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hundreds of lessons in arithmetic, depending on such measures of length as inches, feet, yards, and rods, without being able to estimate by the eye the length of anything in one or other of these measures! What an infinity of hues and colors is spread before the eye in nature, the notice of which, with their appropriate names would supply a deficiency which most persons feel through life! And is it not better to study the forms of things in their actual state, than from definitions, pictures and diagrams? So, too, symmetrical proportions and groupings of things, according to the laws of propriety and taste, are nowhere better taught and exemplified than in the material world. The course which is here recommended would differ from the casual and disconnected observations spontaneously made by the young child in following his amusements, and from the instruction in the same subjects subsequently to be derived from books, and would seem to be the most natural way of passing from one to the other. There should be regular gradations in the first as well as in subsequent exercises of the school, and a period of many weeks should pass before a child should be chiefly occupied with books. That is not so much the time for teaching anything absolutely new, as for making one more perfect in the knowledge of things already more or less known, —to make firm the foundations on which he stands, and to enable him to reach securely to that which is next above.

## A GENERAL VIEW OF THE COURSE OF STUDY AND OF THE METHOD OF INSTRUCTION ADAPTED TO COMMON SCHOOLS.

BY THE REV. DR. SEARS, BOSTON.

As there will be several classes in a common school, it will be most appropriate to begin with a consideration of the youngest, with those who have but just entered it. If suitable arrangements could be made, it would be desirable to have each session of the day for study not more than an hour and a half or two hours long. The object of such short sessions would be two-fold; first, to consult the physical comfort and well-being of the children, and secondly, to prevent too sudden a transition in their mental habits. Where such an arrangement would be impracticable, it would be well, if, during a part of the school hours, an assistant teacher, or advanced pupil, could accompany the class on the play-ground or somewhere in the vicinity of the school, and teach them to make such accurate observations upon the various objects presented to view, as would give precision to their knowledge of forms, colors, proportions, measures and distances. These things, which are the corner-stones in the edifice of knowledge, a deficiency in which gives such a weakness and tottering appearance to the superstructure afterwards reared, can be learned much more readily and perfectly outside of the school-room than within it. This knowledge is needed in every elementary study. How many persons study

Following these exercises of the eye and the judgment on visible objects, will be others in a second part of the preliminary course, in which kindred things shall be presented to the mind or imagination to be considered and orally discussed in the school-room. Neither the objects themselves, nor the books that give an account of them, are now to be used. But in respect to familiar things, the memory and imagination of the pupil are to furnish the materials for mental inspection, and in respect to others, either specimens, models, pictures, or other representations are to be presented by the teacher, and the circle of the pupil's ideas to be enlarged by means of comparison of resemblance and contrast, slowly and cautiously proceeding from the clear to the obscure, from the known to the unknown. Here language (oral of course) in connection with things will begin to receive particular attention. Not only the names of things, and of their properties, relations and uses, but the proper conversational forms of expression, the easy and natural use of language as an instrument of thought in describing what has been observed, or conceived of, become more and more an object of attention. The teacher will find it necessary to spend no little time in selecting and arranging groups of objects, adapted to the age, intelligence and local circumstances of the children. These will vary with the localities of the school, the physical features of the neighbourhood, and the occupations and habits of the people.

Foreign objects should not receive attention, except incidentally, till those connected with the place are generally understood.

Furthermore, the teacher must have some reference to his own acquaintance with things and the appropriate popular terms to be applied to them, in making his selection. The plan may be more or less systematic, according to circumstances, without injury, provided it be natural, and dispose of the several objects of attention by putting them in their true place and relations.\*

During this early period it is advisable to accustom the children to make free use of the blackboard, and of the pencil and slate. It will furnish amusement and occupations while the teacher is attending to other classes. The muscles of the arm and hand will thus be trained. The first lesson in drawing can be conveniently given and practised now. Singing can also be introduced, provided it be wholly by rote, and be limited to one or two simple and appropriate school songs, in which style of delivery and expression shall be chiefly regarded. There are various other bodily exercises, partly for recreation and change, and partly for improvement in manners, and for preserving order, which are with great propriety introduced into many of the Public Schools.

We have thus far supposed the child to be employed in oral exercises upon objects. The next great work to be accomplished, much greater and much more unattractive than what has gone before, is to learn how the same language which he has learned to speak, and which has hitherto been addressed to the ear only, can be represented to the eye, and used in the printed form. Here arises one of the greatest of all the difficulties which the teacher has to overcome. That barely tolerable degree of success which attended the old methods of teaching was not so much produced by the instruction given as by the great aptness of children to learn in spite of the defects of method. Though the power to read words correctly, at sight, must always be the result of great labour on the part of the young, and though certain steps of the process are almost purely mechanical, yet it is generally conceded that much of the effort commonly made does not tend at all to the end in view, and that much of the time spent in learning the alphabet, and in applying it to its uses, is but little better than thrown away. Few

\* Many methods have been given by different writers on the subject. From one of the latest authors on education, I will extract a few of the exercises which he lays down in his course of object lessons.

1. *The school-room.* The names of the things to be seen in it, and the parts of which each is composed, but without the technicalities of the artisan. The comparison of their form, size, color, and material. Which of them are found but in one, and which are common to more than one. Which are single articles of the kind, and which exist in larger number. Counting of corners, seats, and desks to the number of four or ten. But avoid nice geometrical ideas and terms which do not occur in the child's daily life.

2. *Apparatus, whatever is used in the school, whether by the teacher or by the pupils; which of these belong to the school, which to the teacher, and which to the pupils.* Connect with this the idea of ownership, of mine and thine, and the pronouns and cases used to express the idea of the possession.

3. *The teacher and the pupils,* and their respective tasks. Exercise on the use of the verb. The number of children on one row of seats. The idea of more and less, and that of persons coming together for a common object.

4. *The human body.* Those parts which address themselves to the eye, omitting the internal organization for the present. The actions of men,—"every person has, &c." "every person can, &c." "Some men have—can, &c." Old, young; large, small; strong, weak. The five senses, motion, voice. The nature and powers of the human mind do not belong here.

5. *Animals,* compared with men. Select from the mammalia, (which can easily be shown) a dog, cat, squirrel, also, a bird. Compare them part by part, and their action. "I should not like to be a brute animal, because, &c."

6. *Food.* Common, uncommon articles. Whence does it come; what its use; and how prepared? Wrong use of food, improper quantities; at improper times; what does not belong to us, but to others, as fruit on trees and in gardens.

7. *Clothing* of children, of adults, of foreigners, compared with that of animals. Whence does it come; and how is it made? Washing garments. Order and neatness. Costly and cheap dress.

8. *Dwelling-houses.* Parlor, sleeping-chamber, kitchen, cellar, store-room. The use of each. The furniture of each. The kind of work done in each. Lights, fires, provisions, and arrangements for the coming season. Who built the house? Who will hereafter occupy it? The dwelling-place of animals.

9. *The family.* Father, mother, brother, sister, domestics. What does each perform for the others? Division of labour. Mutual care. Sickness. What does each owe to the others?

10. *Domestic animals.* Dog, cat, cow, ox, horse, sheep, swine, hen, goose, duck, dove, sparrow, swallow, rat, mouse, mosquito. Description and comparison of the form, size, color, covering, members, voice, motions, actions, food, use, or noxious character of each. Show the animals or pictures of them. Anecdotes respecting animals. "Never torture an animal for sport."

(For the remaining topics, I will merely give the subject, omitting the details given by the author, which can easily be supplied after the analogy of the preceding.) 11. The environs of the house. 12. The village, or city. 13. The professions and occupations of men. 14. Sunday. 15. The farm. 16. The forest, (trees and animals.) 17. Adjoining towns or villages, (direction, comparison, size,) roads, bridges. 18. Hills, valleys, and plains. 19. Animals, tame and wild. 20. Plants. 21. Stones and common minerals, (they must be exhibited.) 22. The heavens, sun, moon, stars. 23. Varieties of weather in various seasons of the year, (the use of the impersonal verb, "it rains, snows, thaws.") 24. Time, its measurement, and what is appropriate at each season and period, (its effects on man, and other things.) 25. Holidays. 26. Public buildings and industrial establishments. 27. Magistrates, rulers and public officers and their duties. 28. The military. 29. Manufactures (articles, materials, machines, operations.) 30. Coins, (kinds, value, national, by whom coined.) 31. Weights and measures. 32. Commerce and trade. 33. Health and sickness, (causes and remedies.) 34. Death, (causes, effects upon others, burial, and the departed spirit.)

teachers have so carefully analyzed this complex process as to have a method of their own, founded on well established and clear principles; and hence the very common practice of merely doing what others do, or have done before them. The whole process needs to be resolved into its parts, and those parts to be kept as distinct from each other as possible, and arranged in the most natural order, so that the pupil, by mastering one difficulty at a time, may securely proceed, step by step, till he finds his way through. It is of the utmost consequence, also, to preserve, the natural freshness and spirit of language, and prevent its passing from the character of a living to that of a dead language, when, instead of being the medium of personal intercourse by the voice, it takes on the more dignified air of a printed book. This enormous evil in the schools reaches far and wide, and spreads itself into a thousand ramifications. The interest which was taken in the exercises of the school, when they related to objects, and were conducted by the living voice, abates, and it is nearly lost, when nothing but dull exercises or dry syllables and hard words are given, as if to puzzle the ingenuity of the learner. The mental faculties, except the memory and the power of divination, in respect to the sounds of letters, lie almost dormant. If the mind should chance to busy itself much with thought, it will be as likely to form false and ludicrous conceptions as right ones, in connection with the long columns of new strange words. Reading will be the mere putting together of the sounds of syllables, words and sentences, which will call up that ghost known as the genius of school reading.

Men may differ in opinion as to the number and order of the successive steps to be taken in teaching the use and the powers of letters. There is probably no one method equally adapted to all. But the principle of laying the process carefully out into its several parts, and of attending to them only one by one, can hardly be called in question. The old, and in many places obsolete, method, first, of teaching the alphabet by showing the letters, causing their names to be repeated without any regard to the sounds as they represent, and then of teaching spelling by calling the names of certain letters in combination, and of pronouncing the syllable or word without any reference to the separate elementary sounds which, when united, constitute the word, will now find but few intelligent defenders. It is conceded, on all hands, that the name of a letter does not, except by accident, give any clue to its power, and that the connection between the first and second parts of the act of spelling a word, naming the letters and pronouncing the word, is purely arbitrary. It is, indeed, necessary to know the names of the letters, and it will often be convenient to resort to the arbitrary practice, but not till the natural and philosophical one, the phonetic, has become familiar. There is, furthermore, no propriety in making a child learn the names of all the letters of the alphabet in their order at first. It is, in itself considered, unnecessary; and, in its immediate effects, it damps the spirit and stifles the interest of the young learner. The most natural process would seem to be something like the following: to begin with what is already well known, a simple word, consisting of but two letters when it can be so, and resolve it into its elementary sounds; then to unite the sounds again so as to produce the word. When the appropriate words of this class have been exhausted, others of three letters, and finally words of more syllables than one, may be analyzed in the same way, giving preference to dissyllabic words over monosyllabic ones, which have silent letters in them. Such exercises may be commenced before looking at a book, or knowing anything of the forms or names of letters, and continued till the various easy words, composed of single consonants and vowels, with either long or short sounds, shall be readily resolved into their elementary parts and then reproduced by the union of those parts. This should be the first step, because the previous use of words, or sounds in combination, gives all the means necessary for the analysis of these sounds. The pupil is still within the sphere of his own knowledge and experience. Again, as the name of a letter is but a mere symbol of its form, and as the letter itself in its visible form is but a symbol of the sound or sounds it represents, it is clear that we ought to begin with the sound as the source, and proceed from things to their signs, and the names of these signs.

The next step would naturally be to direct attention to the outward forms or visible characters used to represent those sounds. This work is also one of great complexity, and will need to be simplified. Whether it will be expedient to begin with the vowels alone,

or with the easiest vowel and easiest consonant together; whether one sound of the vowels shall be taught by itself, or the two most common sounds be introduced in connection with each other, each instructor must decide for himself. As we have now to do with both the sounds and forms of letters, those letters should come first which are, in both respects, the easiest to apprehend and use. Letters which are represented by single characters should come before those whose characters are complex, especially if the pupil be required to make them on the slate or blackboard. Of those of similar form only one should be learned at a time, and that should be the one most frequently occurring in words; for the memory is embarrassed by the necessity of nice distinctions, whereas it is aided by striking contrasts. Consonants which have different sounds according to their position, diphthongs, and, in fact, all irregularities should be excluded from the first lessons. I know, indeed, that one cannot proceed very far in teaching the elements of our language without encountering difficulties arising from anomalous sounds and combinations of letters. But of this apparent chaos in English orthography, some parts are much less chaotic than others. Great irregularities, or those which do not extend to large classes of words, belong not appropriately to the primary school. The fact that vowels in a certain position are generally long, and in a certain other position are generally short, may be made very simple, if we dismiss for the time being the numerous exceptions. So, also, the fact that the long sound of each of the vowels is represented by certain diphthongs, may be easily recognized and followed, if we limit our attention to large classes of words. The influence of the letter *r* upon certain vowels, modifying their sounds, can be made obvious to any child. Indeed, all that part of orthography which belongs to the primary school, may be taught without occasioning very great perplexity to the pupil.

When a child comes to put words together in reading, so as to form a sentence, no pains should be spared by the teacher to preserve the natural tones of human speech. Children are the most natural speakers in the world, and would, without instruction in inflection, tone and emphasis, read well, if they could be made first to feel and speak short and easy sentences, like those to be read. Suppose a sentence to begin with the salutation, "Good morning." The child may be directed to repeat the words with such feelings as would naturally arise in different circumstances. The teacher might say, "Imagine yourself coming from a cold chamber, early in the morning, and meeting your brothers and sisters sitting by a cheerful fire, bright as larks, how would you speak these words to them? If you were to enter the room of a sick mother, in what tone would you address these words to her? If the weather were dull, and your feelings sad, and you were to meet your teacher who had reproved you for some improper deportment the day before, how would you salute him? If, you would go out early and find your companions full of glee, what would be the way in which you would say 'Good morning' to them? Well here we are about to read of a girl, who was a little out of humor with her old sister the evening before, and now wishes to make amends for it, how would she be likely to speak these words to her sister on approaching her?"

