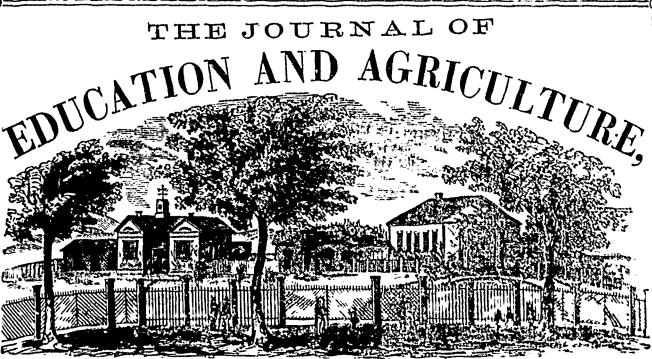
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No. 3.

EDUCATIONAL

1.---THEORY OF EDUCATION.

MORAL EDUCATION—WHAT USE SHOULD BE MADE OF THE BIBLE IN SCHOOLS.

In our last article on Moral Education, we showed that natural conscience is not a sufficient guide, that the light we derive from Nature and Providence, however valuable as an auxiliary, in certain circumstances, is equally incompetent, and that the Bible forms its only infallible illuminator and director, alike in the regulation of conduct and in the formation of character. If we are to have a sound moral education in our schools, the Bible, the whole Bible, the Bible free and unfettered by any stipulations or conditions, must be used.— It is just as essential, in moral education, to base our procedure on the only unalterable standard of morals-the Word of God, as it is to base our secular lessons in Astronomy or Mechanics on a Newton or a James Watt-and our physical exercises, on the principle of military obedience, promptitude and precision.

ought to be made of the Bible in schools, that the moral education of the young may be most extensively promoted.

And, first of all, we remark, that the Bible ought to be used in the devotional exercises of the school. That the Bible ought to be used in every formal act of devotion, whether of a more public or private character, is a position which no professing Christian will for a moment dispute. The grand and important question here is, whether in such exercises it ought to be accompanied with any analysis of its terms, or with any explanation of its meaning; and if so, of what nature. That, on such occasions, it ought to be accompanied with some exposition of its import, or with some enforcement of its lessons, in order that it may further the great end of the moral education of the young, we have not the slightest hesitation in affirming. We would not undervalue the simple reading of the Scriptures in school, neither would we restrain the agency of the Divine Spirit in rendering that reading profitable, or efficacious for the accomplishment of those purposes for which the Scriptures were given. But the real question here is, Have we done, in this exercise, all it behaves us, as instruments, with the view of promoting the moral education of the young? We say as instruments, for it is God alone that can move and influence the heart, so that the obedience of those on whom he thus operates shall not be a mere formal, external, lifeless obedience, but sincere and cordial and cheerful, We return to our theme and proceed to show the use that | proceeding from the highest motives, and with the most single-

eyed num and end. This is the prerogative of the Almighty, but we know that here, as elsewhere, he usually operates by means. And what are the means we ought to employ, in the moral education of the young, in the use of which we have a sure and valid ground to expect His blessing? Undoubtedly, we reply, one of those means is the exercise of the understanding, as well as of the eye and memory. Before the heart can be influenced by the virtues and graces that adorn humanity, a knowledge of them must pass through the understanding of the young. It is the province of the educator to see that this is done; and, if he do his part, God will do his. But may not this be effected through tho rending of the Word itself? Most certainly not. Every one who has questioned young persons on any portion of Scripturo which they may have read, will acknowledge how marvellously little is remembered or has been apprehended by them. Too generally words have been communicated and not ideas.-The emblem has been read, but no pictorial representation has been given, and therefore the truth couched under it has neither been apprehended nor received. The historical portion of Scripture has been read, and the young persons may remember some of the facts of the narmtive; but the lesson which might be valuable for life and godliness they do not see, and therefore they cannot draw it for themselves. Children do not naturally apply the lessons, and, not being alluded to by the tencher, it is not apprehended at all. But over and above all this, the mandate of the Author of the Bible is not merely to read, but to search the Scriptures. All remember the culogium pronounced upon the inhabitants of Beren and the ground thereof? " These were more noble than those in Thersulonica in that they received the Word with all readiness of mind, and searched the Scriptures daily whether those things were so." And surely this term search implies something more than a mere cursory reading or perusal of the Sacred Scriptures, even an honest, determined desire, in the use of every legitimate means, to understand their true import.-And yet again, of what avail would the mere reading of the Word be to the moral education of the young? The moral education of the young is neither more nor less than the reducing to practice of the precepts of the Divine Testimony, but how could these precepts be inculented and enforced unless they are thoroughly understood? The whole meaning of a passage or text of Scripture frequently rests on one or two words. It these are not understood, the reader may with equal profit read the whole passage in a foreign tongue. And how, in such circumstances, could the lesson, intended to be conveyed, be applied?

Thus it is plain, that if we are to have moral education in the school, and that education founded on the Sacred Scriptures, these Scriptures must be comprehended in their broad features, intellectually at least; and here comes in the instrumentality of the educator. It is his province, in the use of every legitimate means, to convey to the minds of his scholars a clear understanding of the passage read, in order that it may be applied in regulating their conduct at all times and in all places. And what is the means most likely to produce the desired end? Is he, the educator, to endeavour to convey the meaning of what is read by instruction or by explanation in words more or less simple. This is the course pursued by not a few, who oftentimes launch forth in formal discourse and eloquent strains, all explanatory, it is true, of the subject, but whether it may, or may not, be comprehended by the pupils

is another matter, and for the ascertaining of which no systematic means are taken. Or is it to be done by a catechetical process, adding to the instruction imparted a certain number of questions, to which answers are demanded? He may adopt this plan, and yet fail again; or, at any rate, in communicating to the minds of his scholars clear and accurate ideas of the meaning of the passage read? What, then, is he to do? He is to make the Great Teacher his pattern and model. And what was the method pursued by Him, in all his addresses, colloquys and discourses, as well as in all his answers to the captious cavillings of his enemies? Though in Him dwelt all the treasures of wisdom and knowledge, yet he uniformly stoops to a level with those whom he addressed, and, by borrowing figurative illustrations or pictorial representations from objects or things with which his auditors were perfeetly familiar, he communicates knowledge plain to the understanding of all, and shuts them up to certain conclusions and convictions which they could neither controvert nor gainsny. Does He sit on Jacob's well wearied and exhausted with his journey, and does a woman come hither to draw water? He, at once, enters into conversation with her, and taking the heverage-water, as an emblem of the bleshings of salvition, he describe at length upon these blussings. Do the Pharistes desire to entrap him on the matter of civil government, and do they come to him and say: "Is it lawful to give tribute to Cosar or not? Shall we give or shall we not give? But he knowing their hypocrisy, said unto him, Why tempt ye me? bring me a penny that I may see it. And they brought it .-And he said unto them, Whose is this image and superscription? And they said unto him, Casar's. And Jesus answering said unto them, Render to Casar the things that are Cassar's and unto God the things that are God's. And they marvelled at him." Again, does the same party wish to fasten upon him the charge of Sabbath violation? "They watched him to see whether he would cure on the Sabbath day." Our Saviour looked on them and asked, " Is it lawful to do good on the Sabbath day or to do evil, to save life or to kill? but they held their pence." He did not tell the Pharisees whether it was or was not lawful to do good on the Subbath day; he appealed to their consciences; he trained them; they felt the rebuke; "they held their peace." Does he sit at ment in the house of Simon, the Pharisce, and does a woman stand behind him weeping, washing his feet with her tears and wiping them with the hairs of her head, and does the Pharisee when he saw it speak thus within himself, "This man, if he were a prophet, would have known who and what manner of woman this is that toucheth him; for she is a sinner?" What answer did Christ give to the reasoning of his host? Does he say in so many words that this woman, though a great sinner, had been forgiven all her sins, and that, in token of the genuineness of her penitential sorrow and ardent affection, she had performed this service? No. What then? "And Jesus answering said unto him, Simon, I have somewhat to say unto thee. And he saith, Master, say on. There was a certain creditor who had two debtors; the one owed five hundred pence and the other fifty. And when they had nothing to pay he frankly forgave them both. Tell me therefore which of them will love him most? Simon answered and said, I suppose that he to whom he forgave most. And he said unto him, Thou hast rightly judged." Then he turned to the woman, and made the application. Such is a specimen of the mode in which Christ taught-of the way in which he accommodated himself to the capacity and experience of his auditors. And this course he pursued, not on great or extraordinary occasions, as in his more formal similes and parables, but in almost all his replies to his captious cavilers, and in almost all the intercourse he held with individuals. No one can peruse with any attention any of the evangelical stories, as narrated by Matthew, Mark. Inke, or John, without perceiving this feature not only prominently held forth, but pervading every page and almost every sentence. And why, it may be asked, did the Divine Redeemer so uniformly adopt this method? Ho did so, we would remark, in the first place, in entire accommodation to our sensible constitution. He who fashioned us, and needed not that any should testify of man, was thoroughly conversant with our dependence on our perceptive faculties, and that the greater the number of sensor brought to bear on any one fact or subject, the readier will be the access to the understanding and the more vivid the impression produced. Again, the Saviour employed this mothod with those he addressed that he might exercise and develop and strengthen their rational powers, with the view of rendering them subservient for the accomplishment of those purposes for which they were given. His method, intellectually, was out and out The Training Method, and he therefore only employed illustrations which were suited to the experience and occupations of those he addressed. But, again, the Divine Redeemer adopted this method, in order that by their own reasonings or findings he might shut up his hearers to certain moral convictions, from which they could not make their escape. Wrecked and rained though natural conscience may be by that sad entastrophe which has befallen the species, yet the Divine Redeemer never overlooks its existence, but uniformly appeals to it and uses it as far as it can go, or according to its capabilities, as an instrument for the effecting of moral results. He never resorts to Divine, or supermutaral agency, until he has exhausted that which is natural. He, in one word, pays the most protound respect to the use of means, of secondary agency, and only betakes himself to his omnipotent energy when the other fails in the accomplishment of his purposes; and even then it is always in company with the other. In this way the duty of mun and the prerogative of Deity strikingly harmonize. the beauty and force of the expression, "If ye do his will, ye shall know the doctrine whether it be of God." Such was the mode of instruction pursued by the Great Teacher, and surely there is no need of any argumentation to show that here, as in all his actings, he was perfect, absolutely perfect. None could know better than He who fashioned us the latent principles of human action, or the most accessible way of reaching the understanding and the conscience; and, if this mode was uniformly adopted by him, then the path for us is clearly marked out, we ought to walk in his footsteps-we ought to make him the model of our imitation, both intellectually and morally. In the intellectual education of the young. it is the bounden duty of the educator not merely to supply the appropriate food, or the belitting subject for the cultivation and development of each faculty, but to supply it in a way by which they shall have the opportunity of exercising their own powers, by which they shall actually do the thing themselves. This can only be done by imitating the Great Teacher, viz., by borrowing illustrations from objects or pursuits with which they are familiar, and leading them on, step by step, from the known to the unknown, from the visible to the invisible

