them from all accidents or casualties. On this account the roots of plants should not be disturbed at the time when they are in active operation. During the season of growth, when the branches and leaves are pushing forth, the roots are also developing their rootlets, and constantly renewing their delicate absorbing extremities. Any attempt to transplant at this period is attended with serious injury, because those minute fibrils are destroyed by means of which the fluid transferred by the leaves is restored. It is only in Autumn, when the rootlets cease to grow, and absorption becomes languid, or in early Spring, before their activity begins, that transplanting can be prudently conducted. In transplanting large trees it has been customary to cut the roots all round, at some distance from the trunk, the season before they are removed. Thus an opportunity is afforded for the production of new fibrils, which, after transplantation, are ready to absorb nourishment.

There is considerable variety in the form of the roots, that being greatly modified by the age or duration of the plant, whether it be an annual, or biennial, or perennial. An annual plant, as all are well aware, is just a plant that germinates, vegetates, bears blossoms and seeds the first year of its existence; and having thus served the end of its being, as well as provided for its perpetuation and propagation, it withers and decays and dies. Such plants do not, of course, require to lay up any store of nourishment in the shape of organized matter for the following Spring, and, accordingly, the greater proportion of them possess what are called, from their texture, fibrous roots. Biennial plants, again, are those which neither flower nor seed till the second year, and, having done so, their strength is expanded, and they too wither and die. These lay up a stock of organized matter for their growth the following Spring, and thus their roots form a reservoir of nourishment, as well as serve to keep the plant in a fixed posture. These roots are very diversified in their form, sometimes they are conical, as in the Carrot or Beet Root; sometimes they are napiform, as in the Turnip, &c.—Perennial plants, whether they are herbaceous, or shrubs, or trees, are those which continue for years, it may be for a longer or shorter number, and which are propagated not only by seed, but by a process of self-multiplication, whether by offsets, or layers, or suckers. These, too, are of every variety of form and mode of growth,—sometimes they are tuberosus; at other times, they are palmate; and at other times, bulbous. We said at the outset that the root generally descends into the soil,

while the stem ascends into the air; but there are other kinds of roots, deriving their names from their nature or habits.—Some send their roots or suckers into the substance of other plants, either dead or living, and derive their food entirely from them. Such are called *parasitical*, and they may be illustrated in the case of moulds and fungi, growing on the decaying stumps of trees, and causing diseases in corn and other plant—dodder, which injures flax and clover by living on their juices, broomrapes and scabwort. These parasites have either no leaves, or only brown scales on their stems; others, as a mistletoe, have green leaves, which alter the juices taken from the stock by exposure to the air and light. The study of the growth of parasitic fungi is a subject of great importance, as many diseases in plants, animals, and men, appear to be either caused or modified by them. Dry-rot, for instance, is attributed to the attack of a fungus, so also are certain diseases of the skin and mucous membrane in man and animals.

But there are other kinds of roots. There are some sorts of trees, at the end of whose buds roots come out, and evince their polarity by descending downwards till they reach the soil, and form other trees. These are called *araal*, and are well illustrated by the Banyan Tree of India, which exhibits its roots in a remarkable manner. These proceed from all parts of its stem and branches and ultimately reach the soil, forming numerous stems, which support this wide-spreading tree. The famous Nerbudda Banyan has 360 larger and 3,000 smaller stems, and it is said to be capable of sheltering 7,000.

“Such, too, the Indian fig that built itself
Into a sylvan temple, arched aloof
With airy isles and living collonades.”

But there are other kinds of roots still. There are the roots of plants that are supported entirely by the atmospheric air, and are generally indigenous to most tropical climates. They are designated *epiphytal*.

The root supplies many Scripture illustrations, both as fixing the plant and as drawing up nourishment. Thus, in Hosea xiv. 5, Israel, when restored, is said to “cast forth his roots as Lebanon.” As being the source of life to his Church, Christ is sometimes likened to the root. In Revelations v. 5, He is called the root of David. Though at first He was despised and rejected by men, as a root out of the dry ground, yet, as the tree whose leaves are for the healing of the nations, He shall overshadow the world, having the uttermost parts of the earth for His possession.

II.—PRACTICE OF AGRICULTURE.

MANURING GRASS LANDS.