Suppose a quarter of an hour were spent in such an exercise on a single phrase, and the residue of the sentence were left for the next exercise, could the time of the teacher and the pupil be more profitably spent? All that is necessary to insure natural reading at the outset, is to *ply the imagination of the child, till it has produced the appropriate feeling*. The tones and inflections will take care of themselves. When the result has been properly brought out, and every one knows and feels that the utterance of the words was as it should be, then it may be well to note it and record it as a thing ascertained by observation. Thus, by constant transitions from reading to speaking and from speaking to reading,—working every word and thought and image into the understanding, imagination and feeling of the young reader,—an effectual barrier will be raised against that grotesque habit of mouthing and drawling words which is not yet banished from our schools.

The subject of the piece to be read, the thoughts conveyed, and words employed, ought not to be such as require much explanation. Still the teacher should be satisfied with nothing short of positive evidence that all these are perfectly understood, before any attempt is made to read the passage aloud. But the faults of the voice, and of articulation, will be likely to be so numerous as to require

much vocal training. It is absolutely painful to go into some of the schools and hear the screeching voices, the outlandish and provincial vowel sounds, and the defective or exaggerated articulation which constantly offend the ear. The importance of a pure, rich and pleasant tone of the voice, both in school and domestic and social life, is rarely estimated as it should be. It is the natural interpreter of the heart, and carries with it agreeable or disagreeable impressions and associations, as it bears marks of rational control, dignity, gentleness and sweetness, or of the want of all these qualities. A decidedly bad management of the voice in the teacher should be a bar to his admittance to the school. The attention now given to music in the schools, besides improving the feelings, taste and deportment of the pupils in other respects, has had the effect to prune off the grating harshness of the voices of both teacher and pupil. It is still a common defect in both the speech and reading heard in the school-room, that the vowel sounds are wanting in purity and exactness. As these constitute the body of the sound heard in speech, the main current, as was once said by an accomplished teacher of music, on which the consonants fall like leaves and are borne away by the streams, they should be truthfully given. They should, moreover, have a full and sonorous utterance so as to give them their proper musical effect. One of the incidental evils resulting from efforts made to improve the articulation of difficult consonants, is, that the latter have been given with an exaggerated force; whereas distinctness and delicacy only are required; and thus not only have the harsher elements of our language been needlessly rendered harsher still, but they have been made to compress and almost crush the vowel sounds, and thus injure the music of the language. Let me not be understood as disparaging elocutionary exercises on the consonant sounds. I only speak of the mistake that is often made in confounding force with distinctness, leading to a violation of the principles of true taste, and putting the teacher of reading at war with the teacher of music. The true teacher of elocution and the true teacher of music recognize the same principles of taste, and work as coadjutors rather than as antagonists.

## SHORT MEMOIRS OF EMINENT MEN.

No. 2.

WILLIAM HARVEY, M. D.

(*The Discoverer of the Circulation of the Blood.*)

"The wisdom of the Creator," it has been well said, "is in nothing seen more gloriously than in the heart and blood-vessels;"—the action of the latter is essential to the performance of every function, and diffusing life, health and vigour, through the entire animal frame; the cessation of the former, for a short period, absolutely fatal: the whole, nevertheless, so constructed as to go on at the rate of a hundred thousand pulsations in every twenty-four hours, for a period of from seventy to eighty years without disorder, without interruption, and without weariness! And yet so simple is the contrivance by which all this is brought about, that the next thing which astonishes us is the fact, that so many years elapsed before it was at all accurately understood. The arteries were found empty after death; it was, therefore, concluded that they merely conveyed air or some kind of "animal spirits." The veins alone were supposed to convey blood. By some it was propounded that the fluids move along the vessels in one direction during the day, and in the contrary direction during the hours of sleep, with many other equally chimerical and unfounded hypotheses. In the sixteenth century, a little more light was thrown upon the subject. By the researches of Servetus and of the Italian anatomists, Colombo and Gesalpini, the lesser circulation through the lungs, the fact of the blood being acted upon by the air, the existence of valves in the veins, and a few other particulars, were made out. But it was reserved for our illustrious countryman, in the century before last, to connect the whole into one harmonious system; to announce to the world the great discovery of the true doctrine of the circulation of the blood; to open up a new era in medical science; and to introduce as great a revolution in the sciences of anatomy and physiology, as Newton afterwards did in those of astronomy and optics, by his theories of gravitation and light.

WILLIAM HARVEY was descended from a respectable family in the county of Kent, England, and was born at Folkestone on the

1st of April, 1578. His education was conducted first at a grammar school in Canterbury, and afterwards at Gonville and Caius College at Cambridge. To minds of a certain order, some comparatively trivial event, carefully pondered, not unfrequently opens the path to discoveries of the greatest magnitude. There seems, at first sight, little relation between the fall of an apple, and the splendid scientific achievements of Newton. Yet it was a train of thought, directed by this apparently trifling circumstance, which conducted him to the whole of them. Thus it was with Harvey. In the course of his travels, for the completion of his medical education, he settled for a short time at Padua. *Fabricius ab Aquapendente* was then at the height of his reputation as a professor of anatomy in the university of that place. The theatre, built at his expense, is still exhibited to visitors at Padua. Its circular seats, rising almost perpendicularly one above another, now nearly black with age, give to the small apartment, which is wainscoted with curiously carved oak, a solemn and venerable appearance. The lectures were given by candlelight, as, from the construction of the theatre, no other light could be admitted. Here it was that Harvey caught the first glimpse of the discovery which has since immortalized his name. *Fabricius* one day pointed out the existence of valves in the veins—not however, that he had the slightest conception of their use, for the only conjecture that he could hazard was, that they might be designed to moderate the flow of blood from the trunks of the veins to their smaller branches, taking it for granted that such was the course of the circulation. This was enough for his intelligent pupil. There were valves in the veins undoubtedly; but could this be the intention of them? He would not place implicit dependence upon any teacher, however celebrated, but would examine for himself. Valves opening towards the heart seemed calculated to impede altogether, rather than to retard merely, the flow of blood, in a direction from that organ. Tie up a vein or compress it, as is done in the simple operation of bleeding, and that portion of the vessel which is at the greatest distance from the heart will swell and become distended. Whereas, he soon discovered that, if an artery were tied, just the contrary happened; that part became enlarged which was nearest to the heart. Hence he was led by various experiments, step by step, till he clearly demonstrated that the heart is first of all excited to contract by the stimulus of the blood, that this fluid is impelled through the arteries, and, after having served every purpose of secretion and nourishment, returns by the veins to recommence the circulation.

Great, however, as the discovery undoubtedly was—immense as was its practical advantage—simple and easily demonstrable as it now appears, Harvey durst not for many years even drop a hint upon the subject in his comparatively private lectures, and it was not until nearly thirty years had elapsed that he ventured to publish to the world, not in his own country, but at Frankfort, the results of his experiments. And then nothing could exceed the contempt and ridicule with which it was received. Had he lived in a country unblest with the light of the Reformation, he would probably have shared the fate of Galileo. As it was, he was accused of propagating doctrines tending to subvert the authority of Holy Scripture, the epithet circulator, in its Latin invidious signification, (quack,) was applied to him, it was given out that he was “crack-brained,” and his practice as a physician sensibly declined. In a quarter of a century more, his system was received in all the universities of the world, and Harvey lived to enjoy the reputation he justly merited.

The date of the first promulgation of his then novel views has not been accurately ascertained. Thus much is certain,—Harvey graduated at Padua and afterwards at Cambridge in the year 1602, soon after which he settled in the practice of his profession in London. In 1607, he was elected Fellow of the College of Physicians, and in 1615, he was appointed reader of the anatomical and surgical lectures founded by lord Lumley and Dr. Cadwell. In the British Museum, there is an original ms. of his lectures of the date of April, 1616, which contains the propositions on which his doctrine is founded. But it was not till 1628, when he was in his fiftieth year, that he published the great work already referred to. Some curious preparations, rude enough, but, under the circumstances of the case, highly interesting, which he either himself made at Padua, or procured from that celebrated school, and very probably exhibited during his course of his lectures, were not very long since presented to the College of Physicians by the

Earl of Winchelsea—a direct descendant of lord chancellor Nottingham who married Harvey's niece. They consist of six tables or boards, upon which are nerves and blood-vessels, carefully dissected out of the body; in one of them the semilunar valves of the aorta are distinctly to be seen. These valves placed at the origin of the arteries, must, doubtless, together with the valves of the veins have furnished the most striking and conclusive arguments in favour of the true system.

The talent and discoveries of Harvey soon recommended him to the notice of the court. From a letter of James I., dated February 3, 1623, it appears that he had then for some time been physician extraordinary to his majesty. In 1632, he was appointed physician to Charles I., who always treated him with much regard, and was an interested spectator of many of his experiments. About this time he appears to have accompanied the earl of Arundel and Surrey, lord high marshal of England, as his physician, in his embassy to the emperor. Aubrey states, that one of his excellency's attendants on this occasion told him that, in his journey to Vienna, Harvey would always be making excursions into the woods in order to investigate “strange trees and plants, earths,” etc., and sometimes was in danger of being lost, “so that,” adds he, “my lord ambassador would be really angry with him, for there was not only danger of thieves, but also of wild beasts.” In the following year, Harvey accompanied the king in his visit to his northern dominions, and when the civil war broke out, he still followed the fortunes of his royal master, attended him when he left London, and was present at the battle of Edge Hill. On this occasion, the prince afterwards Charles II., and the duke of York, were committed to his charge. While the fight was going on, he had not a mind to forego pursuits more congenial to his taste; accordingly, he withdrew with the young princes under a hedge, and took out of his pocket a book, which he began to read. He had not, however, pursued his studies long, before a cannon-ball grazed on the ground near him, which soon compelled him to remove his station. After an arduous struggle, both sides claimed the victory; but one result of the battle was favourable to the inclinations and designs of Harvey. The king continued his march, and took possession of Oxford, the only town in his dominions which was altogether at his devotion. Hither, with the rest of the royal household, his physician retired, and here he had abundant leisure to pursue his favourite studies; although under the disadvantage of having lost many most valuable notes of experiments, which he had previously made; for at the beginning of the rebellion, his lodgings at Whitehall had been plundered, and many papers containing curious observations upon the dissections of animals had totally disappeared. This was a loss which he never ceased to lament, saying, that “for love or money he could neither retrieve or obtain them.” He remained at Oxford about three years, during which time—in 1645—he was made warden of Merton College, by the king's mandate. It is related of him, that, during his stay there, he was in habits of intimacy with a kindred mind, Dr. Bathurst, of Trinity College. This gentleman kept a hen to hatch eggs in his chamber, which they opened daily to understand the whole process and results of incubation. “Eggs,” says Harvey, “were a cheap merchandize, and were at hand at all times and in all places; and it was an easy matter to observe out of them what are the first evident and distinct marks of generation; what progress nature makes in formation, and with what wonderful providence she governs the whole work.” This was a favourite study with Harvey, and forms the subject of his other great work, second only in the importance to his “Treatise on the Motion of the Heart and the Blood.” Dr. Charles Scarborough, afterwards knighted by Charles II., was another associate in whose society he at this time much delighted; except that he considered him in danger, under the contagion of those troublous times, of neglecting his medical studies for the more brilliant profession of arms. To check his military ardour, he accommodated the young doctor with a lodging in his own apartment, saying, “Prithee leave off thy gunning, and stay here; I will bring thee into practice.” But in the year 1646, Charles was persuaded to put himself in the power of the Scottish army at Newark, and orders were issued for the surrender of Oxford. Consequently Harvey was obliged to relinquish his short-lived appointment of warden to Merton College, and to return to London, where for some time he lived with his brother Eliab, a rich merchant, who resided opposite to St. Mildred, in the Poultry. How

long he remained with his brother does not appear, but it is certain that, not very long after this period, he withdrew very much from the world, and passed his time in retirement, in a house which he possessed at Combe, in Surrey. Here he had the advantages of a good air and a pleasing prospect, but to indulge a whim he had of delighting in being in the dark, he caused caves to be made in the earth, in which, in summer time he was accustomed to meditate, In this seclusion he was visited, in the year 1651, by his friend Dr. Ent. "I found him," says Ent, "in his retirement, not far from town, with a sprightly and cheerful countenance, investigating, like Democritus, the nature of things. Asking if all were well with him,—'How can that be,' he replied, 'when the state is so agitated with storms, and I, myself, am yet in the open sea ! And 'indeed,' added he, 'were not my mind solaced by my studies, and the recollection of the observations I have formerly made, there is nothing which should make me desirous of a longer continuance. But, thus employed, this obscure life, and vacation from public cares, which disquiet other minds, is the medicine of mine.'" Ent goes on to relate a philosophical conversation between them, the result of which was the determination on the part of Harvey to publish his second great work just alluded to.

In the year 1653, Harvey presented the College of Physicians with a library and museum, erected in a magnificent manner, entirely at his own expense. It is described as a noble edifice of Roman architecture (of rustic work, with Corinthian pilasters,) and consisted of an elegantly furnished convocation room, or parlour, below, and a library, filled with choice books and surgical instruments, above. And, we are told, it was erected in the garden of the College of Physicians, at that time situated in Amen Corner. This garden, it seems, was of an irregular form, but extended as far as the Old Bailey to the west, and towards the south reached to the church of St. Martin, Ludgate Hill. In the following year he was appointed president of the college, an office which he declined to accept on account of his advanced age and infirmities, but he testified his regard for its welfare still farther, by giving up his paternal estate of £56 per annum for its benefit. The few remaining years of Harvey's life were much embittered by suffering from the gout and other bodily infirmities. He died on the 3rd of June, 1657.