from the temporal to the eternal. And this by a process of questioning and ellipsis, removing every difficulty out of the way, by imparting any needed information; and, when they are able, allowing them to walk, intellectually, themselves. And now let us apply all this to the method which the eduenter ought to pursue in explaining Scripture to the young, in making its truths and its precepts plain to the understanding of the mennest intellect. Is it, for example, Scriptural terms, a clear conception of whose meaning he wishes to communicate to the minds of his pupils, and with such the Bible literally abounds; such as the terms wisdom, kingdom, salvation, redemption, glory ; or, the names and titles of Christ, such as Rock, Shepherd, Bridegroom, Day-Star, Light, Life, Prince of Peace, Lamb, Judge, &c., &c.; -what is he, in these circumstances, to do? He is to picture out, by familiar illustration, the abstract meaning of the term, and lead them on, by the process already referred to, to the conventional or Scriptural meaning. Suppose, for example, he takes the term wisdom, a term which occurs some hundreds of times in the Bible, such as " Wisdom's ways are ways of pleasantness, and all her paths are peace;" "So teach us to number our days that we may apply our hearts unto wisdom;" "The fear of the Lord is the beginning of wisdom." "Now, it is an almost universal fact," says Stowe, "that all children mistake the meaning of the term wisdom, and answer that knowledge is wisdom. They, however, may be led to perceive that allimportant distinction, when you suppose a boy knowing that the fire will burn him, and yet thrusts his finger into the flame. What is he; or what would you think of the man, who, knowing that the house was burning about his head, instead of running out, yet sat still, as if in perfect security? When pletured out by such familiar illustrations, the children will quickly tall you that they believe the action is the wisdom, not the mere knowledge—that wisdom is the right application of knowledge. The same with glory in ordinary life, and the glory of the sun, moon and stars, and all God's works-the glory of Christ's work, and being in glory with him, crowned with glory, and reflecting his image-So Salvation. I may be saved from drowning or from eternal death. A finite creature might do the one act-the infinite Saviour alone can do the other." Or is it a Scriptural emblem, embodying a great and important truth, he wishes to make plain to the understanding of his scholars, -what, in these circumstances, ought he to do? Suppose it is some such passage as this, and the Bible literally teems with such, "As the bart panteth after the water-brooks, so panteth my soul after thee, O God."-Is he, as is very often done, to expatiate on the history of David's flight from and persecution by Saul, which called forth those expressions, without any allusion to the emblem, "As the hart panteth?" Or is he to enlarge on the aspirations of the sanctifled soul after God and divine things, and especially when that soul has been shut out from communion with God in those public ordinances of his grace, which have oftentimes proved so satisfying and reviving, with, perhaps, a passing notice of the condition and circumstances of David when he penned the psalm of which these words form a part? Such an exposition, or mode of explanation, would, in our opinion, be not only above the comprehension of the generality of children, but in direct opposition to the mode pursued by the sacred penmen, and especially of the Great Teacherwould, in fact, be neither doing justice to the sentiment of inspiration, nor to the mode pursued by infinite wisdom. In

order to bring out the lesson intended to be taught in this passage after a Scriptural example, or in accordance with the natural and training system, the educator should, first of all, present to the children a picture of the nature and habits of the naimal here referred to-the panting of the stag-its circumstances at the time-pursued by the huntsman, on the mountains of Juden-under the influence of a tropical sun ;-and, just when about to resign itself to its pursuers, espying all at once, from the top of some eminence, a water-brook into which it may have plunged or drank from on some former occasion, it bounds with one leap into the brook, and slakes with ineffable gratification its weary and thirsty body in its waters. And all carried on by a process of questioning and ellipses; not of sermonizing or lecturing, but questioning and ellipses; not questioning along or ellipses alone, but both together, until a full picture of the scene is presented to the mind's eye as palpably and distinctly as any visible object is presented to the naked eye. Thus, when " as the hart panteth after the water-brooks" has been from the very first pictured out, the children, intellectually at least, will easily perceive the analogy: "So panteth my soul after thee, O God." They are prepared also to draw the practical lesson from such illustrations as may have been previously suggested-interest and attention having been awakened by that which never lails to please, viz., a natural picture. Does the portion of Scripture that is read consist of a piece of hiography or descriptive history. The province of the educator in that case is not only to see that the facts narrated are apprehended and carefully stored up in the memory of the scholars, but that the lessons intended to be taught are drawn and understood. How often do we find the young perfectly familiar with the details of some thrilling Bible story, manifesting the deepest interest in these details, and yet utterly ignorant of the lessons inculcated, and by consequence, deriving no practical benefit therefrom in the culture of conscience.-How often, for example, is the story of Cain and Abel, of the offering up of Isane, of Joseph, Moses, Samuel and the like, perused, and perused over and over again, with the keenest relish and delight, and yet the scholars have no idea of the moral of the story, or of its bearing on their moral education. The narrative embodies, it may be, vastly important truth, and that truth conveyed in a form in every way adapted to their nature as imitative beings, but they have no discernment of its import, no appreciation of its value.--And what signifies all Bible knowledge unless it is reduced to practice in our general conversation, unless it exerts an influence over the tenour of our thoughts and acts? And here it behaves the educator to see that these effects are produced, not by telling the scholars the lessons so plainly deducible, but by directing them to deduce these lessons themselves, and by seeing them practically applied.

Such is a brief sketch of the way in which the Bible may and ought to be used in schools, if it is to serve the great end of a guide in enlightening and directing the conscience in moral education. We are not ignorant of the difficulties connected with this subject, or of the objections that will be brought against it. These Hifficulties and objections arise principally from the fact that our community is made up of the different brunches of the Christian Church, and that it is impossible for a teacher to expound the great principles and lessons of Bible morality without making encroachments upon the peculiarities of some one denomination; that, in

fact, any conscientious teacher who ventures to explain any passage of the Scriptures, though it may consist of nothing more than to draw the distinction between the words knowledge and wisdom, words that occur hundreds of times, must necessarily be under the influence of denominational views and tendencies. This we hold to be a great delusion. If a teacher, holding his situation under a national system of education, betrays such an amount of narrow-mindedness and bigotry as to give, in his expianation of any word or passage of inspiration, a denominational interpretation, we would unhesitatingly pronounce him to be professionally unworthy of the position he holds, and that he ought to be summarily dismissed. What would be thought of the minister of reli gion, who, on the ground of our common salvation, had been invited to officiate in the pulpit of one of another denomination, took the opportunity of commending his own peculiarlties and inveighing against those of the congregation he He would be, unquestionably, denounced Addressed ? as guilty of the most flagrant indiscretion, and as not only acting an unchristian part, but in diametric opposition to the spirit of those who invited him to occupy his present position. And so would it be with the tensher who would thus pervert the means of usefulness placed within his sphere; he would and ought to be consider ed as unworthy the position he holds and summarily dismissed. And would his confinement to the great broad principles on which all sound morality is based,—the love and the fear of God,-narrow his range of observation, or curtail in any way his sphere of operation as a moral educator? No; not in the least degree. His office, in leading his aid to his pupils with a view to their understanding any passage of the Bible, does not consist in sermons or lectures on dogmatic theology, or in discussions upon deep controverted points in religion, but in the unfolding of the plain precepts of Christianity, in the enforcement of the practice of religion, and the motives that ought to animate us in our obedience. Whether, therefore, we consider the nature of the subjects embraced in his explanations, or the mode in which these explanations are given, so as at once to train the intellect and the conscience of the young, we cannot, we think, fail to perceive the groundlessness of the objections sometimes urged against such a procedure, and the unwar rantableness of the fears sometimes entertained.

II.-PRACTICE OF EDUCATION.

MENTAL ARITHMETIC-INTEREST.

WE have already devoted considerable space to the practice of Mental Arithmetic. In our last, we endeavoured to show how it might be applied to the computation of the prices of those commodities, usually bought and sold by the merchant and the farmer. We will now proceed to present our readers with a few practical rules, by which calculations in interest can be readily made, without pen or pencil.

The interest of £100 for 1 year, at 5 per cent., is 100 shillings; i. e., 1 shilling for every pound. One perceives at a glance, that at 5 per cent., every pound in the principal pro-

duces I shilling of interest; every 10s., 6d.; 5s., 3d.; &c.—Therefore little computation is necessary; we have only to call the pounds of the principal shillings, &c., reduce our shillings thus obtained to pounds, and multiply by the number of years. For example:

What is the interest of £327 10s, for 1 year at 5 per cent.? Call the £327 10s, 327s, 6d., and reduce to pounds. 327s 6d. = £16 7s, 6d. Ans.

What is the interest of £153 11s. 8d. for 3 years at 5 per cent.? Call the £153 11s. 8d. 153s. 7d. 153s. 7d. £7 13s. 7d. × 8 = £23 0s. 9d. Ans.

There are 12 months in 1 year, and 12 pence in 1 shilling. Now, if the interest of £1 for 1 year is 1 shilling, the interest of the same £1 for 1 month is 1 penny. Hence; To find interest for months at 8 per cent., Consider the pounds as pence, and multiply by the number of months.

What is the interest of £39 for 1 month at 5 per cent.?—Call the £39, 39d. = 2s. 3d. Ans.

What is the interest of £127 2s. 6d. for 1 month at 5 per cent.? Call £127 2s. 6d., 127\(\frac{1}{2}\)d = 10s. 7\(\frac{1}{2}\)d. Ans.

Wint is the interest of £213 15s. for 7 months at 5 per cent.? Call £213 15s., 2133d. = 17s. 93d.; 17s. 93d. × 7 = £6 4s. 84d. Ans.

But the usual rate of interest in this country is 6 per cent. We therefore invite special attention to the following rules for both months and days, at 6 per cent.

To compute interest for months at 6 per cent.: Increase the units' figure by a fitth of itself, and call the result pence; take the other figures us expressing shillings; and multiply by the number of months. For example:

What is the interest of £135 for 1 month at 6 per cent.? The units' figure, 5, increased by a fifth of itself, is 6, i. c., 6d.; and the other figures express 13 shillings. So the answer is 13s. 6d.

What is the interest of £41 for 5 months at 6 per cent.?—The units' figure increased by a fifth of itself is 1 1.5d.; the other figure expresses 4s.; 4s. 1 1.5d. \times 5 = £1 0s. 6d. Ans.

What is the interest of £413 for 7 months at 6 per cent.? Call £413, 41s. 3 3-5d. = £2 1s. 3 3-5d.; £2 1s. 3 3-5d. \times 7 = £14 9s. 1 1-5d. Ans.

What is the interest of £1215 for 3 months at 6 per cent.? £1215, 121s. 6d. = £6 1s. 6d.; £6 1s. 6d. \times 3 = £18 4s. 6d. Ans.

To find interest for days at 6 per cent.: Multiply the principal by the days and divide by 3, or multiply one of them by a third of the other; cut off the two right hand figures, divide them by 8½, and take the result as pence; and consider the other figures as expressing shillings. Reject a penny for every six shillings contained in the result.

What is the interest of £93 for 21 days at 6 per cent.?—One third of 21 is 7; $93 \times 7 = 651$; cutting off the two right hand figures this becomes 6.51 shillings; 51 contains $8\frac{1}{2}$ 6 times; hence 6.51s. = 6s. 6d.; but 1d. must be subtracted, which makes the result 6s. 5d. Ans.

What is the interest of £53 for 33 days at 6 per cent.?— $33 \div 3 = 11$; $53 \times 11 = 583$; 5.83s. = 5s. 10d.; rejecting 1d., we have 5s. 9d. Ans.

What is the interest of £87 for 98 days at 6 per cent.?— Here the days cannot be divided by 3 without remainder, but the principal can. $87 \div 3 = 29$; $98 \times 29 = 2842$; 28.42s.= 28s. 5d.; rejecting 1d. for every 6s., i. e., 43d. for 28s. 5d., we have 28s. 01d. = £1 8s. 01d. Ans.

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What is the interest of £113 for 73 days at 6 per cent.?— Here neither principal nor days can be divided by 3 without remainder; so we must be content with dividing their product by 3. $113 \times 73 = 8249$; $8249 \div 3 = 2749$; 27.49]4. 27.66.; 27.60. 27.60. 27.60. 27.60. 27.60.

Five per cent is a little more difficult. To find afterest at 5 per cent.: Multiply the principal by the days and divide by 3, as in the preceding rule; cut off one figure, and consider the others as expressing pence; reject 1d. for every 6s., as before.

What is the interest of £81 for 63 days at 5 per cent.?—63 ÷ 3 ≈ 21; 81 × 21 ≈ 1701; cutting off the right hand figure, and considering the result pence, this becomes 170.1d.; 170d. = 14s. 2d.; (rejecting 1d. for every 6x;) 14s. 2d. = 21d. = 13s. 117d. Ass.