In no department of farming is there a more radical call for improvement, than in the management of our meadows and pastures. Good grass crops are at the very foundation of good husbandry.—Land which will produce these largely, will produce grain, corn and roots—will sustain a good proportion of stock, and thus furnish within itself the means of keeping up and improving its fertility.—These assertions are seemingly so self-evident, that we must beg pardon of the intelligent reader for referring so frequently to the subject. And yet the intelligent reader who looks, perhaps, over his own farm, certainly on the farms around him, will see that no word is out of place, which can attract attention to the question before us. We shall now remark simply on top dressing meadows—the present being a favorable season for the operation.

For improving the yield of grass, and adding to the permanent fertility of the soil, we cannot do better with our fine manure, than to apply it after haying as a top dressing to dry land meadows or pastures. It will give new vigor to the growth of grass, and increase the thickness of the sward, so that even were it to be plowed the next season for a grain crop, the manure could not be better timed or applied. For meadow or pasture the product would be largely increased both in quality and quantity. On wet land, draining should precede the application of manure, as no great benefit can be gained from manuring a soil saturated with water during the wet seasons of the year.

On loamy soils the different composts of muck with manure, ashes, lime, guano, &c., will be found valuable, and an addition of plaster to the compost cannot well come amiss. For mucky soils, manure, composted with loam or clay will be appropriate, and these alone—as is the case with muck on upland—will be found a valuable means of improvement. Bone manure, when it can be procured, is an extremely valuable fertilizer for grass, and no farmer should neglect to employ in a broken state, all the bones within his reach upon the farm.

We have seen an account of an experiment where dry straw spread thinly over the surface of a meadow, after having produced a large increase in grass—acting perhaps as a sort of mulch to the roots, preventing the effects of drouth, adding a light manuring as it decayed. Turf ashes act very beneficially upon grass land, and some farmers use them largely as a top dressing for meadows.—*Country Gentleman.*

CULTURE OF BARLEY.

This grain is raised to a greater or less extent all over New England, and we think ought to take the place of hundreds of acres that are devoted to oats, as it is better adapted to seeding down land with, than oats, requires less seed, ripens as well, and is admirably fitted to our short hot summers,—the average products will be nearly as much as oats, and when harvested is worth a third more for horses, hogs, poultry or cattle. No grain makes a sweeter and more nutritious bread to be eaten while it is warm. The celebrated Warren Hastings once said "that it is of the greatest importance to promote the culture of this sort of grain—it is the corn that next to rice gives the greatest amount of flour per acre." The cow-keepers about London cultivate it as spring food for their milch cows. The Romans used to cultivate it extensively; made the meal into balls, and fed their horses and asses with it, which was said to make them strong and lusty.

Barley should be sowed early, on warm, sandy, gravelly loams, rather than on alluvial soils. Although a northern plant, like the Indian corn, it loves the heat of our glowing summer days. We have seen fine crops of it on our granite hills, growing erect, without weeds, and yielding thirty to forty bushels per acre,—and the hot morning cakes made from good samples of it somewhat excite our gastronomic desires even now! Great care should be used in the choice of seed. It should be of a pale, lively color, and the grains should be plump and fair. Such seed will throw up strong healthy stems, capable of resisting untoward changes of the season, and result in producing a good crop. In England it is often sown as food for sheep, and is said to be far more productive than rye, as it admits of being fed down during the summer. If sowed early, and intended for seed, it may be fed off in the first part of the season, without injury to the crop.—*N. E. Farmer.*

GATHERING AND PRESERVING FRUIT.

BY ROXBURY RUSSETT.

Whoever would derive large profits and prices from his orchard, must be prepared to take care of his fruits, as after they are grown they have to be gathered and preserved; and the better this part of the work is done, the more profits will be obtained. Besides, it is the preservation which enables the fruit grower to put his valuable varieties in the market when they are worth the most money.

The best mode of gathering as yet known is by hand with the aid of self-supporting ladders, and small baskets cushioned on the inside. There are various contrivances, and some of them really meet all the requirements wanted, with the exceptions that they use up too much time. These contrivances answer for amateurs, but not for farmers. Every fruit taken from the tree should have its stalk unbroken, it should be gathered by hand, and placed in the basket, carefully and lightly, not allowing it to drop, or to knock against other fruit, or against any substance that would bruise it in the slightest degree. The same care should be taken in removing the fruit when gathered to the fruit room, or place where they are to be kept. They should not be removed in a wagon or a wheel barrow. They should be carried in large baskets on a hand barrow, for that is the only method by which they can escape a certain amount of jolting.