There are many remarks, in the works of this distinguished physiologist, expressive of profound reverence for the great First Cause of all those wonders, into which it was his delight to pry with such curious research. He was accustomed to say that he never dissected the body of an animal, without discovering something which he had not expected or conceived of, and in which he recognized the hand of an all-wise Creator. To His particular agency, and not merely to the operation of general laws, he ascribed all the phenomena of nature. It would have been gratifying to have traced the effect of the great truths of the Bible, as impressing his heart and regulating his conduct; but on this important question we can say nothing farther, as his biographers are silent.

In his person, Harvey was very small in stature, round faced, of an olive complexion, with small round black eyes, and hair black as a raven till within twenty years of his death, when it became quite white. His mind was furnished with an ample store of general knowledge. In early life, he is said to have been passionate, and apt to draw the dagger—which, after the manner of the times, he constantly wore—on very slight occasions. But when he grew up to manhood, and during his long life, he had the character of being candid, cheerful, and upright, living on terms of harmony with his friends and brethren, and showing no spirit of rivalry and hostility. His visits to his patients he made, we are told, on horseback, with a footcloth, his man following on foot, in the same way in which the judges were then accustomed to ride to Westminster Hall. But in practice, he does not appear to have been particularly successful. The truth was, that the great physiologist not only disdained those arts of gaining the confidence of the public, by which many succeed, but was probably too intent on making discoveries in science, and of too speculative a turn of mind, to devote that attention to practical details, which is so essentially requisite in the art of medicine.

The more clothing we wear, other things being equal, the less food we need.

Boys' Department.

THE BOY.

There's something in a noble boy,  
A brave, free-hearted, careless one,  
With his unchecked, unbidden joy,  
His dread of books and love of fun,  
And in his clear and ready smile,  
Unshaded by a thought of guile,  
And unrepressed by sadness,—  
Which brings me to my childhood back,  
As if I trod its very track,  
And felt its very gladness.

'Tis then that on his face I look,  
His beautiful but thoughtful face;  
And, like a long-forgotten book,  
Its sweet, familiar meaning trace,  
Remembering a thousand things  
Which passed me on those golden wings  
Which time has fettered now,—  
Things that came o'er me with a thrill,  
And left me silent, sad, and still,  
And threw upon my brow  
A holier and a gentler cast,  
That was too innocent to last.

And yet it is not in his play,  
When every trace of thought is lost,  
And not when you would call him gay,  
That his bright presence thrills me most.  
His shout may ring upon the hill,  
His voice be echoed in the hall,  
His merry laugh like music thrill,  
And I in sadness hear it all,—  
For like the wrinkles on my brow,  
I scarcely notice such things now,—  
But when amid the earnest game,  
He stops, as if he music heard,  
And, heedless of his shouted name,  
As of the carol of a bird,  
Stands gazing on the empty air,  
As if some dream were passing there.

'Tis strange how thought upon a child  
Will, like a presence, so-etines press,  
And when his pulse is beating wild,  
And life itself is in excess,—  
When foot and hand, and ear and eye,  
Are all with ardour straining high,  
How in his heart will spring  
A feeling, whose mysterious thrall,  
Is stronger, sweeter, far than all;  
And on its silent wing,  
How with the clouds he'll float away,  
As wandering and as lost as they.

WILLIS.

PHYSICAL TRAINING IN SCHOOLS.  
GYMNASTIC EXERCISES.

CONTINUED.  
No. IV.



Fig. 58.

Action 96. Get up on the pole as in action 80, the arms being straight; then gradually sink down and kiss the pole, and then rise gradually to the first position (fig. 58).



Fig. 59.

Action 97. Sit across the pole, and, with a firm grasp, endeavour to raise the body off the pole till the back is horizontal.

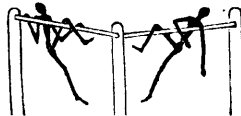


Fig. 60.

Action 98. Throw the left leg over the pole, then at the same time throw both arms over the pole, holding by the arm only (fig. 60).



Fig. 61.

Action 99. Throw the right leg over the pole, the left arm being underneath, and the right arm hanging down (fig. 61).

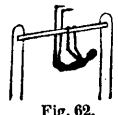


Fig. 62.

Action 100. Hang on the pole, the hands on each side, and then raise the legs on each side of the pole, as high as possible (fig. 62).



Fig. 63.

Action 101. Hang on the pole, the hands on one side; then spring at once on to the pole, and balance the body on the arms (fig. 63).

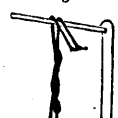


Fig. 64.

Action 102. Sit on the pole; suddenly drop backwards, and clasp the pole with the hands, hanging down (fig. 64).

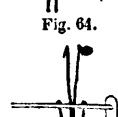


Fig. 65.

Action 103. Hang on the pole, the hands on one side, and gradually bring up the legs till they are perpendicular, the arms being straight (fig. 65).



Fig. 66.

**Action 104.** Hang on the pole, the hands on both sides, throw both legs at once over one side of the pole, then over the other; do this several times (fig. 66).

These Horse exercises must not be attempted until the preceding exercises have been performed, so as to realise perfect capability in their performance. The gymnast should perform only one of these actions at a time, gaining perfect capability in each before proceeding to the next.

In performing the following exercises, the body and head are to be kept upright, and the knees and ancles straight, unless otherwise expressed, or where a change is absolutely necessary.



Fig. 67.

**Action 105.** Place the hands on the middle of the pommels, thumbs inside, and spring up so as to bring the arms quite straight. Do this several times without resting, at first slowly, afterwards more quickly (fig. 67).



Fig. 68.

**Action 106.** Hands on pommels as before, spring up and touch the saddle with the toes (fig. 68).

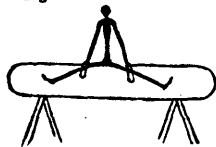


Fig. 69.

**Action 107.** As action 105; at the same time spread the legs so as to touch the sides of the horse with the toes (fig. 69).



Fig. 70.

**Action 108.** Spring up, and throw up the right leg, keeping the other straight; do this several times (fig. 70).



Fig. 71.

**Action 109.** As action 108 with the left leg.

**Action 110.** As action 106, and cross the legs on coming down (fig. 71).



Fig. 72.

**Action 111.** Jump up, and rest with the hands on the pommels, arms straight, thighs against side of horse, spring away from the horse and come back again several times, without coming to the ground (fig. 72).

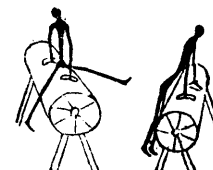


Fig. 73.

**Action 112.** To mount the horse: place the hands on the pommels, thumbs inside, spring up, rest for a moment with thighs against sides of horse, then throw the right leg over the back pommels, and sit perfectly upright in the saddle.—To dismount: place the left hand on the front pommel, thumb inside, and the right hand on the saddle in front of the body, and spring off (fig. 73).



Fig. 74.

**Action 113.** Mount as directed in action 112; place both hands close together on front pommel, thumbs in front, fingers behind, arms straight, then raise the body as high as possible several times (fig. 74).

**Action 114.** As action 113, and swing the body backwards and forwards, knees straight.



Fig. 75.

**Action 115.** As action 114, and bring the feet on the saddle, behind the hands (fig. 75).

**Action 116.** Jump on end of horse, and walk on the hands along the back of horse, with the body a little raised, as in action 113.

**Note.**—In springing up, jump from the toes. In sitting on the horse the thighs should press the sides of it, so as to leave a space between the body and the saddle, just sufficient for the open hand between them.

(TO BE CONTINUED.)

ILLUSTRATIONS OF ASTRONOMY.

No. 5.

THE ECLIPTIC, ZODIAC, SIGNS, NODES, TRANSITS, &c.

**True Figure of the Planets.**—The spherical form of the planets evinces the supreme wisdom of the Creator. Were they cubes, for instance, instead of spheres, their temperature would be far less regular than it now is; the sun would rise suddenly upon a whole side at once; and suddenly disappear at night; and the blessings of twilight, and the gradual succession of day and night, as they now transpire, would be unknown.

On the maps the planets are represented as exactly round, or spherical; but this is not their precise form. Their rapid motion around their respective axes has a tendency to depress or flatten them at their poles; and extend or widen them at their equators. Hence their equatorial diameter is considerably greater than their polar diameter; the true figures of the planets being that of *oblate spheroids*.

The difference between the polar and the equatorial diameter of the planets respectively, so far as known, is as follows:

Earth, 26 miles.	Jupiter, 6,000 miles.
Mars, 25 "	Saturn, 7,500 "

The *Ecliptic* is the plane or level of the earth's orbit, indefinitely extended. Fig. 1 represents the earth in her orbit, as she would appear to a beholder placed at a distance, and elevated above the plane of the ecliptic. She is represented in perspective as appearing smaller as she grows more distant—as keeping her poles towards the same points in the heavens; and as exhibiting the phases of the moon according as we see more or less of her enlightened side. The arrows placed in her orbit show her direction.

**The Poles of the Ecliptic.**—The poles of the earth are the extremities of her axis. The poles of the ecliptic are the extremities of the imaginary axis upon which the *ecliptic* seems to revolve. The ends of a rod or pointer, run through the map at the centre of the sun, would exactly represent the poles of the ecliptic.

As the ecliptic and equator are not in the same plane, their poles do not coincide, or are not in the same points in the heavens.

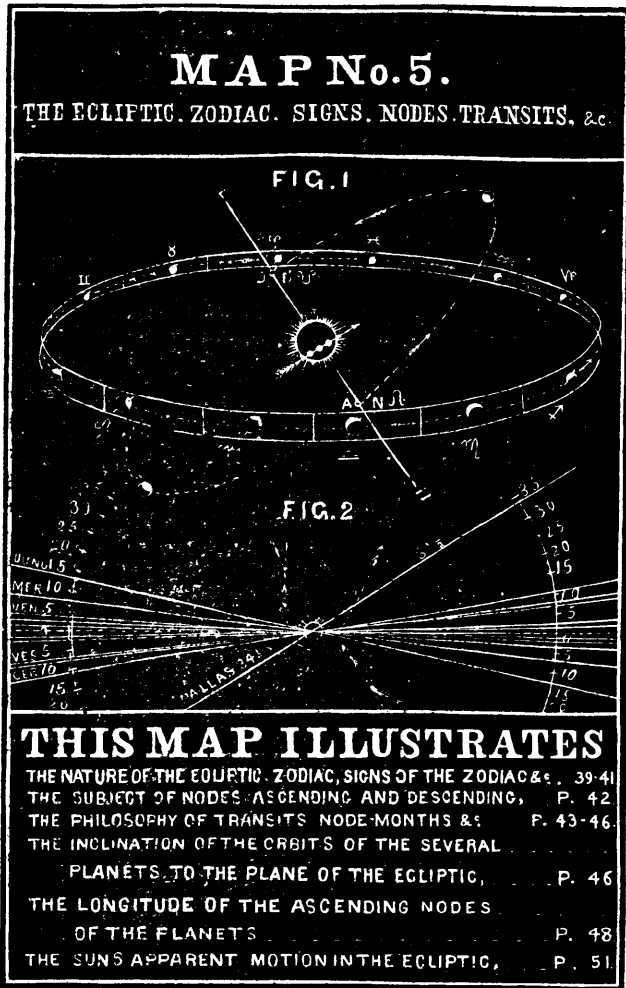
The *Zodiac* is an imaginary belt 16° wide, namely, 8° on each side of the ecliptic; and extending from west to east quite around the heavens. It is represented on the map by the plain circles above and below the ecliptic. In the heavens the *Zodiac* includes the sun's apparent path, and a space of eight degrees south and eight degrees north of it.

**Signs of the Zodiac.**—The great circle of the Zodiac is divided into twelve equal parts called *signs*. These divisions are shown on the map by the spaces between the perpendicular lines that cross the Zodiac. The ancients imagined the stars of each sign to represent some animal or object, and gave them names accordingly.

The names, order, and symbols of the twelve signs of the Zodiac, are as follows:—

Aries, or the Ram, .....	♈	Libra, the Balance, .....	♎
Taurus, the Bull, .....	♉	Scorpio, the Scorpion, .....	♏
Gemini, the Twins, .....	♊	Sagittarius, the Archer, ..	♐
Cancer, the Crab, .....	♋	Capricornus, the Goat, ...	♑
Leo, the Lion, .....	♌	Aquarius, the Waterman, ..	♒
Virgo, the Virgin, .....	♍	Pisces, the Fishes, .....	♓

The ancient Astrologists supposed that each of these signs governed some particular part of the human body; and even in modern times people sometimes consult the frontispiece of their almanacs, to see whether the "sign" is "in the head," or "in the heart;" so as to attend to certain important affairs "when the sign is right." The idea seems to be that the word "sign" signifies an *omen* or *prognostication*; and that the signs of the Zodiac have some mysterious control over the destiny of man.



*Node—Ascending and Descending.*—Fig. 1 represents an interior planet as revolving in an orbit inclined to the ecliptic at an angle of about 45°; and as both planets revolve around the same centre of attraction, the interior planet must pass through the plane of the ecliptic twice at every revolution; once in ascending, and once in descending. These two points, where the orbit of a planet passes through or cuts the plane of the ecliptic, are called the *nodes* of its orbit. One is called the *ascending*, and the other the *descending* node. On the map A. N. is the ascending node, and D. N. the descending node. They are also denoted by the following characters, viz.: Ω for the ascending, and ♄ for the descending.

A line drawn from one node to the other is called the *line of the nodes*, and may be seen on the map, marked L. N.

In the figure the ascending node is represented as being in the middle of Libra, and the descending in the middle of Taurus. The design is merely to illustrate the subject, without representing the actual line of the nodes of any one of the planets.

*Transits.*—By consulting Fig. 1 it will be seen that if an interior planet was at her ascending node, and the earth on the *line of the nodes*, on the same side of the ecliptic, the planet would seem to pass over the body of the sun, as shown in the figure. This passage of a planet over the sun's disc, or between the earth and the sun, is called a *Transit*.