What is the interest of £117 for 148 days at 5 per cent.? 117 - 3 - 39; 148 × 32 - 5772; 577.2d. - 48s. 14d.; 48s. 14d. - 8d. - 47s. 54d. - £2 7s. 54d. Ans.

What is the interest of £149 for 64 days at 5 per cent.?— 149 × 64 = 9536; 9536 = 3 = 3178§; 317.8d. = 26s. 5§d.; 26s. 5§d. = 4§d. = 26s. 1§d. = £1 6s. 1§d. Ans.

To find interest for days at any rate per cent.: Multiply the principal by the days and the product by double the rate per cent.; divide by three, cut off two figures, and take the others as expressing pence; reject 1d. for every 6s.

What is the interest of £73 for 77 days at $2\frac{1}{3}$ per cent.?—73 × 77 = 5621; 5621 × 5 = 28105; 28105 ÷ 3 = 9368 $\frac{1}{3}$; 93.68d. = 7s. 9 $\frac{1}{3}$ d.; 7s. 9 $\frac{1}{3}$ d. = 7s. 8 $\frac{1}{3}$ d. Ans.

What is the interest of £63 for 33 days at $4\frac{1}{2}$ per cent.? 33 \div 3 \leftarrow 11; 63 \times 11 \leftarrow 693; 693 \times 9 \leftarrow 6237; 62.37d. \leftarrow 5s. 2\frac{1}{4}d.; 5s. 2\frac{1}{4}d. \leftarrow 1d. \leftarrow 5s. 1\frac{1}{4}d. Ans.

What is the interest of £119 for 34 days at $1\frac{1}{2}$ per cent.? 119 \times 34 - 4046; (here, twice the rate being 3, it would be nugatory to both multiply and divide by the same number;) 40.46d. - 3s. $4\frac{1}{2}d$.; 3s. $4\frac{1}{2}d$. - $\frac{1}{2}d$. - 3s. 4d. Ans.

The rationale of these rules involves a thorough understanding of interest, and can best be taught by the living teacher.

ADDRESS ON NATURAL HISTORY BY PROF. AGASSIZ.

The subjoined Lecture of Prof. Agassiz we would most earnestly commend to the diligent perusal of all the Teachers and others interested in the cause of education throughout the Province. We have long been impressed with the conviction that there is no branch of study more interesting or inviting or useful to the young than that of Natural History in all its compartments, and have laboured to the best of our ability in carrying out this conviction, by imparting a knowledge of the outlines of Chemistry, Mineralogy, Botany, Zoology, and Geology to the students attending the Normal School. This we have done not merely for the purpose of inspiring, if possible, the future teachers of the Province with a relish and love for such studies, and thereby diffusing the same among the rising generation, but also for the purpose of rendering them all the more expert in carrying out the system of education known by the name of natural or training. One of the grand characteristics of this system is to lead the scholars on from the known to thounknown, from the visible to the invisible. This can only be done by coming down to a level with the youngest and most obtuse amongst

them, by borrowing illustrations or pictorial representations from objects and things and pursuits with which they are familiar. The field most proble in these illustrations is that of nature, whether stones, plants or animals. This field the GreatTeacher ransacked, and, if we would imitate with success his example in this respect, we must be prepared to levy a tribute on the same; and to do this effectually, we require to study these objects scientifically.

It is not, however, because this lecture recommends the study of Natural History that we prize it so highly. It is mainly because of the mode of teaching therein set forth and inculented as applicable not only to one, but to all branches of learning. That mode in all its essential features, exactly accords with our views, and just because it approximates most closely to the inture of the beings educated, so is it in our humble apprehension the nearest to perfection. Professor Agnssiz, perhaps now the greatest of living naturalists, and who glories in his vocation as a teacher of youth, has discovered what, in our opinion, ought to constitute the grand aim and end of all education, viz., the expansion and devel opment of mind by every legitimate means. This is to be effected only in one way, viz., by making provision for all the faculties and sensibilities and energies of the mind being vigorously exercised,-exercised not by words or signs but by things or realities.

"I wish to awaken a conviction that the knowledge of nature, in our days, his at the very foundation of the prosperity of States; that the study of the phenomena of nature is one of the most efficient means for the development of the human faculties, and that, on these accounts, it is highly important that that branch of education should be introduced into our schools as soon as possible.

To satisfy you how important the study of nature is to the community at large, I need only allude to the manner in which, in modern times, man has learned to control the forces of inture, and to work out the material which our earth produces. The importance of that knowledge to the welfare of man is everywhere mainfested to us; and I can refer to no butter evidence to prove that there is hardly any other training better fitted to develop the highest faculties of man, than by alluding to that venerable old man, Humboldt, [since dead,] who is the embodiment of the most extensive human knowledge in our day, who has acquired that position, and who has become the object of reverence throughout the world merely by his devotion to the study of nature.

If it be true that a knowledge of nature is so important for the welfare of States, and for the training of men to such high positions among their fellows, by the development of their highest faculties, how desirable that such study should form a part of all education! and I trust that the time when it will be introduced into our schools will only be so far removed as is necessary for the preparation of teachers capable of imparting that instruction in the most elemen-

tary form.

The only difficulty was to find teachers equal to the task; for in his estimation, the elementary instruction was the most difficult. It was still a mistaken view with many, that a teacher is always sufficiently prepared to impact the first elementary instruction to those entrusted to his care. Nothing could be farther from the truth; and he believed that in entrusting the education of the young to incompetent teachers, the opportunity was frequently lost of ne-

truth; and he believed that in entrusting the education of the young to incompetent teachers, the opportunity was frequently lost of unfolding the highest capacities of the pupils, by not attending at once to their wants. A teacher should always be far in advance of those he instructs; and there was nothing more painful than for a teacher to feel that he must repress, if possible, those embarrassing questions which the pupils may wish to ask, but which may be beyond his reach.

He conceived that nothing but the inexhaustible thirst for know-ledge which is imparted in human nature, enables children to sustain their interest in study, when the elements are imparted to them in the manner they are. Could anything be conceived less attractive than the learning of those twenty-four signs which are called letters, and to combine them into syllables, and then into words, and all taught in the most mechanical and hum-drum way, as if there was no sense in it! And yet, there is a deepsense in it and there is, in those very letters, materials for the most attractive and instructive information, if it were only in the head of the teacher when he has to impart it. Let him show his young pupils how

men have learned to write their thoughts in words; how the art of writing was invented; in what way it was done in the beginning; how it has been shortened in its operations, which are now so rapid that the writer follows the words of the speaker with as great certainty as if he saw them already written, and had only to copy them; and then the child will be eager to emulate that, and will be ready to avail himself of the alreadages which a possession of the art will give him over those who have it not.

But then, I say in order to create this interest in the child, it is not sufficient that he be taught mechanically, that such a figure is A, and that B, and C, and so on, but he is to be shown how men came to write the letters in that way, and that the letters are only syllables to express thoughts, and that the earliest and simplest ways of representing these thoughts was by showing objects as they are. I have been a teacher since I was fifteen years of ago, and I am a teacher now, and I hope I shall be a teacher all my life. I do love to teach, and there is nothing so pleasant to me as to develop the faculties of my fellow-beings who, in their early age, are intrusted to my uzre, and I am artisfied that there are branches of knowledge which are better taught without books than with them; and there are some cases already so obvious that I wonder why it is that teachers always resort to books when they would teach some new branch in their schools.

When we teach music, we do not learn it by rote, we do not commit it to memory, but we take an instrument and learn to to play upon it. When we would study natural history, instead of books let us take specimens—stones, minerals, crystals. When we books let us take specimens—stones, minerals, crystals. When we would study plants, let us go to the plants themselves, and not to the books describing them. When we would study animals, let us observe animals; and when we would study geography, let us not resort to maps and text-books, but take a class of children and go into the fields, and look over the hills and valleys, the lakes and rivers, and learn that a knowledge of the earth consists in knowing what mountains and hills there are, what rivers flow, what are the accumulations of water, and the expanse of land. And then, having shown them that land, let us show them a representation of what they know, that they may compare it with what they have before them, and tell them that that is the way in which the thing that they have seen may be represented, and then the maps will have a meaning for them. Then you can go to maps and books but not before you have given them some hints as to what there things mean, and what east, west, north and sauthare; not merely by representing them by the letters E. W., N. and S upon a square piece of paper, with all sorts of dots upon it, one representing Spain, the other France, the other England, the other the United States, which in their estimation have about the size of the paper on which they bave learned it.

I well remember that when I was a teacher at Neufchatel, I objected to this mode of teaching geography in our schools. atisfied that it could be done otherwise, and I asked that I might have a class of the youngest children, who were admitted to the school, and teach them in another way. The Board of Education would not grant me leave, and I resorted to another means my own children, my oldest, a boy of six, my girls, children of four and a lialf and two and a half years, one hardly capable of walking, and invited the children of my neighbours. Some came upon the arms of their mothers, others were able to walk by themselves. I took these young children upon a hill above the city, and there showed them the magnificent crescent of the Alps standing before them, their peaks piercing the clouds, and told them by far away they were, then pointed to the hills between these, and the lake at our feet; and when they had become very familiar with all these, and enjoyed the beautiful scenery. I took from my portfolio a raised map, in which the natural features of the country are attempted to I showed them everything represented on a small scale, and they recognized the very peaks they saw before them; they saw the lake which was spreading before them as a blue spot upon that map; and so they learned the meaning of maps, and afterwards could ap-preciate the map which was not even raised, but only with black and white marks representing the same features. From that day, geography became no longer a dry study, but a desirable part of their education.

I have undertaken to address you upon the desirableness of introducing the study of natural history into our schools, and of using that instruction as a means of developing the faculties of children and leading them to a knowledge of the Creator. Natural History, I have already said, should be tought from objects and not from books, and you see at once that this requires teachers who know these objects; not only teachers who can read and say whether a lesson has been committed faithfully to memory, but they must know these objects before they can teach them, and they should bring these objects into the school, and not only exhibit them to the scholars, but place them in the bands of each scholar.

Some years ago I was requested by the Secretary of the Board of

Education to give some lectures on Natural History to the teachers in different parts of the State, in those interesting meetings which are known as Tracher's Institutes. I had been asked to give some instructions upon insects, that the teachers might be prepared to alow what insects are injurious to vegetation and what are not, and he the means of imparting that information to all.

I thought the best way of answering the call was, to place at once an object of this kind into their own hands, for I knew that no verbal instruction could be transformed into actual knowledge; that whatever I might say would be carried away as words, and not as the impression of things-and what was needed was the impression Therefore I went out shortly before the exercises commenced, and collected several hundred grasshoppers and brought them into the room, and having first etherized them, so that they should not jump about. I put one of them into the hands or each teacher. It created universal laughter. It appeared reliculous to all. But, I have the estisfaction of saying that the examination of these objects had not been carried on long, recovered at the thing, interested, and instead of looking at me, they looked at the thing. They these objects had not been carried on long, before every one became

At first, I pointed to things which could not be easily seen. They said, 'There things are too small to be seen 'I replied, 'Look again, and learn to look, for I can see things ten times smaller than those to which I have called your attention; it is only want of practice that readers you unable to see them. The power of the human oyo is very great, and it is only the want of practice which sets such narrow limits to its power.

Having examined one object, take another which has some similarity to it, and analyze its parts, and point out the differences between that and the object examined before, and you are at once upon that track, so important in all education, which consists in comparison. It is by comparison that we ascertain the differences which exist between things; it is by comparison that we ascertain the general features of things; and it is by comparison that we reach general propositions. In fact, comparisons are at the bottom of all philosophy, and without comparisons we can never generalize: of all philosophy, and without comparisons we can never generalize without comparisons we never get beyond the knowledge of isolated disconnected facts.