The sooner winter fruits are removed to where they are to be kept, after being gathered, the better. The usual place of storing them is in cellars, where there are no special fruit rooms provided for them. If they have to be kept in barrels, each barrel should be clean and dry before the fruit is put into them. Then they should be laid in as carefully as if they were eggs, for good keeping winter apples are worth as much, and good winter pears are worth a great deal more. But though it is the practice to put fruit in barrels to keep, it is not one that can be recommended, unless the fruit is about to be sent to market within a short time. When in

barrels also, fruit cannot be inspected and watched, the decayed or decaying ones removed, and good supervision maintained.

Shelves are much better, and these shelves might be so arranged and divided that each subdivision would hold the produce of a single tree. By thus keeping the fruit of each tree separate, there would be less danger of spoiling. Trees of the same variety frequently grow fruit very different in quality, and while the produce of some will be scabby and wormy, the fruit of other trees will be free from these defects. A range of shelves, each one capable of holding from five to six bushels or two barrels, would accommodate an orchard very well. For a tree that produces two barrels of choice fruit worthy as being kept over, may be considered a first rate tree; and an orchard that contains fifty of these trees is a first rate paying investment. By keeping sorts separate, and even the growth of each tree from each other, much sorting and picking will be avoided. No fruit should go upon shelves that is not first rate in quality. The cullings, which may be used or sold, could be preserved either in barrels or on the floor, till got rid of by sale or otherwise.

The fruit room should be a cellar, capable of being well ventilated, and made dry before the fruit is placed in it, but afterwards it should be kept close, dark, and the temperature should at all times range between 35° and 45° Fahrenheit. Light and heat both act on the fruit and cause it to mature; and maturity is always followed within a short period by decay. Hence all fruit should be gathered at a period before they became quite ripe. The low temperature and the exclusion of light delays the time of maturity, hence the keeping quality.

A French writer, in the *Revue Horticole*, also claims that all the carbonic acid evolved from the fruit, should, if possible, be retained in the room. Hence after the fruit is put in its place, the room ought not to be ventilated, as this would permit this gas to escape, and also change the temperature. The same writer also charges on good grounds that all moisture or humidity should be kept out of the fruit room, as it likewise promotes decomposition, but the air should not be too dry, as then the fruit would dry up and wither.

It is calculated that a room 15 feet long, 12 feet wide and 9 feet high would hold shelves enough for 8000 large sized winter apples or pears, allowing each one to occupy an area of four inches square so that no fruit would touch each other. Allowing 150 apples to a bushel, would make room for about 600 bushels of apples, not one of which would touch the other, or at least 1200 bushels where they were piled two in height. Those who have good cellars for fruit will now see the advantage of them; but we should prefer a room in the orchard built under the shade of the trees, in the manner of an ice-house, with double walls, doors and windows.—*Michigan Farmer.*

111.—AGRICULTURAL INTELLIGENCE.

RETURNS TO CIRCULARS.

We beg to acknowledge the receipt of a few more returns to the Circulars on Agriculture we issued a few months ago. We give below a few more specimens of these returns. In our next issue we shall classify these answers, and offer a few suggestions on each of the topics embraced in these Circulars, consecutively; thereby opening up the past history, the present condition, and the future prospects of Agriculture in the Province.

Musquodoboit, August 5th, 1859.

DEAR SIR,—

I received a Circular from you some time ago and delayed answering it expecting a meeting of the Committee that I might lay it before them, but have been disappointed.

Agriculture has progressed rapidly in this district for the last few years. Farmers have become more industrious. Since the failure of the wheat and potato crops, they have turned their attention more to raising Stock, they are clearing up the swamps and converting them into good hay land.

Very little attention is paid to the rotation of crops. The great want is the want of manure. Great attention is paid to the manufacture of Compost Beds.

There is a great deal of land in this district still in its natural state. I think the average amount of arable land cultivated by each Farmer is about 50 acres.

The people generally have a copy of Dawson's Agriculture of Nova Scotia.

There is no Periodical on Agriculture circulated in the District. I think the Agricultural Society has been a great benefit to this District. It has been the means of bringing new seeds into the place, improving the breed of Stock, and purchasing labor saving machines which would not otherwise have been.

Our Society is still in good standing, it numbers about 50 members who pay 5s. annually. We have two Threshing Machines, and are about purchasing another which cost about £43 each.

We trust that the Provincial Grant though small will still be continued.

I am yours,

C. N. SPROTT,
Secy. of I. M. A. Society.

Durham, July 21st., 1859.