Mercury and Venus are the only planets that can make a transit visible to us; as all the rest are exterior to the earth's orbit, and consequently can never come between the earth and the sun. But the earth may make transits visible from Mars, the Asteroids, and Jupiter; and they in turn may make transits for the inhabitants of all exterior worlds. The principle is, that each interior planet may make transits for all those that are exterior.

If the orbits of Mercury and Venus lay in the plane of the ecliptic, they would make transits whenever they were in conjunction with the sun. Even with their present inclination the same phenomenon would take place twice in every revolution, if Venus and the

earth, for instance, were to start together from the line of Venus's nodes, and revolve in the same periodic time, Venus would then always make a transit in passing her nodes.

To calculate transits at any one node, we have only to find what number of revolutions of the interior planet are exactly equal to one, or any number of revolutions of the earth; or in other words, when the earth and the planet will again meet on the line of the planet's nodes. In the case of Mercury this ratio is as 87.969 is to 365.256; from which we ascertain that

7	periodical revolutions of the Earth	are equal to	29	of Mercury;
13	"	"	54	"
33	"	"	137	"
46	"	"	191	"

Therefore transits of Mercury, at the same node, may happen at intervals of 7, 13, 33, 46, &c., years.

All transits and eclipses are calculated upon these principles.

The transits of Mercury all occur in the months of May and November. The reason for this is, that his ascending node is in the 16th degree of Taurus, and his descending in the 16th degree of Scorpio; the first of which points the earth always passes in November, and the other in May.

*Transits of Venus.*

8	periodical revolutions of the Earth	are equal to	13	of Venus.
235	"	"	382	"
243	"	"	346	"
251	"	"	408	"
291	"	"	475	"

The line of Venus's nodes lies in the middle of Gemini and Sagittarius; which points are passed by the Earth in December and June. It follows, therefore, that transits of Venus must always happen in one or the other of these months.

*Inclination of the Orbits of the Planets to the Plane of the Ecliptic.*—Fig. 1 represents the orbit of a planet as inclined to the ecliptic at an angle of about 45°. But none of the planets have so great an inclination; the main object here being to illustrate the subject of nodes.

The inclination of the orbits of the several planets to the plane of the ecliptic, is shown in Fig. 2. In the centre is seen the sun. The dotted line running horizontally across the map, and through the sun's centre, represents the *plane* of the ecliptic. On the right and left are seen arcs of a circle, divided off, and numbered every ten degrees. The plain lines, inclined more or less, and passing through the centre of the sun, represent the plane of the orbits of the planets respectively. On the left, outside the graduated circle, are seen the names of the planets; and just within the circle the amount of the inclination of their orbits. This inclination is as follows:—

Mercury, . . . . .	7°	Ceres, . . . . .	10½°
Venus, . . . . .	3½	Pallas, . . . . .	34½
Earth, . . . . .		Jupiter, . . . . .	1½
Mars, . . . . .	2	Saturn, . . . . .	2½
Vesta, . . . . .	7	Herschel, . . . . .	¾
Astræa, . . . . .	7¾	Neptune, . . . . .	1¾°
Juno, . . . . .	13		

The wide portion of the graduated circle shows the limits of the Zodiac; extending 8° on each side of the ecliptic.

It will be seen that the orbits of most of the planets lie within the limits of the Zodiac; but Juno, Ceres, and Pallas, extend beyond its bounds. They are therefore sometimes called the *ultra zodiacal* planets. The orbit of Neptune is not inserted in the map.


Near the middle of Fig. 2, are seen two *comets* in their orbits; one coming down from the heights *North* of the ecliptic, passing around the sun and then reascending; and the other coming up from the depths *South* of the ecliptic. The design is to illustrate the fact that the comets do not revolve in the plane of the ecliptic, or as nearly so as do the planets; but that they approach the sun from all directions, or from every point in the heavens.

Young people and others cannot study much by lamp-light with impunity.

Sleeping rooms should have a fire-place, or some mode of ventilation besides the windows.



# JOURNAL OF EDUCATION



TORONTO, AUGUST, 1852.

## DISTRIBUTION OF THE SCHOOL FUND TO SCHOOL SECTIONS, ACCORDING TO AVERAGE ATTENDANCE.

By giving effect to the letter of the School Act, two changes take place in the apportionment and distribution of the School Fund for the current year. It is apportioned to the several Counties, Cities, Townships, Towns and Incorporated Villages, according to the official census of the population at large, and not, as heretofore, according to the local returns of school population. It is distributed to the several school sections of each township, not, as heretofore, according to the reported school population of each section, but according to the average attendance of pupils at school in each section—the mean average attendance of winter and summer being taken. In the first general application of so important a principle of the school law, it may be proper to advert again to the origin and reasons of its introduction.

This provision of the present Act (1st clause of the 31st section) was first submitted by the Chief Superintendent of Schools to the Governor General in Council, the 14th October, 1848, in transmitting the draft of a short bill designed to remedy some of the defects of the school law of 1846. The reasons assigned for the introduction of this new principle into the law relative to the distribution of school moneys, were as follows:—

“The *twelfth section* proposes giving a discretionary power for the distribution of the School fund in each district to the several schools, according to *attendance*, instead of according to school population. The Bathurst District Council has strongly advocated *attendance* as the basis of distributing the District School Fund.

“As population has been invariably adopted in all the popular school laws with which I have met, as the basis of distributing the Local School Fund of each county or town, as well as the State or National Fund to the several Municipal localities, I hesitated in proposing any other until within a few months since, when I received the last Annual Report of the Massachusetts Board of Education in which I find this distribution of the School Fund recommended to the Legislature with a force of argument which, I think, cannot be resisted. I find experienced persons whom I have consulted of the same opinion. I find on examination, that in many large school sections the attendance of pupils is often not larger than in small ones. Distributing the School Fund according to *attendance* will therefore be favourable to small sections. I find also that the attendance of pupils in new and poor rural sections and townships is larger in proportion to the whole school population, than in older townships and cities or towns. The adoption of the proposed principle of distribution will, therefore, be favourable to the newer and poorer sections of the country. This is the result of a most extended inquiry into the statistics of school *attendance* as compared with school *population* in the State of Massachusetts; and the Secretary of the State Board of Education concludes his argument on this point with the following impressive remarks:—

“It is most obvious, then, that an apportionment of the income of the School Fund according to the average attendance of children upon the school—taking the mean attendance for both summer and winter schools—would conduce greatly to the benefit of the smaller, the more agricultural, and the more sparsely populated towns. It would distribute the bounty of the State on the principle of helping those who help themselves. It would confer the benefit of the income on the children who attend the public schools, instead of bestowing it in behalf of children who attend academies and private schools, and never enter public schools at all; and thus it would give a practical answer to the pertinent question why money should be given to those who disdain to use it. And, lastly, it would be a new argument of great weight in many minds in favour of a more uniform attendance upon school; because the detention from school of any child who ought to be in it, would diminish the town's share of the income, and thus inflict palpable injustice, not only on the absentee, but on all other children in the town.”

In the Annual School Report of the Superintendent of Schools for the State of New York for 1850, we find the same provision

recommended to the favourable consideration of the Legislature of that State, in the following words:—

“It is respectfully suggested to the Legislature, whether the ratio of apportionment and of distribution of the school money might not advantageously be so changed as to have reference to the attendance of pupils upon the districts schools, for a certain specified period during the preceding year, instead of being upon either population or the number of children actually residing in the district. By the adoption of this mode of distribution, strong inducements would be presented to the taxable inhabitants of the several districts, to place their children in the Common Schools, and to keep them there for a sufficient length of time to secure an additional share of the public money.”

By an authority expressly given in the Act to the Chief Superintendent of Schools, the operation of this provision was suspended in 1850; and that suspension was repeated in 1851, in regard to most of the counties at the request of the county councils, in order that the fullest notice might be given to all parties concerned before its application. In the mean time, full explanations were given of its nature and operations, and all parties were advised to prepare for its introduction. After such a notification of 18 months, it would not be in accordance with the spirit and objects of the School Act for the Chief Superintendent to exercise the power of suspending the operations of this clause a third year, though he has been requested to do so by a few municipal councils.

Several county councils requested that the operation of this provision of the law might not be suspended last year, in so far as their counties were concerned; and their requests were complied with.

Questions have been asked by several local superintendents respecting the mode of giving effect to this provision of the law. The substance of the answers to these questions may be here inserted.

As to ascertaining the mean average attendance of pupils in summer and winter, it may be sufficient to give the following extract from the official circular, dated 28th June, 1851, addressed by the Chief Superintendent to local superintendents of schools on this subject:—

“To ascertain the average attendance of pupils at a school for a given period, involves no difficulty; but I am asked, how the “mean attendance of winter and summer is to be obtained?” I answer, that in the directions which have accompanied the blank forms of Trustees' reports during the last two or three years, it is stated that “the term *summer* in the report is intended to include the half year commencing in April and ending in September, and the term *winter* the half year commencing in October and ending in March;” or in other words, the *summer* part of the school year commences in the *spring*, and the *winter* part in the *autumn*. Should the “average winter attendance” of pupils in a school section be fifty, and should there be no school in such section during the summer, the “mean attendance of pupils in winter and summer” in such section would be twenty-five; but should there be a school in such section during the summer, and the average attendance be forty, then the mean attendance of fifty in the winter and forty in the summer, would be forty-five.”

A local superintendent proposes a case in the following words:—

“Some schools are kept open only six months in a year—four months, perhaps, in winter, and two in summer. The question is whether we are to take the average of the time the school is kept open, or whether we are to extend the average over the whole year? For example, a school is kept open two months in summer, the average attendance during which (two months) is twenty pupils. The same school is kept open four months in winter, with an average attendance during which (four months) of thirty. The *mean* average attendance in said school for six months will be twenty-five pupils.”

“Or,

“A school is kept open two months in summer, with an average attendance of twenty pupils for the two months—equal to an average attendance of 60 pupils for six months. The same school is kept open four months in the winter, with an average attendance of thirty pupils for the four months—equal to an average attendance of twenty pupils for six months. The *mean* average attendance of said school during the twelve months (or winter and summer of) said year, will be 13½.”

The question is, which of the above modes of taking the average attendance of pupils is the correct one? The answer is the *latter*, which agrees with the letter of the law, and the principle of the foregoing extract from the official circular of June 28, 1851; one object of this provision of the Act being to encourage the keeping open schools in the summer as well as winter.

Another local superintendent has proposed another question, as follows:—

“One school is kept open six months of a year—three months in winter and three months in summer, with an average attendance of forty pupils during each three months. Another school is kept open twelve months in a year—six months in winter and six months in summer, with an average attendance of forty pupils during each six months—Are both schools to receive alike? Or, is the latter to receive twice the amount of the former, having performed twice the amount of labour?”

The answer is, the latter school is entitled to twice as large a sum as the former; the principle of the law being to help those that help themselves, and in proportion as they help themselves.

We think the foregoing remarks are sufficient to illustrate the application of this provision of the School Act to all the varieties of cases which exist in connection with the school sections throughout the Province, while they show the equitable principle on which the provision itself is based.

It will be seen that this clause of the Act does not apply to Cities, Towns and Incorporated Villages, in each of which there is but one fund, one interest, and one Board of School Trustees. Nor does it affect the apportionment of the School Fund to Townships, to each of which, as well as to Cities, Towns and Villages, it is apportioned according to *population*. But it applies to the distribution of the School Fund in each Township to the several school sections of such Township—based upon the principle of aiding each section according to its works.

#### ERECTION OF SCHOOLHOUSES IN CITIES, TOWNS, AND INCORPORATED VILLAGES IN UPPER CANADA.

The erection of good schoolhouses is one of the surest indications of the progress of education in any country under a popular system of government. The number of good school-houses which have been erected in Upper Canada within the last five years, and which are being erected, is great beyond all precedent—great almost beyond belief. In the rural parts of the neighbouring State of New York, we believe the progress of popular education has not been equal to its advancement in the rural parts of Upper Canada; but the cities and towns of the neighbouring States are greatly in advance of our cities and towns, both in the character of their school-houses, and in the condition and character of their schools. It was only in 1847, that anything like a system of schools was first proposed for our cities and towns; and it was only in 1850, that our cities and towns were placed upon an equal footing with those of the neighbouring States, by the creation of the present system of an elective board of school trustees for each city, town, and incorporated village, with powers somewhat commensurate with their duties, and with a responsibility likely to ensure the exercise of prudence and energy. The success of the new system already exceeds what had been anticipated by its most sanguine advocate. School-houses, such as would be an honor and ornament to any town in America, have risen in Hamilton, London, Brantford, and Chatham; and similar buildings are going up in other cities and towns, and villages.

In Belleville, the erection of several brick schoolhouses has been decided upon; three of which (beautiful ones) are now nearly completed. Six large fine schoolhouses are in the course of erection in the City of Toronto. A few days since we received a letter from the Chairman of the Board of School Trustees in the Town of St. Catharines, of which the following is an extract:—

"The Board have decided to erect two schoolhouses of brick, to accommodate from two hundred to two hundred and fifty scholars each: of one or two stories high, as may be recommended, and of neat, but not expensive architectural design."

And it affords us peculiar pleasure to add the following letter from the Secretary of the Board of School Trustees for the newly incorporated village of Preston—a village the very existence of which will be an item of news to some of our readers:

Preston, August 2nd, 1852.

Rev. Dr. EGHERTON RYERSON,

Chief Superintendent of Schools, Toronto.

REV. SIR,—Having ascertained from your circular to clerks of cities, towns, and villages, that you desire copies of proceedings of the councils on educational matters, I beg leave to inform you of the proceedings of the board of trustees of this village, of which I have the honor to be secretary.

The Board, after having been organized, determined that the school of this village should be supported on the free school system. This system was introduced into this school in October, 1849, when

it was a section school, and has worked so admirably well since that time, that it would be a stain upon the character of any true friend of education to abandon it. To descent in praise on this system, would be to gild refined gold, or paint a beautiful lily. The free school system is its own eulogy; wherever it is introduced, it sows the seeds of morality and future independence, and may properly be called an act of genuine Christian charity.