Now, do you not see what importance there must be in such training - how it will awaken the faculties and develop them - how it will be suggestive of further inquiries and further comparisons? And as soon as one has begun that sort of study there is no longer a limit to it. In this way we can become better acquainted with ourselves we can more fully understand our own nature and our own relations to the world at large. We can learn how we are related to the whole animal kingdom, if we once begin that comparison. At first it might seem difficult to find any resemblance between man and a quadruped, or between the quadruped and birds, or between birds and repilles, or between reptiles and fishes; and if we were to attempt to compare a fish with man, the very idea would seem preposterous; and yet, the two are constructed upon the same plan; the same elements of structure which we may trace in the fish are presented again in man, only in a more elevated combination; and it may be shown, in the simplest way, that there is a plain gradation leading up from the fish to the noble stature of man. And these comparisons are the best means of developing all our faculties, because they call out not only the powers of observation, but also the ability of the mind to generalize and at the same time discriminate. They call out, in fact, all those abilities which distinguish one man from another, which give men power over other men-the ability of discriminating judiciously and of combining properly—the ability of ascertaining the differences as well as the resemblances. The one constitutes the art of observing; the other constitutes the art

of philosophy, the art of thinking.

The didicultart of thinking can be better fostered by this method, than in any other way. When we study logic, or mental philosophy, in the text books, which we commit to memory, it is not the mind which we cultivate, it is memory alone. The mind may come in, but if it does, it is only in an accessory way. But if we to think by unfolding thoughts ourselves, from an examination of objects brought before us, then we actually learn to think, and to

apply this ability to think to the realities of life.
It is only by the ability of observing for ourselves that we can free ourselves from the burthen of authority. As long as we have not learned to settle questions for ourselves, we go by authority, or we take the opinion of our neighbour ;-that is, we remain tools in his handa, if he chooses to use us up in that way, or we declare our inability to have an opinion of our own. And how shall we form an opinion of our own otherwise than by examining the facts in the case? And where can we learn to examine facts more readily than by taking at first those facts which are forever unchangeable those facts over which man, with all his pride can have no control? Man cannot cause the sun to move in space, or change the relations of the members of the solar system to each other, or make the seed to sprout out of its season, or make the oak produce apples. Man must take the phenomena of nature as they are; and in learning

this he learns truth and humility. He learns that what exists in nature is true, and to value truth, and that he must boy to what is, -to what he cannot change in the nature of things. But, at the same time, he learns how to ascertain what things are; and how they came to be; and while he learns that, he acquires a power which can never be lessened, but which is ever increasing in proportion as his opportunity for further observation is increased.

It is only by the development of all his faculties that we can make man what he may be; it is only in giving to his mind the food which will nourish all his faculties, that we accomplish this end. If we only cultivate the imagination, the taste, the memory, the culture of the senses is neglected, the ability of observing is neglected, and all those abilities which man may acquire by the culture of his senses,

by the art of observing, are left untrained.

The reason why we so frequently see sholars who do not do walf in school is because their abilities lie in another direction from that which suits others; it is because one great element is left out of the system of colucation-that which appeals to the somes, to the power of observation-that which requiresactivity and manipulation; and while only the imaginative faculties and the memory are cultivated, which will suit some minds perfectly, and be the very food they want, others are left starving for the want of the food which their nature requires.

I say, therefore, that in our age, when the importance of the study of Natural History is so manifest, by its many ap lications to the wants of man, I would add that one means of culture to our system of education, and add it as soon as it is possible to educate the teachers who may be capable of imparting the information; and that can be done easily by following the same wise method which has been followed in the introduction of every other branch. How was it when Physical Geography was introduced into our Schools? One man went about from school to school to give instruction in that

He had his pupils, and those pupils are now teachers. Do the same thing now. Select a few men who have the aptitude and the practical skill to teach, and let them go forth, to the Teachers' Institutes at first, and then into the schools. Let them show what can be taught, and very soon the information will be spread abroad, the ability to teach will be acquired, and in a few years we may have a system of education embracing that important branch that is wanting now, and which I believe to be really one of the most important additions which can be made to any system of education.

III .-- OFFICIAL NOTICES.

NORMAL SCHOOL .- The Summer Term of this Institution will close on Thursday, the 29th of this month. The private examinations will take place on the 22nd, 23rd, and 24th, and the public on Wednesday, the 28th; and Thursday, the 29th. On the first of these days a specimen of practical exercises in the Model Schools will be given ;-on the second a full review will be taken of the Training System, along with the usual closing services.

The next, or Winter Term, will commence, as usual, on the second Wednesday of November, that being the ninth

day of the month.

Dr. Forrester requests that all applications for Normal Trained Teachers be forwarded to him before the end of this month.

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.

As the following queries are of general interest, we have thought fit to publish them, and to send our answers through the Journal :-

Pannsnoro', 6th September, 1858.

The Rev. Dr. Forrester,-DRAR SIR

1. Mr. McLellan has closed his Grammar School here, after teaching three months in the half-year ending 1st November next. He wishes to draw the allowance, 16 5s. currency, for the three months services, and the difficulty is, that the school was not so full as the School Act points out as necessary. The fault, however, was not his. He had a much larger subscription than the Act requires, (all paid, I believe.) and taught faithfully the period claimed for, and had good reason to expect a full attendance of scholars. The number in attendance was only ten (10) instead of twenty (20), and the average daily attendance 7 or 8-all at the higher branches. However, the Commissioners are willing that he should have the allowance; but would like your sanction, under the circumstances, before drawing for it. The Commissioners are constantly called upon to overlook the strict letter of the law when dividing the monies, otherwise much of it would remain in the Treasury, to the injury of schools.

2. Can the proposition for the Grammar School (if allowed) he drawn before the termination of the current half-year

1st November next?

3. If he (Mr. McLellan) should fail in procuring the Grammar School allowance, would there be any impropriety in giving him a share of the Common School allowance in November next?

Your reply to the above queries is required on account of objections raised by some parties. Please let me have it at your earliest convenience. Yours respectfully,
T. D. DICKSON.

Query 1st. It is plain from the statement made that Mr. McLellan has no legal title to the Grammar School allowance for the time specified, and that, if he obtain it, it must be by a relaxation of the law on the point. This relaxation none but the Government or the Legislature can make :but it appears to me that the case is just one in which either might, with all propriety, interfere. No blame can be attributed to Mr. McLellan, who was, I believe, in overy respect, competent to discharge the duties of the situation. He commenced the school in good faith, and when, at the end of the quarter, he found he could not muster the legal number, he resigned. Were a fair representation of the case made by the Commissioners to the Provincial Secretary, I have little doubt but it would receive a favourable consideration.

Query 2nd. The Financial Secretary generally orders the money to be paid when earned, provided he is satisfied that the party or parties have a legal claim to the same.

Query 3rd. The money voted by the Legislature to the county, or section of county, over which the Board of School Commissioners may preside, is entirely under their control, and at their disposal, for the emolument of the Teachers that may be labouring within their bounds. might be well, were there some more specific principles laid down to regulate the various Boards in the distribution of But, even if there were, the Boards would require to be invested with certain discretionary powers to enable them to adapt themselves to the circumstances that must necessarily, in educational matters, arise. We apprehend the case under consideration to be one in point; and would hold it to be no small hardship to Mr McLellan, in the event of his not receiving a Grammar School allowance for the time specified, were the hands of the Commissioners so tied up, that they could not fall back on the Common School Fund placed at their disposal, and grant out of that fund the proportion of a first class Common School Teacher for the three months Mr McLellan was engaged teaching.

IV--EDUCATIONAL INTELLIGENCE.

COLONIAL.

NOVA BCOTIA.

On the 26th and 27th ult. the Superintendent of Education visited the District of Eastern Hants, addressed public meetings on the subject of Education at Elmsdale, Gore and Kennetcook, and held an Institute at the last-mentioned place for the benefit of the Teachers.

His Excellency Sir Houston Stowart, Admiral, &c., and Lady Stowart, paid a visit to the Normal School on 24th ult., and to the Model Schools on 25th, and expressed themselves highly gratified with what they had seen and heard.

NEW BRUNSWICK.

We observe that the Chief Superintendent of Education is prosecuting his visitations throughout this Province with indefatigable zeal, addressing public meetings on the subject of Education and holding Trachers' Institutes, which are numerously attended. I is carnestly hoped that the Board of Education in this Province will erelong de something effective towards the remodelling and thorough equipment of a Normal School Establishment. This seems to be the main thing now awanting to complete the educational machinery of New Brunswick.

PRINCE EDWARD ISLAND.

The Board of Education in this beautiful Island is evidently bestirring itself. We observe in the Newspapors of the Colony an advertisement for a Head afaster to the Normal School, who must be qualified to conduct that Institution according to the Training System as founded by David Stowe, Esq., Glasgow. This is noble. The inhabitants of the Island have already attempted to carry out this system, but a series of untoward circumstances prevented them from accomplishing their design. And yet they are not to be builled or driven back from their original position. They seem determined to persevere notwithstanding all past difficulties and disappointments. Let them hold on, and there is not the shadow of a doubt as to their ultimate success.-They are already in advance of the whole of British North America in their support of Education, the purely free system having now been in operation for a number of years. All that they now require is the elevation of the quality of their E. ention, and this can only be effected through the medium of a thoroughly equipped Normal School. Nothing should be begrudged here. It were the very height of folly, after all that has been done, to display anything like a parsinconious spirit here. The Normal School of any country is, and ought to be, the exponent of its Educational state.-We hope to see this ere long in the Island.

OUTLINE OF THE PRUSSIAN SYSTEM OF EDUCATION.

The system of Public Instruction, in Prussia, embraces three degrees, provided for in three classes of institutions. We will confine our attention to the first of these, namely, Primary Instruction, which is designed for the mass of the

Prussia is divided into ten provinces. Each province is divided into regencies, and these are divided into circles, which are again subdivided into parishes. The chief authority in the department of Public Instruction, is the Minister, who also has charge of ecclesiastical and medical affairs. He is assisted by a council which meets usually twice

a week for the transaction of business. Each province has its president and council, having functions in the province similar to those of the ministerial council in the kingdom at large. Each regency has also its president and council. This last named committee examines and appoints all teachers of primary schools within the regency, superintends the schools, and collects the school fees. The next authority is the inspector of a circle, who has charge of several parishes, ; and is usually a clergyman while the councillors are laymen. Next below the inspector is the parish school committee ; which is the immediate authority. Each parish must have its school and its school committee. Thus, there is a regular series of authorities from the teacher up to the minister of state, and every part of primary instruction is entirely within the control of an impulse from the central government, and takes its direction according to the will of the highest nuthorities. With such a system, it is obvious that the provisions of any law may be successfully enforced.

The cardinal provisions of the school system of Prussia, BL9 :

First, That all children between the ages of seven and fourteen years hall go regularly to echool. This is enforced by the school committee, who are required to enforce the penalties of the law.

Second, That each parish shall, in general, have an elementary school. Where the inhabitants are of different religious persuasions, provision is made either for separate schools, or for the religious instruction of the children by their own pastors.

Third, The education of teachers in seminaries adapted to the grade of instruction to which they intend devoting themselves. Their exemption from active military service required of other citizens. A provision for their support during their term of study. A preference given to them over tenchers not similarly educated. Provision for the removal of the incompetent or immoral. A provision for the support of decayed tenchers.

Fourth, The authorities which regulate the schools, and refiler them a branch of the general government, and The teachers in fact, its officers.

Under this system of organization and administration, the public schools of Prussia have increased very rapidly, and have attained, within the last half century, to a high degree of excellence. So effectual has it been in securing the bles sings of education to all, that in 1846, in the standing army of 122,897 men, only two men were found, who could not both read and write.