DEAR SIR,—

I received your Circular dated 1st June a short time ago, and would state in reply that I took the earliest opportunity of submitting the same to the Committee of the Pictou Agricultural Society.

A committee was appointed to consider the questions therein contained, and have instructed me to answer as follows:

1st. Agriculture is progressing steadily and is now in a more advanced state than ever before which is to be attributed mainly to the operations of the Agricultural Societies.

2d. There is little or no attention paid to the rotation of Crops.

3d. Artificial fertilizers have been lately introduced, attention is very generally paid to Compost Beds.

4th. The average amount of arable land cultivated is at least 40 acres to each farm—root crops will average two acres to each farm.

6. There is none.

7. They have been of considerable benefit at least in the improvement of stock. A liberal grant from the Legislature to assist in establishing Model farms would render them still more beneficial.

8th. An acquaintance with Agricultural Chemistry.

The Fertilizer lately introduced is the Concentrative Fertilizer manufactured by "Cooke and Emerick, Philadelphia."

JOHN MCKENZIE,
Secy. Pictou Agr. Society.

Windsor, July 5th, 1859.

DEAR SIR,—

I beg to acknowledge the receipt of your Circular of the first of June which was laid before a meeting of the Hants Agricultural Society held this day. The limits of this Society comprise the Townships of Windsor and Falmouth. Two general meetings of the Society are held every year, viz. on the first Tuesday of January and the first Tuesday of July. At the January meeting the accounts of the previous year are examined and passed, and the annual election of officers takes place. John Brown Esq., was elected President, James Dill, Treasurer, and Samuel Palmer, Secretary for the present year. The Treasurer's accounts showing the receipts and expenditures of the Society up to 1st of January, 1859, is herewith enclosed. Agricultural operations have been moderately progressive in this district for several years past and a movement in the right direction is still apparent. Fields are laid off and cultivated with more order. Rotation of crops receives general attention from farmers of any pretensions and the general appearance of the country exhibits a disposition in the farming population not only to produce good present crops but to improve and enrich the soil.

Imported artificial fertilizers are occasionally used, but not by farmers generally.

Very particular attention is paid to the formation of compost and every available means is used to increase and economize the natural manures of the district.

The deposit of salt sand from the banks and beds of the tide rivers forms a valuable manure for uplands and is much used both in making compost and in a raw state. In the latter a dressing of from one to two hundred cart loads per acre (which in many cases can be put on at a moderate expense) will give a good crop of wheat on the most barren soil either clay or sand, and if repeated a few times at intervals of four or five years apart will entirely change the nature making it nearly as productive as good dyked marsh.

The difference in extent of farms is such that an average estimate of the quantity of land cultivated by each farmer could not be made with any degree of accuracy. The necessity of a large supply of hay for winter use induces most occupiers of dyked marsh to keep it under grass as much as possible; ploughing only when the grass roots show symptoms of failure, and after one or at most two

crops of grain seeding down. As no manure is required green crops are never taken from this description of land. Farmers generally keep about one third of their tillage upland under green crop, not allowing themselves to break up more sward in one year than they can manure well, the next season in green crop and sow with wheat or barley and grass seed for laying down the following year.

A copy of Dawson's Agriculture of Nova Scotia is in possession of every member of this Society, and it is believed of most farmers in the district. Several of the best agricultural periodicals of the northern states are taken in the district. The good effects of this Society are particularly evinced in the improvement which has taken place in live stock, every year's experience showing that breeders pay more attention to the selection of animals for the purpose and to their treatment. Field operations have also been stimulated to a considerable extent. Very much still remains to be done, and although the Legislature and Agricultural Societies may do much to stimulate and assist in starting many objects highly advantageous to the country, yet it must rest with farmers and land owners generally to carry out details by which, if alive to their own interests, they may make the Province more prosperous as well as improve their own personal circumstances. Very few, it is presumed, will deny that a little more energy and application of the means at hand would have placed us much nearer perfection in agricultural matters than we are at present. It is hoped that benefit will be produced by the introduction of railroads, and if any other system could be introduced by which farmers could have a market near home by which the expense and loss of time attending the old plan of rushing to the precarious market at Halifax could be avoided it could not fail to better the condition of the grower notwithstanding any disadvantage to the consumer.

I am instructed to convey to yourself personally the thanks of this Society for your kindness in consenting to discharge the duties involved in the resolution of the Legislature in its last session. And with sincere wishes for your health and happiness.

I am Reverend Sir,

your obedient servant
SAMUEL PALMER.