The school being very large, and the schoolhouse only of ordinary size, the board determined to erect a new schoolhouse; a committee being appointed to select a suitable lot of ground for a site, and draft a plan for a new schoolhouse, it was resolved that an acre of ground be purchased, and a schoolhouse erected thereon as follows:—

The building to be placed 30 feet from the front limit of lot; the building to be 78 feet long, 26 feet wide, and a wing attached to the same, 26 by 34 feet; foundation walls, 5 feet; the other walls of bricks, 14 feet high. The house to have 3 school-rooms, 34 by 26 feet each, and a hall in centre of front building, 26 by 10 feet wide. The building to be warmed with hot air; two of the rooms to be used for boys' school, and one for girls' school; the hall to be used for the library; separate outer entrances into each school-room; each room to have 6 windows of 24 lights, 10 by 14; a frontispiece of 26 feet wide, to be built above front entrance—the frontispiece to have a semicircle window 5 feet wide; the hall to be arched so as to receive its principal light from the semicircle window. A wood-shed, 30 by 18 feet, and a privy, to be erected on suitable places, and also a well to be dug, with pump in the same. The lot is to be divided into two halves by a fence, leaving the boys' play-ground on the one side, and the girls' play-ground on the other; the play-grounds are intended to be planted with shade-trees. The seats in the school-room will be made similar to those in the academy of Rome, N. Y., as given in the *Journal of Education*, May, 1851, page 68; care will be taken for proper ventilation of the rooms;—a belfry, 8 feet high, 5 feet in diameter, six angular, with concave roof, covered with tin on frontispiece.

The Board has deemed it expedient to raise the amount for defraying the expenses of the ground, building, &c., by a tax upon all the rateable property in the corporation, and have desired the municipal council to pass a by-law to that effect. The amount desired is £400, to be raised in five years, each year £80, commencing this year. The contract for the building will be let by public auction.

The Board has also decided to raise the sum of £75 towards the payment of the teacher's salary. The municipal council has passed the by-law for the £400, in conformity with the request from the Board.

The Board has provided a set of tablet lessons of the first reading book, of arithmetic, and also a set of copy lines, all pasted on boards and varnished; these, together with the maps and other school apparatus previously provided, while a section school, afford a great facility to the teacher in his instructions.

The school, since the engagement of a very qualified teacher, lately from the Normal School, has increased in number to a great extent: there are about 135 scholars on the roll, of which, over 100 are attending daily. This alone would be a sufficient reason of enlarging the school premises, as it is a moral impossibility for one teacher to do justice to so large a number, and the plan of appointing two teachers to teach in one room has not been considered advisable. Beside this school, there is the separate Catholic school, and also a private female school in the village; the attendance, however, of both is but limited.

In conclusion, I have only to remark, that the foregoing proceedings of the Board of Trustees, are the result of the incorporation of this village—by which act, greater powers were conferred upon the trustees than in the section schools, thus affording them the opportunity of discharging the duties which devolve upon them, with much more facility, and with greater satisfaction to the public than trustees of section schools could do.

I have the honor to be,

Rev. Sir,

Your most obedient servant,

OTTO KLOTZ,

Secretary, Board of Trustees.

## Miscellaneous.

## THE SPIRIT OF DEATH AND THE ANGELS.

BY CHARLES SWAIN.

## THE ANGELS.

We are waiting, Spirit, waiting !  
 We have called the seraphs here,  
 'Mid the outer world creating  
 Glories of the inner sphere !  
 From the starry hills of heaven  
 Gaze we for thy solemn wing :  
 Wherefore was thy mission given ?  
 He who sent thee—bade thee bring !

## SPIRIT OF DEATH.

She is sleeping—softly sleeping—  
 Like an infant, hushed to rest ;  
 O'er her bends her mother, weeping :  
 Can I snatch her from her breast ?  
 Can I hurt the arms that fold her—  
 Would the heart which loves her so ?  
 Let the mother's eye behold her,  
 Yet a breath—and she shall go !

## THE ANGELS.

Lingering yet—and yet delaying  
 Still thy steps from Heaven's dome ;  
 Angels and archangels, staying,  
 Call the wanderer to her home !  
 We have scattered flowers elysian,  
 Gathered from immortal streams ;  
 Show her, thou, this lofty vision !  
 Fill her soul with seraph-dreams !

## SPIRIT OF DEATH.

She had asked to see their faces ;  
 And her heart is beating fast,  
 For those sweet and sad embraces,  
 Which she knows must be her last !  
 I have breathed of angel-blisses,  
 Told her spirit not to grieve :  
 Must I take her from their kisses—  
 From the last she must receive ?

There were sounds of hosts rejoicing  
 In that seraph realm above ;  
 Angels and archangels voicing  
 Hymns of triumph and of love !  
 There were sounds the midnight reading,  
 From a heart by anguish tost ;  
 And a mother's prayers ascending—  
 Weeping, wailing for her lost !

## SPECIMENS OF THE LORD'S PRAYER.

SHOWING THE CHANGES OF THE ENGLISH LANGUAGE.

I. *Early Classic: Anglo Saxon.*

Fäder, ure, thu the eart on Heofenum,  
 Si thin nama gehalgod ;  
 To-becume thin Rice ;  
 Gewördhe thin Willa ou Eorthen swa swa on Heofenum.  
 Urne ge dægumlican Hlaf syle us to-dæg ;  
 And forgyf us ure Gyltas swa swa we forgyfadh nrum Gyltendum  
 And ne gelæde thu us on Costnunge ;  
 Ac alys us of Yffe. Sothlice.

II. *Anglo-Saxon: A. D. 875.*

Fäder ure, thu the eart on Heofenum,  
 Si thin Nama gehalgod  
 To-becume thin Rice ;  
 Gewurthe thin Willa on Eorthan swa swa on Heofenum ;  
 Urne ge dægumlican Hlaf syle us to dæg ;  
 And forgyf us ure Gyltas, swa swa we forgyfath uram Gyltendum ;  
 And ne gelædde thu on Cosnung ;  
 Ac alyse us af Yffe.

III. *Anglo-Saxon: about A. D. 880.*

Fäder uren, thu art in Heofnum,  
 Si gehalgud Noma thin :  
 To-cymeth Ric thin ;  
 Ste Willo thin swae is in Heafne and in Eortha ;  
 Hlaf usenne to wistlic sel us to dæg ;  
 And fergef us Scylda usna soä us fergefon Scyldgum usum ;  
 And ne inläd usih in Costunge ;  
 Uh gefrig, usich from Yffe.

IV. *Anglo-Saxon: about A. D. 900.*

Thu ure Fäder, the eart on Heofenum,  
 Si thin Nama gehalgod ;  
 Cume thin Rice ;  
 Si thin Willa on Eortha, swa swa on Heofenum ;  
 Syle us to Dæg urne to dægumlican Hlaf ;  
 And forgif us ure Gyltas, swa swa we forgyfath tham the with us  
 agyltath ;  
 And ne läd thu na us on Costnunge ;  
 Ac alys us fram Yffe. Sih it swa.

V. *Anglo-Saxon: about 900: Another version.*

Fäder unser se the is on Heofnum,  
 Gihalgod bith Noma thin ;  
 To cymeth Rice thin ;  
 Sie Willa thin sie swa on Heafne and on Heorthe ;  
 Hlaf userne dægumlice sel us to Däge ;  
 And forgef us Synne use swa fastlice and ec we forgofoas egh-  
 welce Scylda user ;  
 And ne usih on läd teu in Costhunge ;  
 Ah afria usih from Yffe.

VI. *English or Semi-Saxon: about A. D. 1160.*

Ure Fader, thu the on Heofene eart,  
 Syo thin Name gehaleged ;  
 To cum thin Rice,  
 Geworde thin Wille on Heofene and on Eorthe ;  
 Syle us to Daig urne daighumliche Hlaf ;  
 And forgyf us ura Geltes, swa we fogyfath aelcen thare the with us  
 agylteth  
 And ne läd thu us on Costnunge ;  
 Ac alys us fram Yffe.

VII. *English: 1200—1300.*

Oure Fader, that art in Hevenes,  
 Halewid be thin Name ;  
 Thy kingdom come ;  
 To be thi Wille do as in Hevene and in Erthe.  
 Gyff to us this Day our Brede over other substance ;  
 And forgyue to us our Dettis, as forgyuen to ours Dettours ;  
 And lede us not into Te nptatioun ;  
 But delyue us fro Yvel Amen, that is, so beite.

VIII. *Wicliffe's version; 1370.*

Our Fadyr, that art in Hevenes,  
 Halloed be thy Name ;  
 Thy kingdom come to ;  
 Be thy Will done in Erthe as in Hevene ;  
 Geue to us this Day our Bread, over other substance :  
 And forgif to us our Dettis, as we forgeuen to our Dettors.  
 And leed us not into Temptation ;  
 But deliver us from Evil. Amen.

IX. *A. D. 1430.*

Oure Fadir, that art in Hevenis,  
 Halewid be thi name ;  
 Thi kingdom come to thee ;  
 Be thi Will done in Eerthe as in Hevene ;  
 Giue us this day oure Breed over othre substance ;  
 And forgive to us oure Dettis, as we forgiven oure Dettours.  
 And lede us not into Temptation ;  
 But deliver us from Ivel. Amen.

X. *A. D. 1526. Tindal's version.*

Our Father which art in Heaven,  
 Halowed be thy name ;  
 Let thy kingdom come ;  
 Thy will be fulfilled, as well in earth, as it is in heaven,  
 Geve us this day our dayly bred ;  
 And forgeve us our Dettis, as we forgiven our Dettors ;  
 And leade us not into temptation ;  
 But deliver us from Evil.  
 For thine is the kingdom, and the power, and the glorye forever.

## XI. Gothic: A. D. 360. Compare this with No. 1.

Atta unsar, thu in himinam ;  
 Weihnai namo thein ;  
 Quimai thiudenassus theins ;  
 Wairthai wiljah theins, sue in himin, jah ana airthai.  
 Hlaif unsarana thana sinteinan gif uns himmedaga,  
 Jah aflet uns thatei skulans sijaima, swaswe jah weis afletam thaim  
 skulam unsaraim,  
 Ja ni briggas uns in fraistubnjai,  
 Ak-lausei uns af thamma ubilin,  
 Unta theina ist thiudangardi jah mahta, jah wulthus ; in aiwins.  
 Amen.

## ECLIPSES OF THE SUN.

Total eclipses of the sun are the most sublime of celestial phenomena. Such an eclipse occurred upon the 28th July, 1851. Indeed, such eclipses are very seldom seen in the same portion of the earth. A complete annular eclipse will be seen in a part of the United States or Canada in May, 1854.

The utility of eclipses is much greater, than is generally supposed by the public. The concurrence of the predicted and actual times of their commencement and termination, affords most accurate proof of the correctness of the theories by which they were predicted. The comparison of recent with ancient eclipses has proved that there has been an acceleration of the moon's mean motion. The observation of eclipses (more especially those of the moon) is a means, and one frequently used, of determining the longitudes of places.

Chronology has derived very great assistance from eclipses. In the writings of many ancient historians, many events are recorded as having happened about the time when certain eclipses of the sun and moon occurred. By means of astronomy, the time of any eclipse can be determined with perfect accuracy.— And thus, if of any event, it is recorded, that it happened at a certain time before or after the eclipse of which an approximate time is given, the true date of that event is correctly determined. Many instances might here be given ; but two will be sufficient.

In the writings of Josephus, it is stated, that on the night succeeding the death of Herod, there was an eclipse of the moon. The record of this event, which is the only one mentioned by Josephus, in any of his writings, is of the greatest importance, since it determines the time of the death of Herod, and of the death of Jesus Christ.

Again ; in the history of Herodotus, record is made of an eclipse of the sun, which occurred during a battle between the Lydians and Medes. The day was suddenly changed into night ; the terrified armies ceased from their contest and made peace. Herodotus does not record the date of this event, except that it was in the sixth year of the war between the nations. Astronomy is thus called upon to determine the exact time of this event. This task is rendered, to some extent, more difficult, since Herodotus did not record the place or part of the country where the armies were contending. Hence, as might be supposed, different computers of the event have been led to entertain different opinions of its exact time and place. However, the learned Mr. Baily has conclusively shown, that an eclipse which could cause so great darkness, must have been total ; and hence it is required to determine at what time total solar eclipses occurred in that region. According to his calculations, this eclipse took place, September 30th, B. C. 610.

During the great eclipses which took place in 1836 and 1842, the former being annular, and the latter total, several peculiar and wonderful phenomena were observed.

Mr. Francis Baily describes his observations of them as follows :—1836—"When the cusps of the sun were about 40" asunder, a row of lucid points, like a string of bright beads, formed round that part of the circumference of the moon that was about to enter on the sun's disc. My surprise was great on finding that these luminous points, as well as the dark intervening spaces increased in magnitude, contiguous ones appearing to run into each other like drops of water ; for the rapidity of the change was so great, and the singularity of appearance as fascinating and attractive, that the mind was for a moment distracted and lost in the contemplation of the scene.

"Finally, as the moon pursued her course, these dark intervening spaces were stretched out into long, black, thick parallel lines, joining the limbs of the sun and moon ; when all at once they suddenly gave way and left the circumferences of the sun and moon in those points, as in the rest, comparatively smooth and circular ; and the moon perceptibly advanced on the face of the sun.

"The moon preserved its usual circular outline, during its progress across the sun's disc, until its opposite limb again approached the border of the sun. When, all at once, the light of the moon being at some distance from the edge of the sun, a number of long, black, thick parallel lines, exactly similar in appearance to those before-mentioned, suddenly darted forward from the moon, and joined the two limbs as before ; and the same phenomena were thus repeated, but in an inverse order."

In the total eclipse of 1842, Mr. Baily says, that he first 'looked out very narrowly for the black lines which were seen in the annular eclipse of 1836 as they would probably precede the string of beads. These lines, however, were not seen by me.'