Two degrees of primary instruction, are distinguished by law; the elementary schools, and the burgher schools. The elementary schools propose the development of the human faculties, through an instruction in those common branches of knowledge which are indispensable to every person, both of town and country. Every complete elementary school necessarily embraces the nine following branches: 1. Religion -morality based on the positive truths of Christianity; 2. The German tongue, and in the Polish provinces the vernacular language; 3. The elements of geometry and general principles of drawing; 4. Calculation and applied arithmotic: 5. The elements of physics, of general history and the history of Prussia; 6. Singing; 7. Writing; 8 Gymnastic exercises; 9. The more simple manual labors, and some instructions in the relative country occupations. The burgher schools carry on the child until he is capable of manifesting his inclination for some particular profession.

Teachers are required to adopt the methods best accommodated to the natural development of the human mind. The committees are to watch over the methods of the master, and to aid him by their counsel; never to tolerate a vicious method, and to report to the higher authorities should their admonitions be neglected. Parents have a right to scrutinize the system of education by which their children are taught; and the higher authorities are bound to have their complaints thoroughty investigated. But parents are bound to co-operate with their private influence in aid of the public discipline; nor are they allowed to withdraw a scholar

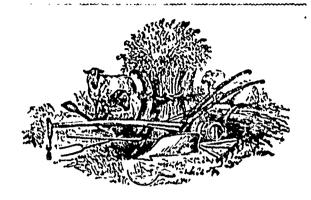
from any branch of education taught in the school as neces-

An ordinance passed in 1819 thus describes the well qualifled teacher: " In order that a master may be cambled to fulfil the duties of his station, he ought to be religious, wise, and alive to the high importance of his profession. He ought thoroughly to understand the duties of his station, to have ucquired the art of teaching and managing youth, to be firm in his fidelity to the state, conscientious in the d'scharge of his duties, friendly and prodent in his relations with the parents of his children, and with his fellow citizens in general; final ly, he ought to inspire all around him with a lively interest in the progress of the school, and to render them favorably inclined to second his own wishes and endeavours." In order to secure the education of such schoolmasters, each department is required to support a Normal School for the training of young men to supply the yearly vacancies in the ranks of the teachers of the department. Where the numbers of Catholics and Protestants are nearly equal, there is usually a Normal School for each sect. But where a very marked inequality exists, the teachers of the least numerous sect, are obtained from the Normal Schools belonging to that sect in a neighbouring department, or by smaller establishments in the same department annexed to an elementary school. Normal Schools for the simultaneous education of both arcts are allowed when the pupil teachers can obtain close at hand suitable religious instruction, each in the doctrines of his own church. The Normal Schools are generally established in small towns, in order to preserve the pupil teachers from dissipations, temptations, and habits not suited to their future profession, without subjecting them to a monnstic seclusion. None are admitted into a Normal School but those who have passed through a course of instruction in an elementary primary school; nor can any young man bo received of the excellence of whose moral character there is the least ground of suspicion. Directors of Normal Schools are enjoined to conduct the pupil teachers, by their own experience, to simple and clear principles, rather than give them theories for their guidance; and with this end in view, primary schools are joined to the Normal Schools, where the pupil teachers are practised in the art of teaching. course of instruction lasts three years, but for those who are sufficiently advanced when they enter not to require the first year's instruction, the course is reduced to one of two years. Foung men of good character who are not able to support themselves at a Normal School, are educated gratuitously, and are obliged at the termination of their course to accept the places assigned them by the provincial consistories. The provincial consistories have the lumediate surveillance of all the Normal Schools in the different departments of their respective provinces, and the provincial ec-

religious instruction of their respective sects. Under these regulations a large body of men have been trained and sent forth, the fit instructors of the Prussian youth. According to the testimony of Mr Kny, a distinguished English traveller, the Prussian teachers are a great body of educated, courteous, refined, moral, and learned professors, Inhoring with real enthusiasm among the poorest classes of their countrymen. They are wholly devoted to their duties, proud of their profession, united together by a strong feeling of brotherhood, and holding continual conferences, for the purpose of debating all kinds of questions relating to the management of their schools. So highly are they respected by the pensants, that if you tempt a Prussian pensant to find fault with the schools, he will tell you how good the school is, and how learned the teachers are.

clesinstical authorities have the especial surveillance of the

AGRICULTURAL.



I .-- THEORY OF AGRICULTURE.

A SUPPLY OF AIR NECESSARY TO THE ROOTS OF PLANTS.

The main object of the practical farmer is to raise from the dead earth the living plant; and in order to do this, it has been found necessary in all countries, and in all ages of the art, to break up, and more or less to pulverise the surface soil. As this is the natural station for all our cultivated crops and where they obtain a large portion of the necessary elemental food requirite for their development and maturation certain conditions of the said surface become absolutely necessary. Moisture, warmth and air, in due proportions, are indispensible, both to the roots which are extended through the soil in rearch of mineral food, and to the stem and leaves which appear above the surface, one of whose chief functions being the absorption of gaseous matter from the surrounding atmosphere. An excess of moisture is commonly more injurious to plants, than the extremes of heat and air; for when a soil becomes saturated with water for any considerable time, air is in great measure excluded from its pores, and the slow and constant evaporation which is going on at the surface, keeps down the temperature to a degree mumeal to the healthy progress of vegetation. For a soil, therefore, to be made porous, so as to freely admit air, warmth and moisture, with the capability of any superfluous amount of the latter freely percolating away, constitutes an anxiom on which all our operations of ploughing, trenching, digging, drawing, &c., are founded.

Soils, it is well known, vary much in their chemical composition and inclaimed texture. The success of many crops depends as much upon the latter as upon the former; and in no case can the natural or artificial consistency of the soil be safely disregarded. Most of the winter wheat in Canada is raised on summer fallows; but the operation of fallowing is often so imperfectly done that a diminished crop of inferior quality is the inevitable result. Wheat, it is true, naturally covets a close soil; yet the deeper and more throughly it is pulverised, so as to allow air, warmth and moisture freely to come in contact with the roots of the young plant, the more freely will it grow, and the more abundant will be the produce. If, however, water should in any considerable quantity stagnate, so as partially to exclude air, and by surface evaporation produce cold, underground draining is essential to the procuring

of a profitable crop.

That the contact of air to the roots of plants was always considered necessary, is evident from the oldest agricultural writers; but evident from the oldest agricultural writers; but the principle was never so fully understood and acted upon, as it has been of late years. The first and most striking instance confirmatory of the opinion was the fact of large, full-grown, ornamental forest trees having been killed by their roots being too deeply covered up with earth when leveling lawns; and planters and gar-deners have long been aware of the injurious effects of planting as well as sowing too deep. Formerly it was thought that the earthy materials in which valuable exotic plants were to be placed could not be too finely sifted and mixed; whereas experience at length showed that the small particles of such soils soon run together and become a compost mass after heavy rains, thus operating against the extension of the young roots, and in great measure excluding the external air and moisture. Among coarser and looser materials, however, a considerable body of air was found to repose, and the more active fibres to extend much more fuxuriantly than in closer and denser soils.

The gardener's improved practice is only another proof how much a porous soil and presence of air are necessary to the roots of plants; and yet we often see the most fuxuriant vegetation produced by soils which are apparently very close in texture; such as alluvial soils and fertile clays. Both these descriptions of soils being composed of the finest atoms, become exceedingly close and compact if undisturbed; but when ploughed or otherwise periodically moved, the surred portion attracts as much of the qualities of the air as suffices for the following crop. It is rather remarkable that while oak thrives best on a clayey subsoil, it does not seem to affect rich alluvial land, owing probably to its closeness of texture preventing all access of air to the place of the roots

Aquatic plants, which live entirely submerged, although defended from external air, receive as much as they need from the surrounding water, which always contains a notable measure, besides nutritive bodies in solution, which form the pabulum of plants, whe-

ther aquatio or terrestrial.

Another tribe of plants are attached to the earth so slightly that their system of roots is nothing compared with the bulky heads sustained; and as these plants are mostly found on rocks, or on the driest tracts of country, it is evident that the greatest portion of their nutriment is drawn from the atmosphere Another tribe of securious and beautiful flowering plants is called Epiphytes; because they attach themselves to the stems and branches of trees, not to sustain themselves by extracting their juices, but to be supported in the deep shade and moist air of thick tropical woods. Some of these are called air piants, and grow as well in a basket without earth, suspended in a warm, damp, shady place, as if they were in their native habitat

Thus it is apparent that atmospheric air is essentially necessary to plants, and as much so to the roots, as to the stem and foliage; and it is this fact, as already observed, that justifies all the means of cultivation which the farmer and gardener have recourse to with a view of rendering the staple of the soil more loose and consequently more permeable to all atmospheric influences.

There is one circumstance, however, which deserves to be noticed along with these general remarks; it is this, that all seeds require to be closely embedded in the soil, that is, they should be in close contact with the mould on all sides; and, that this should be com-pletely secured, some seeds in particular soils require a mechanical pressure of the earth upon them, as wheat for instance. Now, we have only to consider that as the soil has been previously propared, and more or less reduced to the finest practicable state, a comiderable volume of air is incorporated therewith, and that this air, according to its temperature and the moisture of the soil, faciair, according to its temperature and the moisture of the con, inclitates the germination of the seed, and continues to assist the development of the plant. To obtain this close embedding of the seed on light, porous, soils, it is the practice to press it in, a pr tice which is found of service to wheat, peas, beans, and almost all small seeds; but which would be of no avail without the previous disruption and teration of the soil.

All these matters premised, it only remains to conclude with a general declaration that in all our practices and means employed for the amelioration of the land, everything that can be added or taken away, every operation performed, and every implement used in the culture, should all have for their ultimate object, either directly or indirectly, the breaking up of the compact and impervious surface, so that constant and copious supplies of air may be freely admitted to the roots of plants .- Canadian Agriculturist.

II.-PRACTICE OF AGRICULTURE.

AUTUMNAL FARM WORK.

In a former article we mentioned two items of farm labor that ought to be attended to in the autumn, viz : seeding lands to grass and preparing rough lands for cultivation. The next item to which we find pleasure in calling attention, and which, strictly, ought to precede all others, is that of

DRAINING.

And we beg of the reader not to come to the sudden conclusion that we make a hobby of this subject, but to give it thought, observation, and such careful investigation as his opportunities will permit. All of us have been taught to believe that manure is the great essential in farming; it is so; but thorough draining follows close upon it in importance, and we are convinced that we cannot do any farmer a better service than by pressing upon him a sense of its great value. Judge FRENCH's new work on Farm Drainage is finding its way into the farm-houses in every direction, and will

be the means of adding large profits to the agricultural productions of New England.

It is not our intention now to give the details of the operation, as that has been pretty thoroughly done in these columns,—but we desire to call the attention of our readers to the subject, and ask thom to consider it well. In the meantime, we advise every farmer to get French's Farm Drainage, or Waring's Elements of Agriculture, or both, and make them a study as they progress in the practical operation of the work. From the latter work, we give below some of the

ADVANTAGES OF UNDER-DRAINING.

1. It prevents drouth.

2. It furnishes an increased supply of atmospheric fertilizers.

3. It warms the lower portions of the soil.

- It hastens the decomposition of roots and other organic matter. 5. It accelerates the disintegration of the mineral matters in the soil.
- 6. It causes a more even distribution of nutritious matters among those parts of the soil traversed by roots.

7. It improves the mechanical fexture of the soil.

8. It causes the poisonous excrementitious matter of plants to be carried out of reach of their roots.

9. It prevents grasses from running out.

10. It enables us to deepon the surface soil-by removing excess of water.

11. It renders soils earlier in the spring.

It prevents the throwing out of grain in winter.

13. It allows us to work sooner after rains.

14. It keeps off the effects of cold weather longer in the fall.

15. It prevents the formation of acetic [that is, sour, -vinegar contains one or two ounces in a pound of acetic acid.-Ed.] and other acids, which induce the growth of sorrel and similar weeds.