Secy. to the Hants Agricultural Society

Rev. DR FORRESTER, Superintendent of Education.

Guysboro, Sept. 12th, 1859.

1st. The state of Agriculture in this district is not such as our Society could wish, but has been progressive the past few years. The causes that have mainly operated are, the failure of the fisheries and potato crop, the greater part of our population hitherto having been farmers and fishermen combined, but since their failure farmers have paid greater attention in working their farms, and thereby increasing their grain and root crops, and I may also add that the markets the past few years have been more remunerative and our young men more disposed to follow the occupation of farming.

2nd. Some of our farmers pay attention to the Rotation of Crops, but it is not as general as it ought to be.

3rd. Artificial fertilizers are very rarely used. In general not much attention is paid to Compost Beds.

4th. This is difficult to answer. The greater part of our farmers have too much land enclosed. If they had one half of their present enclosure under cultivation, they would reap far greater benefit than they now do from the whole, besides a great saving of labor. The average amount of arable land cultivated by each farmer may be about fifteen acres, the proportion of grain and other crops about one fourth.

5th. I do not think our Farmers possess Dawson's Agriculture work, with the exception of the members of our Society.

6th. There is no Periodical on Agriculture circulated in this district.

7th. I think that the Agricultural Societies, as at present managed, have been productive of great benefit to the cause of Agriculture. The funds of our Society the past few years having been spent in purchasing cattle, sheep and implements of the best description, whereby our stock has been much improved, especially that of Sheep. I am sorry to say that our farmers, for whose benefit those Societies are designed, do not give them that support that they ought. I am unable to offer any suggestions that would make them more beneficial except it would be an increase in the Provincial Grant, and an annual exhibition open for competition to the whole district.

8th. I believe that a good Agricultural education would be the best means of imparting an impulse to this important branch of industry.

I remain, Sir, yours truly,

WILLIAM HARTSHORNE,
Secretary.

Middle River, Victoria Co., Sept. 12th, 1859.

DEAR SIR,—

I now express regret that I should have delayed so long in acknowledging the receipt of your printed Circular of 1st. June. I submit the following answers to your Queries on the subject of Agriculture, viz :

1st. The present condition of Agriculture in our district, is in every respect progressive and has been so since the institution of our Society in 1845. This state of progress arises from the encouragement given by the Legislature

2nd. Attention is particularly paid to the Rotation of Crops by oats, potatoes, wheat or barley, and then into grass, and the same practice generally followed in ploughed land.

3rd. We are very successful in using artificial fertilizers by the preparation of Compost, and its application as top-dressing to grass land. Lime which abounds in this district is at all times used as a fertilizer.

4th. The average arable land cultivated by each farmer within the last fifteen years under each crop is about fifteen acres yielding nine returns and ten barrels of potatoes for every barrel planted.

5th. This Society is well supplied with Dawson's and Judge Peters' treatises on Agriculture.

6th. There is no periodical used on Agriculture except the Educational and Agricultural Journal, which is gaining popularity from the essential subjects treated.

7th. The management of an Agricultural Society has been productive of great benefit, and we have much cause to be grateful for the encouragement received from Government.

8th. The grand desideratum for imparting an impulse to this important branch of industry is the Bounty received by each Society and visibly appears to create a stimulus for rendering good crops to the farmer.

9th. The prevailing quality of the land in this district is a mixture of clay and loam

I have the honor to remain, Rev. dear Sir,
Your most obt. servant,
JOHN McLENNAN,
Secy. Agr. Society of Middle River.

HALIFAX, N. S., JULY, 1858.

A. & W. MACKINLAY,
Publishers, Booksellers, and Stationers,
NO. 16 GRANVILLE STREET.

HAVE on hand an extensive Stock of the following Books:—
IRISH NATIONAL SERIES.

Consisting of—

First Book of Reading,
Second Book of do.
Third do do.
Fourth do do.

Fifth Book of Reading,
Spelling Book Superseded,
First Book of Arithmetic, &c., &c.