"But the beads were distinctly visible, and on their first appearance, I had noted down the time of my chronometer, and was in the act of counting the seconds, in order to ascertain the exact time of their duration, when I was astounded by a tremendous burst of applause from the streets below, and at the same moment, was electrified by the sight of one of the most brilliant and splendid phenomena that can well be imagined. For, at that instant, the dark body of the moon was suddenly surrounded with a corona, or kind of bright glory, similar in shape and relative magnitude to that which painters draw around the heads of saints, and which by the French is designated an *aerole*.

"Pavia contains many thousand inhabitants, the greater part of whom, were at this hour, walking in the streets and squares, in order to witness this long-talked of phenomenon, and when the total obscuration took place, which was instantaneous, there was a universal shout from the observers which 'made the welkin ring,' and for the moment, withdrew my attention from the object on which I was immediately employed.

"I had, indeed, anticipated the appearance of a luminous circle round the moon during the time of total obscuration ; but I did not expect, from any of the accounts of previous eclipses that I had read, to witness so magnificent an exhibition as took place.

"I was surprised and astonished at the splendid scene which now so suddenly burst upon my view. It riveted my attention so effectually, that I quite lost sight of the string of beads, which however, were not completely closed when this phenomenon first appeared. Splendid as its appearance really was, at the same time there was something appalling in its character ; and I can readily imagine, that uncivilized nations may have become alarmed and terrified at such an object.

"But another remarkable phenomenon was now exhibited. Suddenly from the border of the moon there burst forth, at three different points, purple or lilac flames, visible to every eye, situated within the corona before mentioned."

## RULES FOR HOME INSTRUCTION.

The following rules contain thoughts which almost every parent needs to be reminded of frequently :—

1. From your children's earliest infancy, inculcate the necessity of instant obedience.
2. Unite firmness with gentleness. Let your children understand that you mean exactly what you say.
3. Never promise them anything, unless you are quite sure you can give them what you promise.
4. If you tell a little child to do something, show him how to do it, and see that it is done.
5. Always punish your children for wilfully disobeying you, but never punish them in anger.
6. Never let them perceive that they can vex you, or make you lose your self-command.

7. If they give way to petulance and temper, wait till they are calm, and then gently reason with them on the impropriety of their conduct.

8. Remember that a little *present* punishment, when the occasion arises, is much more effectual than the threatening of a greater punishment, should the fault be renewed.

9. Never give your children anything because they cry for it.

10. On no account allow them to do at one time what you have forbidden, under the same circumstances, at another.

11. Teach them that the only sure and easy way to appear good is to be good.

12. Accustom them to make their little recitals with perfect truth

13. Never allow of tale-bearing.

### THE ECONOMY OF TREES AND PLANTS.

The economy of trees, plants, and vegetables, is a curious subject of inquiry, and in all of them we may trace the hand of a beneficent Creator. The same care which He has bestowed on His creatures is extended to plants. This is remarkably the case with respect to hollies; the edges of the leaves are provided with strong, sharp spines, as high up as they are within the reach of cattle; above that height the leaves are generally smooth, the protecting spines being no longer necessary. Mr. Southey has noticed this circumstance in the following pretty lines:—

"O reader! hast thou ever stood to see  
The holly tree?  
The eye that contemplates it well perceives  
Its glossy leaves;  
Order'd, by an intelligence, so wise  
As might confound an Atheist's sophistries.

"Below a circling fence, its leaves are seen  
Wrinkled and keen;  
No grazing cattle through their prickly round  
Can reach to wound;  
But as they grow where nothing is to fear,  
Smooth and unarmed the pointless leaves appear.

I was lately shown a plant which puts out a pretty, modest flower, from the lower part of the stem. When its blossom is over, the stalk on which it grew turns down to the ground, the end penetrates the earth, and then throws out and ripens its seed-pod; but for this propensity of the plant, seeds would probably be destroyed by birds and insects. Some plants flourish in one climate, and others in another, according to the several purposes for which they were designed by a good Providence. Some which are generally useful will bear almost any temperature. This is particularly the case with grass. Nettles, I believe, are never touched by cattle of any description, neither will they trample upon them. What a secure retreat, therefore do they offer for birds to build their nests amongst, and for hares to deposit their young amidst the shelter they afford! The same remark applies in a great degree to furze, thistles, and the common bramble.—*Jesse's Gleanings in Natural History.*

**GREAT MEN.—THEIR MOMENTS OF COMPOSITION.**—Bossuet composed his grand sermons on his knees; Bulwer wrote his first novels in full dress, scented; Milton, before commencing his great work, invoked the influence of the Holy Spirit; Chrysostom meditated and studied while contemplating a painting of Saint Paul.—Bacon knelt down before composing his great work, and prayed for light from heaven. Pope could never compose well without declaiming for some time at the top of his voice. Bentham composed after playing a prelude on the organ, or whilst taking his "ante-jantacular" and "postprandial" walks in his garden. Saint Bernard composed his meditations amidst the woods. Camoens composed his verses with the roar of battle in his ears; for the Portuguese poet was a soldier. Tasso wrote his finest pieces in the lucid intervals of madness; Rousseau wrote his works early in the morning; Le Sage, at midday; Byron, at midnight. Hardouin rose at four o'clock in the morning, and wrote till late at night. LaFontaine wrote his fables chiefly under the shade of a tree. Pascal wrote most of his thoughts on little scraps of paper, at his by moments. Luther, when studying, always had his dog lying at his feet. Calvin studied in his bed. Racine composed his verses while walking about, reciting them in a loud voice.

## Educational Intelligence.

### CANADA.

#### MONTHLY SUMMARY.

From the London (Upper Canada) papers we regret to learn "that an attempt was made, early on the morning of the 14th ult., to burn down the Union School House of this town. About 5 o'clock the building was found to have caught fire under the staircase; by the prompt exertions of the firemen, the flames were prevented from doing great damage, though the stairs were injured. There is unfortunately little reason to doubt that the fire was caused by an incendiary, and the corporation have offered a reward of £250 for the discovery of the miscreant."

.....From the *Brockville Statesman* we learn that the School taught by Mr. Henry Evans, in the Township of Kitley, was examined on the 9th inst. The progress made by the children in the different classes was highly creditable to the teacher and satisfactory to the parents who attended on the examination. .... The recent examination of M. Deslandes' Academy, and of the Adelaide, Toronto, are highly spoken of by parties who attended both. .... A new schoolhouse is in course of erection in Perth.

**Upper Canada College.**—On Wednesday the 21st, the annual Recitations and distribution of prizes took place in the College Hall, at the conclusion of which the midsummer holidays commence. We have already borne testimony to the high standing of the pupils of the College, in the important branches of book-keeping and arithmetic, and the recitations on Wednesday spoke very highly for their proficiency in the higher departments of literature. By the prize list it will be seen that the highest point of competition, the Governor General's prize, has been gained this year by N. Walker, who has from his first entrance to Upper Canada College, to his attainment on the present occasion of the highest honour that can be gained in it, been distinguished alike for steady perseverance and good conduct, and we well know that all his school-fellows will with us, heartily congratulate him on the honour with which his connection closes with the first school in the Province. The prize for elocution has it will be seen, again been awarded to C. Gildersleeve, who has also gained several prizes.—*Patriot.*

**Toronto Academy.**—The semi-annual examination of this institution was held on Monday, Tuesday, and Wednesday of last week, and on Thursday the teachers and pupils assembled in the Common Hall, where the Principal, and various others interested in the success of the Institution delivered appropriate addresses to the students. Premiums were at the same time distributed to those who had chiefly distinguished themselves. The large number of ladies and gentlemen in attendance as visitors gave evidence that many of our citizens are interested in the prosperity of the Academy. The Classical department including the study of Scripture History, is presided over by Principal Gale. The system of teaching General History, introduced by Mr. Henning, does that gentleman the greatest credit. Indeed in the various departments of Mathematics, French, English, Arithmetic, Music, Drawing, &c., the proficiency of the students, was sufficient indication of the talent and industry displayed in their training.—*Examiner.*

**Woodstock Grammar School.**—The *British American* states that on Friday, the 9th July, the Annual Public Examination of the Grammar School of the town took place in the presence of the Board of Trustees and a considerable number of the parents. In every branch the examination was minute, yet not more so than was sufficient to display the diligence of the teachers and the proficiency of the pupils. Five hours were employed in the examination. The Trustees severally expressed themselves highly gratified, and although the examination had lasted a long time, yet their attention had been kept up by a series of interesting and useful exercises, in every one of which the pupils of the several classes acquitted themselves in the most creditable manner. The state of the school is excellent; and whilst there is much doing to promote the interests of Education in this county, it should be remembered that this seminary stands at the head of the great and benevolent cause of public education. All the schools direct to this one as affording the means of a substantial and liberal education, and as the school in which is finished the preparatory course for entering College. It is, perhaps, not generally known that the Trustees of all the Common Schools in the county have the privilege of transmitting to the Board of Trustees for the Grammar School the names of pupils of promising talents, for the purpose of being chosen by ballot for Free Scholars at this institution. As many as *ten* free scholars may be admitted, and vacancies filled up by ballot when they occur. Possessed of such advantages, the friends of education, and parents in particular, ought to encourage this seminary, and although all who may attend it may not have it in view to become Statesmen or theologians, yet the knowledge of the Classics to be obtained here, and of the higher branches of a liberal education, will be found, not only a source of pleasure but highly beneficial, what ever may be the place or grade in society which an individual may afterwards occupy.

**Whitby Grammar School.**—We had the pleasure of attending the annual examination of the pupils attending the Whitby Grammar School, which was held at the institution in this Village, on Thursday and Friday the 22nd and 23rd insts., and were very much pleased with the proficiency which the scholars have attained under the able superintendence of Mr. James Hodgson. The first thing that attracted our notice on entering the school, was a great number of well executed maps, which were exhibited to view on the walls of the school-room. On close examination of these maps we found them to be remarkably correct, and executed in a style of workmanship that would do no discredit to a professional draughtsman. In company with two gentlemen of the village, who had been selected to award the different prizes amongst the several competitors, we next proceeded to examine the specimens of penmanship. After the examination of the maps and writing-books had been finished, the master began the examination of the several classes in spelling, reading, English grammar, and Latin and Greek exercises and translations, and Natural Philosophy and Agricultural Chemistry, the several classes of which acquitted themselves most honorably, although this latter branch has never until very lately, been introduced into schools, and although the pupils in this school have been studying the science but a very short time, yet many of them showed themselves quite *au fait* in answering the several practical and theoretical questions put to them by the master. The first day's exercises were brought to a close by a very rigid examination of a class of young ladies in English grammar. A learned friend of ours, who prides himself in his knowledge of English Grammar, took an active part in the examination of the class, and selected some very intricate sentences for them to parse; and although he had examined a great many experienced classes in the United States and Canada, he acknowledged that he had never met a better set of female grammarians than the young ladies of which this class was composed. The exercises of the afternoon were agreeably diversified by the pupils singing, accompanied as they were by a young lady on the piano, whose sweet notes added much to the enjoyment of those present.—*Ontario Reporter.*

**Brockville Public Schools.**—The examination of Miss McClean's school took place at 9, A.M., on Saturday 17th, 37 children were present. Each scholar looked neat and tidy, and from the manner in which they conducted themselves, and the readiness with which they answered the several questions put, we are inclined to pass the highest encomiums on their teacher. Miss McClean pays no ordinary amount of care and attention to her pupils. The next examination we attended, was on the Monday following, which commenced at 9 o'clock, a. m. It was Mr. Hynes' School, where the scholars acquitted themselves in a manner reflecting great credit on themselves and their excellent Teacher. The following boys are deserving of praise, and we feel great pleasure in here mentioning their names, as a pattern for other scholars to imitate: John Cleveland, George Hawley and William Porter. It will be satisfaction to the parents of those boys, to know that the Superintendent spoke very highly of their capabilities and attention to studies. The next examination was Miss McMullen's School. The scholars in this school, like those in Miss McClean's, went through their exercises in a manner that was truly gratifying to all present. Miss McMullen very justly and deservedly received from the Superintendent and Visitors, high ecomiums. She has an ardent task daily to perform—that of instructing 76 scholars? The next and last examination which we attended, was Mr. Cosgrove's School, in the East Ward. Here we found a thronged school of the "masculine gender," of almost every age and size. They looked like what we soon found them to be—attentive and intelligent scholars. It did not take us long to perceive that Mr. Cosgrove must take an extraordinary amount of interest in his scholars. And many of them seemed to repay his trouble. The scholars in Miss Dulmage's school, were, we believe, examined on Monday; and the Superintendent and other visitors speak in very flattering terms both of Miss D.'s scholars, and her care and attention to their studies. We will not conclude without stating our opinion that, the Schools are well conducted, orderly and intelligent—possessing Teachers whose superiors it would, indeed, be no easy task to find.—*Abridged from the Statesman.*

**Education in Montreal, from an American Point of View.**—From a recent letter of an American publisher in the *Boston Post*, we select the following paragraph, relating to the state of Education in Montreal. The allusion to the public schools in the city is highly significant:—

There are now three colleges here in operation. The old French college has been greatly enlarged. St. Mary's College, (Jesuit) in the St. Lawrence suburbs, is a very handsome building in the Grecian style, on a fine site. The M'Gill college, is delightfully located between Sherbrooke street and the foot of the mountain. The Baptists built a very handsome college in the St. Lawrence suburbs, but it is not in operation. The building is now to be used for a hospital. Something has been done here towards establishing public schools, but the result would not be worth naming to those who are acquainted with the Boston system. There are three medical schools here, all modern, viz: the Montreal school of Medicine and the St. Lawrence School of Medicine; and there is a Medical school attached to the M'Gill College. Then there is the College of Physicians and Surgeons; the Medico Chirurgic Society, and the Pathologic Society. The Merchants have their Board of Trade, Mercantile Library, and Merchants' Exchange. There is an Agricultural Society, and measures are in progress for an Agricultural College. The French have their Institute Canadien, and there is a Mechanics' Institute, and a Historical Society, and the Advocates' Library. There are fifteen newspapers six of which are in French. There used to be but five newspapers, and only one of them in French. Four of the papers printed in English are dailies. One of the weeklies is an agricultural paper, and two are religious, one representing Catholicism, and the other Protestantism. There are nine periodicals, semi monthly, and monthly, and quarterly—religious, temperance, literary, medical and scientific.