16. It hastens the decay of vegetable matter, and the finer comminution of the earthy parts of the soil.

17. It prevents in a great measure, the evaporation of water, and the consequent abstraction of heat from the soil.

18. It admits fresh quantities of water from rains, &c., which are always more or less imbued with the fertilizing gases of the atmosphere, to be deposited among the absorbent parts of soil, and given up to the ne essities of plants.

19. It prevents the formation of so hard a crust on the surface of the soil as is customary on heavy lands.

We will add another item to make out the score, and one of no less consequence than the most important he has named.

20. It provents, in a great measure, grass and winter grains fre being winter-killed.

In May last, upon an examination of their fields, farmers were astonished at the amount of their lands which they found bare, in consequence of the winter-killing of grass and grain. We are compelled to confess in fairness, that this destruction was caused by the coating of ice which covered the surface during most of the winter and a portion of March and April. But the question arises, "If the land had been thoroughly under-drained, would the ice have remained upon it so lorg, and clung to it, like the shirt of Nessus, until the breath of lite was gone?" We think not—and look upon this as one of the chief merits of under-draining. But our story is getting long, for a single topic, and we must leave it to say a word upon the subject of

TOP DRESSING GRASS LANDS.

The annual top dressing of grass lands, or even doing it once in two years, will save a heavy item of cost in the matter of plowing and re seeding. Quite moist lands may be kept in grass, yielding a ton or a ton and a half per acre, for fifty years in succession, if they are frequently top dressed, and seed sometimes scattered with it, or if the grass is allowed to go to seed occasionally before it is

It is an excellent time to apply composted manure as a topdressing immediately after the hay is carried from the field, as the young grass will grow up and cover it in a few days. It then supplies the roots with new food, and gives them a vigorous setting for

If this work is not already done, it should be, before the grass ceases to grow, so that the autumnal rains shall moisten the manure and carry its fertilizing properties among the roots.

There are some other items which we should be glad to present, but our space for to-day is exhausted .- N. E. Farmer-

PAPER ON SHEEP HUSBANDRY.

BY JOHN FOOTT, PRESIDENT EAST DURHAM AGRICULTURAL SOCIETY, CANADA.

ry at this busy season of the year, for I have not been able to devote sufficient time and attention to the subject, to do it anything like justice. I know the subject is of great importance to us as Farmers, as well as to the country at large, and I fear that the paper which will be read to you will be but a poor attempt. However, when any task is assigned to me, you know I am not the person to flinch from it. I have endeavored to put a few hasty thoughts together, which I hope you will receive in all charity. The subject is too extensive to be condensed into a single essay. I shall, therefore, only introduce it, and confine my remarks to the Breeding of Sheep; and if I shall be spared to see the approaching winter, and it should be your wish, the subject may be further gone into, taking up such points as the feeding, housing, and genoral management of sheep, together with some remarks on the bringing to market.

From the earliest ages of the world, the keeping of sheep has been a very interesting and profitable occupation to mankind. Abel was a keeper of sheep, and through succeeding generations the tending of sheep formed the employment of a large portion of the population of the earth. Thus, we find in the days of Abraham and Lot that their flocks and herds became so numerous that the land was not able to bear them; the Patriarchs, those especial favorites of Heaven, were all engaged in this noble and honorable employment, and it was not only the men that were engaged in it, but we find that the women also assisted in tending the flocks. We read in sacred history, that when Jacob went down to Pandanaram. he met Rachel at the well, watering her father's sheep, for sho kept them. David was taken from the sheep cots and anointed by the prophet to be King of Israel; and if you will read the Psalms you will find that the most sublime and expressive of them have direct reference to pastoral life.

It strikes me that those shepherds in ancient times were in great favor with God, for we find at the commencement of the Christian era, when the greatest event that ever took place in the world was about to happen, that shaphards were the first to be made acquainted with it; while keeping their flocks by night the glory of the Lord shone upon them.

As the world advances in civilization, so the keeping of sheep seems to advance in importance, it is only since the establis' ment of the Australian Colonies, that any great amount of wool has been imported into Europe-that country sends an immense quantity to the British market.

Before the finding of gold in Australia, wool was its most valuable export. The wool for the finer fabrics of cloth used to be obable export. tained from Germany, and other countries of Europe. The Americans send considerable quantities of wool to the English markets. This branch of farming is increasing very much in the south of the American continent, the Western States, and Texas. A person writing from the latter place, gives a glowing account of is success in sheep farming. He seys: "I have now about five thousand sheep, and all fine stock. Have realized over twentyfive per cent profit, per annum, on the investment since I have been here which will do for bad times.—Flocks now in finer and healthier condition than ever. My good luck has lasted three years without intermission. If I can go on for three years more with the same success you'll hear the bells all the way to Boston."

Mr Caird, speaking of Prairie farming in the West, says: "I drove to the farm of Mr Connell; he is a practical man, who has all his life been engaged in farming. He left the old country in 1811; farmed in a small way in the State of New York, where he first settled, and moved thence to Illinois, seventeen years ago, took his small flock of merinos with him. They have been remarkably healthy; increased one third every year, and his flock now numbers 25,000. His fleeces average four to five pounds each, and the wool sells for 1s 6d to 1s 8d per lb. The sheep are sent to the prairies in April; 1,200 are placed in charge of one shapherd, who tends them and supplies them with salt; they need no other food for six months. He brings them to his enclosed ground in winter, and gives them hay when they need it, and a little corn. His flocks have never suffered from any epidemic, but have been free from disease. His original flock increased one fourth in weight and size after being brought from New York to this better soil. He prefers the Merino to the South Down for this climate and soil, and has found from trial that the Mermos yielded as much mutton, and far better wool. He imports pure Merino Rams from Germany and Spain to improve his flocks.

It will be perceived from those accounts, that Sheep Husbandry is becoming of greater importance, and keeping pace with the other improvements that are going on in the world. It is not many years since in those countries that have been last mentioned not a sheep was to be found.

Sheep are kept in some parts of the world to an extent that some people have but little idea of. When Prince Esterhazy was MR PRESIDENT AND GENTLEMEN,—I cannot help regretting in England, some years ago, he paid a visit to the late Earl of that you have called on me to read an essay on Sheep Husband. Leicester, who was one of the largest farmers and stock-breeders in England. The Earl showed him a thousand ewes in one flock, and asked the Princo what he thought of that? The Prince replied, "My shepherds are more numerous than your sheep." Prince Esterhazy is said to porsess a flock of 300,000 sheep, fed on his estates chiefly in Hungary. The superintendence and management of the flocks is conducted with the greatest regularity; monthly reports are sent in to a Board of Directors, who are appointed to superintend and give instructions to the different persons in charge of farms. Spanish Merino Rams have been sold in Hungary for £1,000 and upwards.

The French Government have expended large sums of money at different times in importing Sheep from Spain and other countries, to improve their flocks, hence the superiority of the French Merinos at the present time; these facts are mentioned to show that great importance is attached to the breeding and keeping of

Sheep, almost in every country of the civilized world.

When Sheep are kept in such large numbers as I have spoken of, it is for the sake of the wool, not the mutton; the mutton is a secondary consideration, in fact, a matter of little importance; they are pastured on land that cost the owners but little or nothing, the greatest expense being the paying of shepherds to take charge of them.

Sheep are kept in large numbers in some parts of England and Scotland; these take what we may term a middle stand, the wool and mutton both being very valuable. The Sheep are bred and pastured on land commonly known as Moor Lands, or Gorse Commons, or Heather; those lands are almost worthless but for the pasturing of Sheep; these are kept by the breeders until they are two or three years old, when they are sold to farmers and graziers who live in more favored localities, fatten on the rich pastures or turnips, and sold to the butcher, and go to feed the million. We then come to another description of Sheep, viz., the Long Wools; these are generally bred and fattened by the same individual, never changing hands until sold to the butcher. These Sheep form the minority, but I think it is by far the most interesting part of Sheep farming.

We could dispose of any quantity of that breed of Sheep. There is always a good demand for Wool at prices which may be considered remunerative; taking the average of the last few years, it will be found to be about 25 cents per 1b, for coarse Wool. I have always found that the cash realized from the sale of Wool comes in quite opportunely, being at a time of the year when the Canadian farmer has very little else to dispose of. As to the class of Sheep best adapted to our country, I suppose there is a variety of opinion. Of the English breeds, we have the Leicesters, the Teeswater, Lincolns, Cheviots, and Southdowns, French and Spanish Mernos, and I suppose some others of the fine wool breeds. All these different kinds have their admirers and advocates. We have some of the old stock, the Canadian, but this class is getting small, most of the sheep throughout the country being crossed with one or other of the imported breeds.

We now come to a very important part of our subject, viz., the cross breeding of Sheep.

There are but few, comparatively speaking, of our Canadian farmers who possess the means to import stock from England or other places where the pure breed can be obtained, and there is a less number still who have the disposition to do so, this being attended with great expense and risk of capital. But there is a great number of farmers who wish to improve their stock of Sheep by purchasing those animals which have been bred from Imported Stock. While it is beyond the means of some individuals to import, it is within the means of the majority of farmers to purchase those which have been bred from imported stock, especially male animals.

If an individual farmer thinks he cannot afford to pay 20, 30, or 40, or more dollars, for a Tup Sheep, he could join one or more of his neighbors to do so, as one Tup would serve from fifty to one hundred owes.

Much has been spoken and written about crossing Merinos with Leicesters, the Native with Merinos, Southdowns and Alerinos and a variety of crosses, but I contess that I have no faith in it. A very useful class of Sheep may be obtained by crossing a Canadian Ewe with either a Leicester, Cotswold or Teeswater Ram. The produce of this cross will be a good plump carease, with a fleece weighing five or six pounds of clean washed wool. I wish here to correct what I consider a prevailing error; that the first cross is the best. It's true, the change may be more apparent, but no certain degree of excellence can be obtained, unless the female is equally well-bred with the male. This, however, is impossible to be obtained under present circumstances. We must endeavor by crossing and selecting, to improve our breed of Sheep, and this we may accomplish by care and attention. Our motto should be "Excelsior," still higher. At the end of every two years a Tup should be introduced into the Stock from another family of Sheep, so that there be no in and in

beeding, and that should be a better one than you had for the past two years if it can be got.

The following particular points demand attention; and as in cattle, and male has the greatest influence, it is proper to specify those requisites which are considered essential to a good Ram.

The head of a Ram, should be fine and small, his nostrils wide and expanded, his eyes prominent, and rather bold and daring; cars thin, his collar full from his breast and shoulders, but tapering all the way to where the neck and head join, which should be very fine and graceful, being perfectly free from any coarse leather hanging down; the shoulders broad and full, which must at the same time join so easily to the collar forward, and chine backward, as to leave not the least hollow in either place; the mutton upon his arm, must come quite to the knee; his legs upright, with a fine bone, being equally clear from superfluous skin and course hairy wool; the breast broad and well formed, which will keep his fore legs at a proper wideness; his chest full and deep, and instead of a hollow behind the shoulders, that part by some called the fore flank, should be quite full; the back and loins broad and flat and straight, from which the ribs should rise with a fine circular arch; his belly straight; the quarters long and full, with the mutton quite down to the hough, which should stand neither in nor out; his twist deep, wide and full, which with the broad breast will keep his fore legs open and upright; the whole body covered with a thin pelt and that with fine bright soft wool. The characteristic marks of the Ewes should be the same as those of the Ram. There is no breed of sheep equal to the Leicester as far as beauty and symmetrical form goes, also in coming to early maturity, but they are too delicate for our long and severe winters

The Teeswater is tar better adapted to Canada than the Leicester; but I have no objection to a dash of the Leicester with the

Terswater.

The Cotswold or New Oxfordshire Sheep is equally well adapted to Canada, and in some respects perhaps better, being of a very hardy constitution, growing to a large size, and producing a splendid fleece of wool.