—ALSO—

Lennie's English Grammar,
Murray's do do.
Sullivan's do do.
Carpenter's Spelling,
Murray's do.
Mavor's do.
Universal do.
Murray's English Reader,
do Introduction,
Sullivan's Geography,
Reids do.
Stewart's do.
Gallenitha do.
Morse's do.
Mitchell's do.
Woolbridge's do.
Smith's do.
Chambers' do.
Dawson's Geography of Nova Scotia,
Blake's Philology,
Swift's do.
Parker's do.
Chambers' Educational Series,
Mculloch's do do.
Litch's do do.
Grey's Arithmetic.
Town's Educational Series,
Walkingham's Arithmetic,
Thomson's do.
Reid's Composition,
Colburn's Arithmetic,
Abb's French Grammar,

Ollendorff's French Grammar,
Noel & Chapval's do.
Chambard's French Fables,
Paul and Virginia in French,
De Fiva's French Reader,
Arnold's Latin Prose Composition,
do Greek Prose Composition,
do First & Second Latin Books,
Author's Anabasis,
do Cicero,
do Virgil,
do Cæsar,
Bullion's Latin Grammar,
Edinburgh Academy's Latin Grammar,
do do Greek do.
do do Latin Delectus,
Hebrew Bibles,
do Grammars,
Phillips' School Atlas,
Lardner's Euclid,
Davio's Algebra,
do Trigonometry,
Hughes' Reading Lessons,
Colene's Algebra,
Walker's School Dictionary,
Pinnoek's History of England,
do do Greece,
do do Rome,
Chambers' School Maps, } Imported to
Phillips' do. } order.
Globe's, }

Coe's Drawing Cards, Drawing Paper, Drawing Pencils, etc., etc.
All of the above are offered on the lowest terms. A liberal discount to the trade.

IN THE PRESS

AND WILL BE PUBLISHED IN A FEW DAYS,

The Geography and History of Nova Scotia.

BY

J. B. CALKIN,

Provincial Model School, Truro.
Halifax, Sept. 1859. A. & W. MACKINLAY.

Just Published—Price 1s, 3d.

MENTAL ARITHMETIC,

CONTAINING the PRINCIPLES OF ARITHMETIC for the learner, and NUMEROUS EXERCISES with the answers, for the use of the Teacher.

BY HUGO REID,

PRINCIPAL OF DALHOUSIE COLLEGE, &c.

BY THE SAME AUTHOR :

Geography for British America—1s. 10d.

Historical Memoranda—3d.

Supplement to Lennie's Grammar.

Feb. 15.

500 dozen Phillips' Copy Books.

(April) Just received by A. & W. MACKINLAY.

PROSPECTUS

OF THE

SECOND VOLUME

OF THE

"Journal of Education and Agriculture."

EDITOR—REV. ALEXANDER FORRESTER, D. D.,
SUPERINTENDENT OF EDUCATION.

THE June number will finish the first year of the existence of this periodical. Though the Journal has not received the support that might have been expected from the parties for whose benefit it was mainly intended, still, taking all things into account, it has had a fair circulation for the first year of its history; and both the Editor and the Publishers would gladly avail themselves of this opportunity of tendering their best thanks to the friends of Education and Agriculture, and especially to the Graduates of the Provincial Normal School, throughout the country, who have exerted themselves so strenuously in obtaining subscribers. It is not our intention to make any material change upon its management during the ensuing year, but should its circulation largely increase, which we hope it may, to add considerably to its bulk without any additional charge.

We trust that the Clerks of the different School Boards will continue as heretofore to act as Agents, as well as those to whom copies of this Circular may be forwarded.

We hereby request and authorize all the Teachers in the Province to act as Agents in their locality;—and in their so doing, and thereby increasing the circulation of the Journal, we are persuaded they are but promoting their own usefulness and comfort.

As the first number of the second volume will be issued on or about the 15th of July next, the present subscribers will require to renew their subscriptions with the Publishers or Agents.

TERMS.

Single copies, per annum, - - - - - £0 5 0
Six copies to one address, - - - - - 1 5 0

In all cases payable in advance.

Subscriptions are not received for a less period than one year.

Advertisements as usual.

June 15.

A. & W. MACKINLAY, Publishers.

THE JOURNAL

OF

Education and Agriculture,

FOR NOVA SCOTIA,

IS EDITED BY

THE REV. ALEXANDER FORRESTER, D. D.,

Superintendent of Education for the Province,

AND PUBLISHED BY

A. & W. MACKINLAY.

BOOKSELLERS & STATIONERS, GRANVILLE STREET, HALIFAX,
on the 15th day of each month.

TERMS.—One Dollar per annum, payable in all cases in advance.

This Journal will furnish a good medium for all Advertisements connected with Education and Agriculture. Advertisements not exceeding six lines, inserted for 2s. 6d.; those exceeding six lines, at a proportional rate.

JAMES BARNES & CO, Printers, 179 Hollis Street, HALIFAX.