## NOVA SCOTIA.

**Anniversary Exercises at the Wesleyan Academy, Mount Allison.**

—On Monday, June 21, the Annual Examination of the students was held. The Trustees, and several other friends of the Institution were present. Upwards of thirty classes were examined, which, with scarcely an exception, afforded satisfactory evidence, that both students and teachers had been devoting themselves to their respective duties with zeal, diligence and success. On Tuesday morning, the roads leading to Mount Allison presented an animated appearance. Carriage and pedestrians, in unusual numbers, seemed all to be converging to a common point—the front entrance to the academy. Some time before the appointed hour, the spacious lecture-room of the institution was well filled by those who had assembled to witness the closing exercises, and afterwards, it became densely crowded; and many, who were unable to gain admission, remained in the halls, and at the windows, attentively listening for two or three hours. The exercises of the day consisted of the rehearsal of appropriate selections for declamation by ten or twelve of the junior students, followed by the delivery of original essays, &c., by five or six of the senior students. These all evinced talent of a highly respectable character. The original pieces spoken by the young men were indicative of considerable power of thought, felicity of expression, and were richly imbued with the spirit of christianity, and well delivered.—After these, came the Address of the Rev. Dr. Richey, it was eloquent, interesting, and instructive. After Dr. Richey had finished his address, the chaplain gave out a suitable hymn, which having been sung, the Rev. Mr. Knight and the Rev. Dr. Evans engaged in prayer, and the services in the lecture-room were brought to a close by pronouncing the Apostolic Benediction. At two o'clock the trustees, and a large party of the parents of students, and other friends of the institution, dined with the academic family in the dining hall, which, as well as the lecture room, had been most tastefully decorated by the young gentlemen with evergreens for the occasion. At the table the founder of the institution presided.—*The Wesleyan.*

**Branch Female Academy at Sackville, N. B.**—On Monday evening last, a meeting was held in the the Brunswick Street Church, in reference to the female branch of the institution at Sackville. Dr. Richey delivered an eloquent address; and was followed by the Rev. H. Pickard. A. M, Principal of Sackville Academy, who made a clear and satisfactory statement of the plan for the erection of the proposed edifice, by the sale of Scholarships and the donations of friends. Rev. R. Knight, and the Rev. Dr. Evans also addressed the meeting.

## VAN DIEMAN'S LAND.

**Laying the Corner Stone of Horton College—Van Dieman's Land.**—Tuesday, the 6th of January was a day of much interest at Somercotes, near Ross, amongst the friends of education. It had been arranged that the ceremony of laying the foundation-stone of the Wesleyan College should take place on that day at twelve o'clock. As the time drew near, conveniences of all kinds and people of all classes, were to be seen moving towards the spot. All the Wesleyan ministers in the colony were present. The Rev. Jabez Waterhouse commenced the proceedings by giving out the 620th hymn, and the Rev. Mr. Innis offered a very appropriate and impressive prayer. The Rev. J. A. Manton then addressed the assembly. He said that the idea of the establishment of a collegiate school had originated with Capt. Horton. They were indebted to the gentleman's christian liberality for the gift of the eligible plot of land on which they stood, (20 acres) and for a thousand pounds towards the object. He hoped that this example of generosity would call forth a corresponding effort on the part of Wesleyans and the friends of education generally in these colonies. The Rev gentleman referred to the necessity which existed for such an institution, and he expected that thousands of families would be attracted to this part of the world by the recent discovery of gold, when that necessity would be greatly increased. He concluded a very eloquent and forcible address, by exhorting the assembly to contribute as God had given them the ability towards an institution designed to be a blessing to their children and children's children. The Rev. H. H. Gaud then read from a parchment scroll an inscription:—"The stone was laid in the name of the Holy Trinity on Tuesday the sixth day of January, in the year of our Lord 1852, and in the fiftieth year of the reign of her Gracious Majesty Victoria, Queen of the United Kingdom of Great Britain and Ireland, and in the fifth year of the administration of Sir William Thomas Denison, Lieutenant-Governor of Van Dieman's Land, by Samuel Horton, Esq., the generous founder of this college, in commemoration of whose munificence the building is henceforth to be designated Horton College. The property has been conveyed in trust to the Wesleyan Church for its sole use and benefit as a collegiate institution for ever" (Then followed the names of the President and Secretary of the Conference, and of the local Ministers and Trustees.) The parchment was then put into a glass bottle.

the bottle was sealed, and the whole was deposited in a cavity underneath the stone. The stone being lowered into its proper position and duly adjusted, Captain Horton took the mallet, and striking the stone in the usual form, said, "I lay the foundation stone of a Wesleyan College in the name of God the Father, Son and Holy Spirit. I pray God that his blessing may rest on this enterprise, that the building may be speedily erected, and that thousands of young persons may be trained in it, who shall be ornaments and blessings to their country, the church, and the world." The Rev. Edward Sweetman then addressed the assembly. Another hymn was then sung, and the benediction was pronounced.—*Abridged from the Colonial Times.*

## BRITISH AND FOREIGN.

### MONTHLY SUMMARY.

A valuable document on the proposed amended Charter of the London University has lately been published. . . . . The Earl of Derby has supplied the vacancy at the Irish Education Board, caused by the death of Archbishop Murray, by Mr. Blackburn, the Lord Chancellor. . . . . The Rev. John George Beresford, Archbishop of Armagh, has contributed £3000 for a magnificent bell tower at Trinity College, Dublin, of which his grace is Chancellor. . . . . The usual examination of the teachers connected with the National Board of Education, took place in June, and, from various recent causes, appeared to excite a more than ordinary share of public interest. The Lord Lieutenant took the chair, surrounded by the visitors and teachers, and the examination having terminated, delivered an address which was received with the most enthusiastic applause. . . . . Three students have recently been expelled from the Congregational College of St. John's Wood, London, for their "rejection of the supreme authority of the Sacred Scriptures." . . . . Funds, chiefly from the United States, continue to reach Dublin in aid of the projected R. C. University. At the last monthly meeting £3543 was announced. . . . . It is reported that the Danish Government contemplate the suppression of the University of Kisel by its incorporation with that of Copenhagen. . . . . Madame Goldschmidt (Jenny Lind,) has transmitted £10,000 to the Swedish government, for the erection of schools in destitute districts.

*Cambridge University.*—From an interesting letter in the *Boston Post* we select the following in relation to the University of Cambridge, England:

There is material enough here for a score of letters, but I shall not write you a history of Cambridge now. Some of your readers may think of Cambridge university as like "Yale" or "Amherst,"—a mere college—It is a UNIVERSITY, comprising seventeen colleges and halls. It began on so small a scale as a mere place of residents for a few students, where teachers—principally ecclesiastics—taught them for small fees—actually but a few pence daily, and has since grown to such enormous dimensions, that it is very difficult to understand or comprehend the scope of such an immense establishment. The "senate" consisting of professors, ministers, tutors, "scholars"—those who have scholarships,—"fellows"—those who succeed to fellowships, provosts, presidents, &c., number a little over 3200; and the undergraduates, or students proper, a little over 6000; so that instead of one of Sidney Smyth's military schools with thirty-four professors, and seventeen ensigns for students, educating half an ensign to each professor! We have here about *one student and three quarters* to a professor, or person in authority. Respecting the income of Cambridge university, no certain data can be obtained, for those who are interested will not give any information. At Oxford it is the same. Her Majesty's commission, appointed during Lord John Russell's administration, made "enquiries," but the authorities of both the universities told them to go about their business. If it is not known with certainty about the income of the various colleges, some shrewd guesses have been made, and they clearly establish the fact that the advantages extended towards young men who wish to obtain an education, are nothing compared to the money expended; and further, that in scarce a single instance is the will or wishes of the early founders carried out. It is the most expensive place in the world probably to obtain an education, and the amount of funds is so enormous, that without a doubt they would pay every tuition fee, and for all the books also, in the education of every young person educated among the millions inhabiting New York and the New England states, in every one of the schools and colleges there in operation. Trinity college alone has over 1000 persons on its establishment, a majority of whom receive their whole support from the college. In this college appear many illustrious names. Since 1600, have been educated here, Robert Devereux, earl of Essex; the favorite of Queen Elizabeth, Sir Edward Coke—he who rode "upon Littleton" into a world of fame; Lord Bacon; Fulke Grenville, Lord Brook; Dr. John Downe; Cowley, the poet; Dr. Barrow; Nathaniel Lee, the dramatist; glorious John Dryden, John Ray, Sir Isaac Newton; Porson, the famous Greek professor, who was picked up drunk; and last—chronologically—George Gordon, Lord Byron, the author of Childe Harold's pilgrimage. The most

interesting edifice in Cambridge, taking its contents into consideration, is Trinity College Library. It is 190 feet long, 40 wide, and 38 feet high. The recess containing the books, have not their partitions extended quite half way to the roof, and this while it gives ample room for books, displays the elegant and lofty proportions of the library to good advantage. On the top of the recesses, on the left, are busts of ancient characters, and on the right, eminent moderns. The former are Homer, Virgil, Horace, Marcus Aurelius, Seneca, M. Brutus, Julius Cæsar, Cicero, Demosthenes, Plato, Socrates, Democritus and Anaxagoras. With the moderns are Shakespeare, Milton, Dryden, Pope, Newton, Spencer, Beaumont, Fletcher, Addison, Locke, Ben Jonson, Inigo Jones and Dr. Hooper. By far the most interesting piece of sculpture in Trinity College Library, is the statue of Byron by Thorwaldsen. It is executed in white marble; the poet in a sitting posture on a pedestal, with one hand on a broken Grecian column. The sculptor has shown his good sense by putting the poet "in his habit as he lived," with a cloak on, and in modern English costume. Appendages are seen in a skull and an owl, the bird of wisdom. No statue of any person of modern times has ever interested me more than this. What a countenance he has! The statue occupies the post of honor, in the library, being in the centre, near the upper end of the room. Very little honour, though, to the college authorities in having it here. This statue was executed by the great Danish sculptor in Copenhagen, for a gentleman in England, and on its arrival in London, owing to some cause, I believe the death of the owner, it remained in the custom house for some years, and was finally, after repeated solicitations, purchased for a small sum, and placed here in the college where he received his education. This is the only full length statue in the library. This library of Trinity College was erected from designs by Sir Christopher Wren, and cost about £20,000. As a collection of books, manuscripts, works of art, and instruments, the universities of Oxford and Cambridge possess undoubted advantages over smaller and younger institutions, but that the direct intentions of the beneficent founders have been laid aside in a great many instances by the recipients of fat benefices, is as plain as the Alps to a Swiss traveller. Look at the one example of King's College. Grants were originally made by King Henry 6th to found this college for the purpose of educating poor boys from Eton school. It has 70 fellows and scholars, and *only educates four students*, every three years, all of whom must be from Eton School. The "fellows" and "scholars" are always kept to the original number of seventy, and as a death occurs the vacancy is filled from the ranks of the four who are being educated. The "fellowship" or "scholarship" of King's College, is simply a provision for life, a home, and income, without any duties to perform.

## UNITED STATES.

### MONTHLY SUMMARY.

The Foundation stone of an academy has been laid at Stockton, California, by the Rev. Mr. Benson, missionary of the M. E. Church. . . . . The academy at San Jose, under the care of the Rev. Mr. Kimberlin, is also favourably reported. . . . . The primary department of the "University of the Pacific" was opened at Santa Clara, early in May, under favourable auspices, under the care of the Rev. Mr. Bannister. It has fifty-four students, and a small graduating class has been organized. . . . . The Board of Directors of the Union Theological Seminary N. Y., have made arrangements to add two stories to the Seminary building, which will furnish thirty-six spacious study rooms, and seventy two sleeping apartments, in addition to those now in use, except some attic dormitories. The rooms are to be lighted with gas, and bathing-rooms fitted up in the basement. These additions and improvements are expected to be ready for use at the beginning of the next term in the Autumn. . . . . At the recent annual commencement of Brown University, at Providence, R. I., James B. Angell, was elected professor of modern languages, and the Rev. Henry Day was elected professor of natural philosophy and civil engineering. . . . . The Providence Journal says that "the prospects of the University have at no former period been so flattering. A fund has been created for the purposes of education, and admirably invested, amounting to \$181,000. The number of students admitted during the year has been 109. The Library now consists of nearly 25,000 volumes." . . . . At the annual commencement of St. John's (R. Catholic) College, at Fordham, N. Y., on Thursday last, the degree of LL. D. was conferred on Thos. F. Meagher. . . . . We learn by the Worcester Transcript that the Holy Cross R. C. College, Massachusetts, has been destroyed by fire and that there was no insurance on the college. The building cost about \$30,000, and including the furniture, &c. the loss will be about \$50,000.

*Commencement at Harvard University.*—The annual commencement at Harvard College was observed on Wednesday, July 21. The governor and council, and other members of the state government, were escorted to Cambridge by the Lancers. Shortly after, a procession of the officers of the college, graduating class and others, preceded by the Boston

Brigade Band, marched to where the exercises took place. A voluntary was first performed by the band, when prayer was offered by Rev. Professor Walker. The list of speakers was much longer than usual, but of these eleven took no part in the exercises. The limited time allotted to each speaker was hardly sufficient to exhibit much evidence of ability, except it be in that rare faculty of brevity which so few public speakers understand. The compositions did not perhaps indicate more than the usual character of compositions on such occasions, and much of the elocution could not be highly commended for its style. There were some, however, who exhibited good evidence of ability both in writing and speaking. The graduating class is understood to be the largest which has ever graduated from Harvard.—*Boston Post*.