In the specimens of wool which I have shown you, you will perceive that there is considerable difference in the length and finences of the staple, the weight of the fleece being about equal, the Teeswater growing so long and thin in some cases leaves the back of the Sheep quite bare, while the wool on the Cotswold grows in a thick compact mass, so that it is almost impossible for wet to penetrate through it; perhaps they are not equal to the other breeds in coming to early maturity.

To be a successful breeder of Sheep, requires a great deal of patient perseverance, and attention to all its details, and a thorough acquaintance with the principles of breeding; the reason why so many individuals who have invested large sums of money in purchasing expensive animals have failed is the want of practical knowledge. One is judicious cross in a valuable flock will leave its mark for years. I will give you an illustration of this; for the last two years I have used two rains, the one a Cotswold, the other a Teeswater with a dash of Leicester; part of the ewes that had lambs by the Cotswold rain in 1858, have had lambs by the Teeswater rain in 1859; the type of the Cotswold is very plain in some of those. I do not tay this was a bad cross, I mention it for illustration

All females are very susceptible during the time of conception; perhaps the greatest instance we have of this is in the case of Jacob. I suppose you are all acquainted with the circumstance. I hope there is no one present but will acknowledge, that the hand of Divine Providence was at work in this instance. Yet it slows on the part of Jacob an intimate acquaintance with the nature and

habits of breeding animals.

It was said by Mr Burke that the man who made two blades of grass to grow where only one grew before was a benefactor to his country. We think that the man who can produce a breed of sheep that will yield a double amount of wool and mutton on a given quantity of food, where only half the quantity was produced before may also be considered a kenefactor to his country.

Among the breeders of long wool sheep, the late Mr Bakewell stands at the head of the list. He was the originator of those beautiful animals known as Leicester Sheep. There is a number of others who are entitled perhaps to almost as much credit as he is for following up his improvement. Mr Jonas Webb, ronowned as a Southdown breeder, is well know. He has done more than any other man to improve that valuable breed of Sheep.

There is another breed of Sheep which is gaining favour in England. I mean the Cotswolds or New Oxfordshire. The Teeswater is an old and favorite breed, in some parts of England, and

we think well adapted to Canada.

I shall now proceed to the subject of Sheep Husbandry as it concerns ourselves. The question has often been put to me, "is it profitable to keep sheep?" My answer to this question is in the affirmative. My opinion is, the keeping of sheep is profitable directly, and indirectly more profitable. When we take into consi-

deration that the land of this Province, by a continued succession of cropping, becomes exhausted of its natural fertility, we ask our-selves, how is it to be prevented? what is the remedy? The answer is, keep stock to consume the produce on the premises, and return to the land that which we have taken from it. A fair proportion of this stock should be sheep. Sheep will convert an immense quantity of coarse folder into valuable manure, if properly managed, and I think our farmers would find it more profitable to appropriate a greater portion of their farm to the feeding of sheep, than they now do, by subjecting the land to the continued operation of the plough, and the growing half crops of grain.

The last two years must surely have led farmers to see the ad-

vantage of paying more attention to the stock farming. My opinion is, that under any circumstances a mixed husbandry is the safest, for it will not in any year entirely disappoint the hopes of the larmer. He cannot suffer so serious a loss as the farmer who depends altogether on his grain, should his grain be blighted or burnt up with drought. It is searcely probable that a total dustriance of with drought. It is scarcely probable that a total destruction of live stock, wool, and grain would occur in one year. We need not be afraid of raising too many sheep, for our neighbours on the other side of the Lake are prepared to buy all we have to spare, since brother Jonathan has become so fond of English mutton. The 15th of November is a good time to put the tup with the ewes, the time of generation being about five calendar months, the lambs will come about the last two weeks of April, and the beginning of May-If the lambs come much earlier than this, the owes require a great deal of attention and expensive feed, otherwise they will get low and out of condition.

In conclusion I may remark, that of the various animals given by a bountiful Providence for the benefit of man, there is none of greater utility than the sheep. The sheep affords us food and clothing; and in the manufacturing their wool, persons may be employed in productive labour, in the winters of Canada, when they would otherwise, perhaps, be unproductive consumers. Sheep should constitute a material part of a farmer's live stock and profus, in this Province, and I believe that nothing will pay the farmer better for kind and liberal treatment, than the sheep. When a man cultivates a farm or a field, the amount of produce is generally in ratio with the amount of labour bestowed, manure applied, and quality of seed sown; so it is with a flock of sheep, if 'you turn them on the roads in summer, and feed them on nothing but straw in the winter, it is unreasonable to expect that they will yield much

I have not said anything about the qualities or the properties of the Merino sheep, because I know very little about them experimentally, but being natives of countries much milder than our own, such as France and Spain, I think they are not so well adapted to the long and severe winters of Canada, as the long wooled sheep; they are not very handsome or attractive to look at, but they ought not to be despised on this account, for doubtless they are very useful on account of their wool, and I would remind my brother farmers, especially those belonging to the younger class, that we should be careful not to despise the useful for the sake of the beautiful.

If I have in reading this paper, shown anything like enthusiasm on the subject of Sheep Hasbandry, I hope you will excuse it, for I assure you that I am much attached to it, and if circumstances demanded that I should occupy anything like a menial position on a farm, and I had my choice, it would be that of a shepherd-

But before I close, allow me to express a wish, that I hope the time is not far distant, when, instead of selling our wool to be carried out of our neighbourhood or out of the country, we shall sell it to be manufactured at Port Hope, and that the beautiful and powerful stream that runs through the town, which has been made tributary to the working of a great amount of machinery already, will be applied still further to yield the motive power required for a Woollen Factory.

I may state that a building is erected at Port Hope, possessing every convenience for the above purpose, as soon as a person or persons can be found who have the necessary capital and enterprise to work it.

III.-AGRICULTURAL INTELLIGENCE.

NOVA SCOTIA AGRICULTURAL SOCIETIES.

WE have now received upwards of thirty five Returns from the different Societies. Some that have come to hand

valuable practical hints. We shall publish a few more in our next number, and then give a summary of the whole.

We requested the Publishers of the Journal to forward five copies to each Society, in the hope that at least that number of copies may be required. It would be very obliging if the Sceretaries would bring the matter to the notice of their respective Committees at an early meeting, that, if more are required, information may be forwarded to the proper quarter. We have already intimated that one great object of the Journal is to furnish a vehicle by which the various Societies and Farmers may have an opportunity of diffusing throughout the country any local intelligence or information. We carnestly solicit communications from different districts of the Province, giving an account of any proceedings or operations connected with Agriculture and Hornculture that may be of general interest-such as the draininge or other improvements of the soit, the results of the applications of different manures, state of the crops, &c., &c.

AGRICULTURAL EXHIBITIONS.

THESE Exhibitions have, within the last forty or fifty years, proved one of the most effective means in furthering the cause of Agriculture. Though differing considerably in their modes of management, as well as in their range or extent of articles shown or competed for, they have all one object in view, viz., the production of the largest and finest specimens of Grain or Roots, as well as the rearing of the purest and best-conditioned kinds of Stock, and thereby stimulating to greater effort in the improvement of both these departments of husbandry. The Royal Agricultural Society of England, and the Highland Society of Scotland, are, perhaps, the two Societies that have contributed more than all others in promoting these Shows or Exhibitions. These Associations, composed of all ranks and professions, from the Prince Consort down to the humblest Farmer in the country, possess a large number of Auxiliaries in the countries that form the scene of their operations respectively, whilst they have a grand central focus around which they all rotate, and from which they derive all their union and light and energy. These Auxiliaries have all a kind of independent existence, and hold their local meetings and exhibitions, and yet they all look to the Parent Society, and bring the best of their produce and stock to enhance the general annual meeting which is held once a year in some leading city—and thence again a mighty influence is exerted upon the different branches-and so on continuously, acting and reacting the one upon the other, and the grand end for which they were called into being to some extent served .--The successful competitors are required to give an account in writing of the mode in which the articles gaining the prize were grown, the nature of the soil with its mechanical and chemical management; and, by this means, valuable practical knowledge is diffused for and wide; those resident in other localities strive to vie with or even to outstrip the parties that gained the first premium, and thus a generous rivalry is evoked, which is attended with the most beneficial results. This, or something like this, was the practice in Nova Scotia till the time of the breaking up of the Central Board of Agriculture by the very power that summon a it into being. This step, we believe, was taken by the Legislature, not because of any deficiency in the organization, but because it was supposed not to be producing those results which the public were warranted to expect, or which such an expenditure seemed to demand. Whether there was any good ground for such a supposition, it is not for us to say; but to us it seems clear and palpable that the sooner this organization is resuscitated, and new and fresh life infused into all its proceedings, the better for the furtherance of Agriculture throughout the Province. We believe that since our last publication are excellent, and contain many out of the thirty-five thousand Farmers in the country,

twenty-five thousand would agree with us in this matter. Along with this resuscitation there ought to be arrangements made for a grand exhibition to be held in rotation in some leading town in the Province, and announcement given of the articles of compotition at least two years before the exhibition takes place. £500 ought to be expended at such shows every year, £250 of which amount ought to belong to the Secrety and subscribed by its members, and the rest granted out of the Treasury. Steps ought to be taken by which the leading men throughout the Province, whether Farmers or not, shall be enlisted in its promotion, and by which it shall be considered something like a reproach not to be one of its number. What has militated more than anything else against the success of these exhibitions in this Province has been the brief period usually given to prepare for competition; at all events, the list of the articles to be competed for has not been put into circulation till within a few weeks of the time fixed, thereby nullifying, in a great Memoirs of measure, the whole object of the exhibition. the proceedings of the Society ought to be carefully printed and circulated extensively in the Province for the information and benefit of all;—and thus a generous rivalry be generated. These and similar improvements would tend largely to the advancement of Agriculture, and to elevate it to the position it is entitled to occupy. But we shall return. to this subject again. In the meantime we rejoice to learn that there are to be several Exhibitions throughout the Province during the course of this and the succeeding month. A list of the articles for which prizes are offered by the Societies of Parrsboro' and Truro have come to hand. We gladly give them insertion in the Journal, and hope that our Agricultural friends, and especially the Secretaries of the Societies, will not fail to forward an account of the proceedings connected with such Shows.

ACCOUNT OF BOUNTIES AND PREMIUMS ESTABLISHED BY THE PARREBORO' AURICULTURAL SOCIETY FOR 1859.

10s. for 100 bushels Swedish Turnips.

5s. " 50 5s. " 10 * Peas and Beans.

2s. 6d. for 5 bushels

Hayseed. 6. for 2

2s. 6d. for 1 " 5s for 10 bushels Blood-red Beets.

5s. " 10 " Carrots 5s. " 2 cwts. Oatmeal, Carrots.

5s. " setting out 20 Plum Trees in 1859.
5s. " 20 Cherry " "
8s. per ox-cart load Compost made in 1859—from 1 to 20 loads if such is approved of by Society.

5s. per tree from one to five grafted Apple Trees set out in 1859 and 1860, from two to four years old, and set out in a man-ner approved of by Society, to be paid on the third Monday in Docember 1861, provided the trees are then thrifty and one year set out; but only 1s, per tree to be paid for such trees unless the Society receives the usual Provincial allowance in 1859 and 1860.

20s. for the best contrivance of a Stable for warmth and saving manure, to contain at least 10 head Cattle, constructed in 1859

12s. 6d. for the second best ditto-7s. 6d. for the third best ditto.

25 to any member of the Society who erects and puts in operation an Oat Mill in Parisboro' within the year 1859

Resolved, That from six to ten Leicester Rams be purchased this year, and to be procured and sold to members of Society or others in Parisboro' and Maccan.

Parrsboro', 2nd May, 1859.

QUICHESTER AGRICULTURAL PXHIBITION, OCTOBER 13, 1859.

An Agricultural Exhibition for Colchester, under the auspices of the New Annan and Lower Stewiseke and Shubenscadie Agricultural Societies, and the Truro and Onslow Agricultural Associa-tion, will be held at Truro on the second Thursday of October All Farmers and others living in the county, on payment of five shillings to the Exhibition Fund, shall be allowed to compete. Prizes as by list will be given for the best animals, &c., in descrip- tumnal Flowers, both Hardy and Greenhouse, was very

tion, size, quality, &c., as the same are generally judged. No one animal or article to take a first and record prize. The following is a list of the articles, with premiums offered :-

	1st	Priz	er.	2nd de) .
Fat Oxen, pair	21	0	0	£0 10	<u></u>
Working ditto, pair	1	0	0	10	0
Steers 2 years old, pair		7	6		
Do. 3 years old, do.		10	0	6	3
Bull of any age, in addition to the prize in his			0		_
Bull 2 years and upwards	1	0	0	12	G
Bull 1 year		15	0	10	ő
Bull Calf		10	0	6	3
Milch Cow Heifer 1 year old		15 7	0	10	0
Heifer Calf		5	ő		
Draught Horses, pair		15	ŏ	10	0
Mare and Colt	•1	ő	ŏ	15	ŏ
Colt 2 years old	-	12	Ğ	5	ň
Colt 1 year old		10	Ŏ	5	0
Ram under 3 years		10	Ö	5	Ò
Best 5 Ewes		15	0	10	0
Best 5 Ewe Lambs		10	0	6	3
Breeding Sow		15	0	10	0
Fat Hog		10	0	5	0
Boar under 18 months		15	0	10	0
Implements.					
Roller		15	0	10	0
Harrow		10	Ö	7	6
Plough		15	ŏ	10	ö
.	_		•	••	•
Grain, Roots, Produce,	ýc.				
Wheat, one hushel		12	6	7	G
Oats, two bushels		10	0	5	0
Barley, one bushel		7	6	5	0
Timothy Seed, two bushels		10	0	6	3
Beans, one bushel		5	0		
Peas, one bushel		5	0		
Table Pointons, one bushel		5	0	_	_
Apples, one bushel		10	0	5	0
Plums, one peck		7	S		
Pears, one peck		7	6		
Turnips, Swedish, one dozen		7 5	6		
Carrota, one dozen Mangel Wurtzel, one dozen		5	0		
Beets, dozen, according to quality		3	ő		
Pumpkins, couple		7	6		
Squashes, couple		7	Ğ		
Tub Butter, 20 lbs. and upwards		10	ŏ	5	0
Cheese, not less than ten pounds		10	Ō	5	Ö
_ '	٠			-	
Domestic Manufacture,	•				
Cloth, wool, men's wear, fulled, not less than t			0	6	3
Ditto do. not fulled, 5 vds. or i	nore	10	0	6	3
Cotton and Wool, men's wear, 5 yards or a	nore		0		
White Flannel, wool, 5 yards or more		7	6		
Ditto conton and wool, 5 yds. or Cloth, women's wear, pressed, 5 yards	mor	7	6	•	
Blankets, pair		7	6		
Woollen Carpet, not less than ten yards		15	0	10	0
Rug, woollen yarn		10	Ö	3	ő
Rug, rag, hooked		10	ŏ	5	ŏ
Socks, pair		7	Ğ	•	-
Stockings, pair		7	6		
Straw Bonnets, pair		7	6		
Straw Hats, couple		7	6		
Willow or Rod Potato Baskets, couple		7	จ	5	0
Butter Tubs, half dozen		7	6	5	0
Axe Handles, half dozen		6	3		
Intending compatitude much after informa-				4- 48-	ο.

Intending competitors must give information thereof to the Secretary at least a fortnight before the day appointed.

J. Longworth, Sec'y Culchester Ag. Society. Truro, July 30, 1859.

GARDEN AND POULTRY SHOW.

THE Horticultural and Poultry Association of Halifax held their first Show on the 14th inst. The display of Au-

The Fruit, though excellent, was limited, there being only two regular competitors. The Vegetables did not come up to our expectations, and were certainly much inferior to the samples sent to the Industrial Exhibition five years ago. Many, we believe, were not aware of the existence of the Association, and had therefore made no preparation for the Exhibition. There was a rich and beautiful collection of Poultry from the establishment of Mr. Downs, N. W. Arm. Altogether, the friends of this important movement have great cause to congratulate themselves at the success of this undertaking We have no doubt but that, under the anspices of such philanthropists as Dr. Cogswell, Mr. M. G. Black, Jr., &c., &c., the Association is destined to confer a high boon on the community. The Rev. Mr. Brewster and Dr. Forrester, Superintendent of Education, addressed the meeting on the objects of the Association, and carnestly and forcibly invited all to come forward and give it their cordial support.

THE WHEAT CROP, OF 1859.

The following article upon the wheat crop of the present year is from the Metropolitan Bank Note Reporter of New York. It seems to be carefully considered, and as an estimate of the crops, based

upon apparently reliable information, is worthy of attention:

The Wheat Craps.—The wheat crop has generally been harvested throughout the country, and sufficient is known to make a careful estimate of this important staple, interesting for present consid-

eration and important for future reference.

The last official return of the whole wheat crop is from the Patent office returns of 1855. Using this as a basis, and getting the increase in production from a comparison with the former Reports of the Patent Office, and by the actual investigations made by several of the States, particularly Ohio, we have the means of obtaining approximately from the average amount of land in cultivation for this crop, the yield for this and other years. In this connection it may be remarked that it is found that the average amount of land does not fluctuate like the yield per acre, but like mortality, is governed by certain laws. The average yield per acre every year is only to be found by carefully examining the reports from different parts of the country, etc. With labor we have collected the returns for this year, and give them below in comparison with the returns made out last year for 1857 and 1858, and which we have had no occasion to change.

The production of wheat in the several States for 1858 and 1859

may be stated as follows:

·	WHEAT.		
STATE.	1857. Bushels.	1958. Bushels.	1859. Burhels.
New York Pennsylvania Virginia and North Carolina Kentucky Ohio Indiana Illinois	10,000,000 25,000,000 15,000,000 18,000,000	20,000,000 20,000,000 18,500,000 8,500,000 22,000,000 13,000,000	22,000,000 25,000,000 20,000,000 11,000,000 26,000,000 20,000,000
Other States	180,000,000	158,500,000	201,000,000

The production in the Western States, which have the largest surplus for export is shown by the following figures:

									WHEAT.		
State.									1857. Bushels.	1858. Bushels.	1859. Bushels.
Kentucky Obio - Indiana -	-	•	•	•	•	•	-	•	10,000,000 25,000,000 16,000,000	8,500,000 22,000,000 13,000,000	11,000,000 26,000,000 17,006,000
Illinois	•		•		•		•		68,000,000	58,000,000	74,000,000

The surplus for the present year in these States may be estima-

ted as follows:							Bushels.
Crop 1859 Consumption 5 bushels per he	ead	•	-	•	•	•	74,000,000 30,000,000
Surplus crop 1859 -	•	-		-	-		38,000,000

It is estimated that in addition to this, from one-sixth to one-fifth

We therefore have in the States, estimating last year's surplus crop. of the West at twenty four millions of bushels, as the gross surplus:

Crop of 1859 - Sixteen two-thirds per cent	L on	1858		•	•	•	Bushels. 38,000,000 4,000,000
Total for export	•						42,000,000

The transportation of this at forty cents per bushel will give nearly seventeen millions of dollars to our canals and railroads

It will probably be thought by many that this estimate of two hundred and one inilions of bushels is a large one for the present wheat crop, but we think not In 1855 the Patent Office returns gave the wheat crop at one hundred and sixty-five millions of bushels; and it is considered as not a large return for that year. In 1855 California was put down as producing only twenty thousand bushels; last year it produced over four millions; and this year probably five millions. In 1853 Kentucky produced only five millions of bushels; it now produces eleven millions. Tennessee has been, except for home consumption, a wheat growing State only since the opening of the Memphis and Charleston Railroad; but now its wheat ranks in quality second to that of no other State. The New England States have decreased in their production, but the West has increased four to one. The amount of land under wheat cultivation this year is thirty-three per cent, greater than in 1855, and the decrease per sere in the production cannot be great-

It should be remembered that the reports of the failure or excess of a crop are almost invariably exaggerated. It has been found that unless a total apparent failure takes place, the difference between two crops rarely exceeds forty per cent., or between a small

crop and an average one, twenty per cent.

The wheat crop in the several States may be considered as harvested and partially ready for market. We can, therefore, give

the following returns with some degree of certainty:

In New England the area was not larger than in former y ars, and the crop is not harvested, but promises, by its superior quality, a return equal, perhaps, to any previous year. In Now York the crop is generally excellent, but in some few counties complaint is made. In Pennsylvania and New Jersey the breadth of land and the yield per acre have never before been as great. In Virginia and North Carolina the quality is superior, the land sown rather above the average, and the yield fully ten per cent. over an average, age and good crop. Tennessee and Kentucky have largely increased their breadth of land sown, and the yield per acre is above the average, while the quality of grain will make their wheat, as in former years, the best in market. In Ohio, the Secretary of the Board of Statistics has prepared careful returns of the wheat crop in that State, and estimates the yield at over 25,000,000 of bushels, showing that notwithstanding the frost which was more severe in that State than any other, the yield will be larger than ever before by fifteen per cent. In Indiana the same features exist as in Ohio, with perhaps less loss by frost. In Illinois there has been some complaint about the spring wheat, and of all crops in some of the northern counties, but notwithstanding, the yield will be thirty per cent, greater than ever before. In Iowa there is no complaint made either of yield or quality. In Wisconsin and Minnesota the winter wheat is very fine, and the spring wheat promises well, but is not yet secure. In Michigan complaints have been made, but they have local foundation. In Missouri the wheat crop is secondary to some others but the press of that State express no dissatisfaction.

With export prices we should doubtless have a movement of the crop never before witnessed, but as this is dependent upon two things, namely, the continuation of the war and poor crops in Europe, we shall perhaps witness no unusual movement. Our people have not, in getting political independence, got, or even learned the value of commercial independence. We are, therefore, dependent upon a foreign demand. If now the producer and the consumer were both in this country, if our manufacturers use our raw material and our producers used home manufactures, we should not have the anomaly of a people almost fearing too large a crop, and hoping for disasters to their neighbours almost, to enable them to sell their surplus. When will we learn wisdom?

TRANSPLANTING EVERGREENS .- The London Gardener's Chronicle describes the following method as promising great efficacy in reviving plants dried by having had their roots too long out of ground, and in ensuring their sate removal in late spring and summer, and as being especially fitted for evergreens when transplanted :-

"Make a hole in the ground to contain about 20 gallons of waof the surplus crop of 1858 is yet in the hands of the producers. I ter, and pour about 16 gallons into it, add to this about 20 lbs. of

barnyard manure mixed with about the same quantity of fine rich soil. By working the mixture for a long time, and carefully, you reduce it to the consistence of whitewash. In this mixture steep the roots of your plants, just before putting them into the ground; the earth thrown after them into the hole sticks to the roots, which immediately begin to swell. At the very first movement of sap, rootlets appear through this coating, which gives them immediate manure, and not only brings on but secures the further formation of roots. Once fairly started, there is nothing more to fear."—This reminds us of the plan for enerusting seeds with manure in order to give the seedlings a good start, recommended by an ingenious gentleman at New Orleans .- Scientific American

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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 pe-THE June number will finish the first year of the existence of this periodical. Though the Jurnal 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 Grainates of the Provincial Normal School, throughout the country, who have excited themselves so strenuously in obtaining subscribers. It is not our intention to make any meterial 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 heretefore to set as Agents, as well as those to whom copies of this Circular may be forwarded.

herotofore to see as agents, as well as those to whom copies of this ordered may be forwarded.

We hereby request and authorize all the Teachers in the Province to account in their locality;—and in their so doing, and thereby increasing the circulation of the Journal, we are persuaded they are but promoting

the circulation of the Journal, we are persuaded they are but promoting their own profiles 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.

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