*Festival of the Alumni of Harvard.*—The gathering of the Alumni of Harvard College, at Cambridge, yesterday, which took the place of the usual oration and poem before the Phi Beta Kappa Society, was very large. At a meeting of the Association of the Alumni, in the morning, Mr. Walley, from a committee appointed in May last, made a report upon a plan to obtain funds for the use of the college. The plan proposes the establishment of a system of scholarships, by the various classes which have one or more living members, each scholarship to be founded by the payment of \$2000 into the treasury of the college, the class contributing having the right of nominating any meritorious young man in college, or about to enter, as a suitable person to receive the income of the scholarship of such a class. The report of the committee was adopted, and the officers of the last year were re-elected. At about half past 12 o'clock, the association assembled to hear an oration by Hon. R. C. Winthrop. The oration was more than an hour and a half in length, upon the "obligation of educated men to society," and was distinguished by the ability which characterizes its author.—*Ibid*.

*The N. Y. State Normal School—Close of the Term.*—A Correspondent of the *N. Y. Times* states that the closing exercises of the Sixteenth Term of the New York State Normal School, took place on the 8th inst. Notwithstanding the oppressive heat of the day, a large audience assembled on this occasion. After the opening exercises, a poem; written by one of the graduates—JANE A. McEWAN, of Herkimer County—was read by Miss HANCOCK, one of the teachers in the institution. In the absence of Hon. HENRY S. RANDALL, the State Superintendent of Common Schools, an address was then delivered by Rev. Dr. KIP, of this city. After a song by the pupils, a valedictory address was pronounced by L. HARRISON CHERRY, a pupil from Onondaga County. Prof. GEO. R. PERKINS, who now retires from the Principalship of this school, next gave his farewell address. He had been connected with the Institution from its first organization. Associated with its first Principal, the late Prof D. P. PAGE, he watched over its infancy, when, too, the enterprise was deemed but an experiment. Together, they saw its early rapid growth and prosperity; beheld its accumulating friends, and its beneficial influence upon the Common Schools of our State. On the death of Prof. PAGE, a little more than four years since, Prof. PERKINS was appointed as Principal, which position he has since continued to occupy, with honor to himself and credit to the Institution. During this period the Normal School has been made a permanent institution, by an endowment from the state; A new commodious hall has also been erected; and the details and management of the School have been reduced to more system and perfection. All this has not been accomplished without much labour; and the arduous duties which devolve upon the principal, now renders it necessary that he should retire from the educational field, to restore his health. The recent appointment of teachers in this institution was given in the last number of the *Journal of Education*. [Ed.]

## Literary and Scientific Intelligence.

### MONTHLY SUMMARY.

Sir Roderick Impey Murchison has been unanimously elected a trustee of the British Museum, in the place of the late Earl of Derby. A monument to Moore has been decided upon—to be erected in Dublin. The Scotch commissaries of fisheries have been adopting an ingenious device for learning the migration of the salmon. They have marked a large number of fish hatched from the spawn deposited last year in the Tweed, by placing around them a belt of Indian Rubber, numbered and dated. One of the fish was caught, two days after being thus marked, and let go, a hundred miles from the mouth of the Tweed. Count D'Orsay has been appointed superintendent of the fine arts of the Elysee, with a salary of £1000 a year. The President has placed at the Count's disposal £22,000 from his private purse, to make purchases with. The following new works are announced in England:—The "History of Europe," from the fall of Napoleon, in 1815, by Sir Archibald Alison, (newly made a baronet,) is announced. A translation of Niebuhr's Ancient History, is also in the

press. Mr. James F. Frerier of Oxford is about to publish the *Theory of Knowing and Being, Institutes of Metaphysics*. Sir William Hamilton, who is regarded as a colossus among European thinkers, has lately published a series of tales, three of which have the following extraordinary titles: *Philosophy of the Unconditioned, Cousin's Infinite Absolutism, Conditions of the Thinkable Systematized*. As a truly useful book may be mentioned, *The Importance of Literature to Men of Business, a series of addresses delivered at 'popular institutions by men of celebrity,'* including Sir J. Herschel, Mr. D'Israeli, Sir D. Brewster, Professor Phillips, Lord Manners, Archbishop Whately, Sir A. Alison, the Earl of Carlisle, Mr. Verplanck, of New York, and the Duke of Argyll. Macfarlane the defender of Neapolitan tyranny against Mr. Gladstone, is about to issue a volume on Japan. Mr. W. Cramp has in hand a new edition of Junius, with notes fac, simile, autograph letters, and a mass of other evidence proving, he says, incontestably that the Earl of Chesterfield was the author of these famous epistles. J. H. Burton, the biographer of Hume, announcing a *History of Scotland since the union*. Lord Lansdown has been requested to sit for a statue in commemoration of his eminent services. A working man's memorial to Sir R. Peel has been decided upon. Books are to be bought and bound with a stamped inscription of an appropriate kind, and then distributed to the libraries of public institutions throughout the country. The *Panama Herald* of a late date, gives an interesting account of the pearl fisheries in Panama Bay. About fifteen hundred persons are engaged in the business, and the value of the pearls obtained varies from \$80,000, to \$150,000 per annum, seldom less than one hundred thousand dollars. The best divers remain under water from fifty-eight to sixty-one seconds, and generally bring up from twelve to fifteen pearl shells. The price of pearls varies according to their purity, shape and weight, say from five to ten thousand dollars per ounce. From five hundred to fifteen hundred are very frequently paid in Panama for single pearls not weighing more than three sixteenths of an ounce. The U. S. brigantine *Dolphin* has just returned from a surveying cruise made under the direction of the Bureau of Hydrography of the Navy Department. She has sounded the ocean at depths varying from one to four miles, and made daily observations for temperatures and currents of the ocean, both superficial and submarine. The deep sea soundings were taken by means of a small fishing line, with a 32-pound shot attached, ran out from a boat which was kept directly over the shot by a gentle motion of the cars. The deepest cast in which bottom was obtained, was in 3860 fathoms, about 4½ statute miles. The currents were observed at the surface, and at the depth of ten and eighty fathoms, and the temperatures at various depths, from the surface to 500 fathoms. The *Dolphin* has carefully examined the reported positions of a number of islands, rocks, and shoals in her track, and has ascertained that no such obstacles exist. She has also made a survey, and accurately defined the position of the Rocas, rocky islets lying between Fernando de Noronha and the main land of South America. Great attention has been paid to the equatorial, St. Roque and Amazon currents; and the submarine volcanic region, south of the Equator, has been thoroughly explored. The *Dolphin* has also made a complete set of meteorological observations.

*Proposed Further Researches in the Arctic Regions.*—We are informed that it is the intention of the Hudson's Bay Company immediately to despatch Dr. John Rae to the Northern coasts of America, to complete various discoveries in those regions. The gallant officer proceeds by way of Chesterfield Inlet to Cape Nacolia, Sir James Ross's furthest in 1831; thence to survey as far North as Cape Bird, Sir James Ross's furthest in 1850—thus to complete the northwest passage. Dr. Rae will also search various other portions of those inhospitable shores, to set at rest many conflicting statements and add to our knowledge of the country. The search for Sir John Franklin will, of course, be a paramount object with Dr. Rae. Great credit cannot but be given to the Hudson's Bay Company for their enterprising conduct on behalf of science and for the sake of humanity.—*British Nautical Standard*.

*Geographical Discovery.*—The Geographical Society of Paris has awarded two large silver medals to the Revs. Dr. Krapf and J. Rebmann, missionaries of the Church Missionary Society, for the discovery of a snowy mountain in Eastern Africa, about three degrees south of the line, named Mount Kilimandjaro. Dr. Krapf has since visited another range about two degrees northward, where he has announced the discovery of another mountain still loftier—Mount Kenia, which appears to be the Mount Arangos of Hoking, otherwise named the Mountain of the Moon.

*Discoveries in the Interior of Africa.*—A correspondent of the *Watchman*, in a letter dated Cape Town, April 30th, 1852, says:—One of the most interesting events of the past month was the arrival, in Cape Town, of the celebrated South African travellers, Dr. Livingstone and Mr. Oswell, who have recently penetrated further into the interior, beyond the north-eastern boundary of this colony, than any other Europeans, and who have just returned from an interesting tour to the river Sesheke, 200 miles



beyond the Lake Ngami, discovered by them in the course of a former journey. The country, explored by the travellers, is described as remarkably fertile, and generally covered with long crane grass. They seem to have no doubt that the river Sesheke, now discovered, is a continuation of the Zambesi, which empties itself into the Indian Ocean, above Dela-Gon Bay, and which was explored and described many years ago by Commodore Owen. This river is navigable to a considerable extent, when further progress is interrupted by a large cataract, which has been compared to the Falls of Niagara.

**The Leipsic Book Trade.**—We had a pleasant journey through a well cultivated country and a succession of old and interesting German towns, from Dresden to Leipsic. The first point of importance is Meissen, where the old castle in which the Princes of Saxony formerly resided, has been converted into a manufactory for the well known Dresden china or porcelain. The first china that Europe produced was made here in 1710. We have reached Leipsic at a moment of much deep interest. This is the week of their greatest fair. The city is full of strangers, and literally crammed with rich and beautiful fabrics. These fairs draw people from all parts of Europe, to the number of 30, 40, 50, and in 1834, of 80,000. Then (1834) it is said that the sales amounted to eighty millions of dollars. Leipsic is the great book mart of Europe. Indeed books form the most important part of the trade of Leipsic, amounting to nine or ten millions of francs annually. There are a hundred book publishers and booksellers here, and 5 or 600 more are here now attending the fair. I went this morning through an entire street devoted to printing and binding. The rattling of presses and the clicking of type sounded familiarly. I then called upon Mr. Toucknitz, who is the Harper of Leipsic, whose establishment reminds me of that great American publishing house. Mr. Toucknitz re-publishes in English, cheap editions of all the best works of English and American authors. In his warehouses, besides tons of English volumes, were the works of Washington Irving and J. Fenimore Cooper, complete. Mr. Toucknitz's books are sold throughout Europe. The University of Leipsic has a world-wide fame, and, next to Prague, is the oldest in Germany. It has upwards of 60 professors, and over 1,000 students. In a cellar near the market-place, Dr. Faustus was supposed to have lived in collusion with him of the cloven foot. The market-place itself is queer, from a peculiar order, or disorder of architecture. Here is the town-house in which the allied Sovereigns met when, after a tremendous battle, they had driven Napoleon from Leipsic. There is now a continuous railroad from Leipsic to Frankford, the last link having been just supplied by the completion of the road.—[Correspondent of the Albany Evening Journal.

**Vegetation of the Frozen Regions.**—We take the following from a review in the London Literary Gazette, of Seaman's "Botany of the Voyage of H. M. S. Herald under the command of captain Kellet." The Herald was one of the ships engaged from 1845 to 1851 in exploring the Arctic regions, and in search of Sir John Franklin. Among the more remarkable features of this uninviting region are the ice-cliffs crowned with soil and luxuriant vegetation. The following account of them will be new to most of our readers:—"The soil is always frozen, and merely thaws during the summer, a few feet below the surface. But thawing is by no means uniform. In peat it extends not deeper than two feet, while in other formations, especially in sand or gravel, the ground is free from frost to the depth of nearly a fathom, showing that sand is a better conductor of heat than peat or clay, and corroborating the observation of the accurate J. D. Hooker, who, after a series of experiments in India, arrived at the same conclusion. The roots of the plants, even those of the shrubs do not penetrate into the frozen subsoil. On reaching it they recoil as if they touched upon a rock through which no passage could be forced. It may be surprising to behold a vegetation flourishing under such circumstances, existing independent, it would seem, of terrestrial heat. But surprise is changed into amazement on visiting Kotzebue Sound, where on the tops of icebergs, herbs and shrubs are thriving with luxuriance only equalled in more favoured climes. There, from Elephant to Eschscholtz Point, is a series of cliffs from seventy to ninety feet high, which present some striking illustrations of the manner in which Arctic plants grow. Three distinct layers compose these cliffs. The lower, as far as it can be seen above the ground, is ice, and from twenty to fifty feet high. The central is clay, varying in thickness from two to twenty feet, and being intermingled with remains of fossil elephants, horses, deer, and musk oxen. The clay is covered by peat, the third layer, bearing the vegetation to which it owes its existence. Every year, during July, August, and September, masses of ice melt, by which the uppermost layers are deprived of support, and tumble down. A complete chaos is thus created; ice, plants, bones, peat, clay, are mixed in the most disorderly manner. It is hardly possible to imagine a more grotesque aspect. Here are seen pieces still covered with lichens and mosses, there a shoal of earth with bushes of willows; at one place a lump of clay with senecios and polygonums, at another the remnants of the mammoth, tufts of hair, and some brown dust, which emits the smell

peculiar to burial-places, and is evidently decomposed animal matter. The foot frequently stumbles over enormous osteological remains, some elephants' tusks measuring as much as twelve feet in length, and weighing more than 240 pounds. Nor is the formation confined to Eschscholtz Bay. It is observed in various parts of Kotzebue Sound, on the river Buckland, and in other localities, making it probable that a great portion of extreme Northwestern America is, underneath, a solid mass of ice. With such facts we must acknowledge that terrestrial heat exercises but a limited and indirect influence upon vegetable life, and that to the solar rays we are mainly indebted to the existence of those forms which clothe with verdure the surface of our planet." A curious fact is stated respecting the condition of the vegetable world during the long day of the Arctic summer.—Although the sun never sets while it lasts, plants make no mistake about the time, when, if it be not night, it ought to be; but regularly as the evening hours approach, and when a midnight sun is several degrees above the horizon, droop their leaves, and sleep even as if they do at sunset in more favoured climes. "If man," observes Mr. Seemann, "should ever reach the Pole, and be undecided which way to turn, when his compass has become sluggish, his timepiece out of order, the plants which he may happen to meet will show him the way; their sleeping leaves tell him that midnight is at hand, and that at that time the sun is standing in the north."

**Monument of the late Thomas Moore.**—At a meeting of the friends and admirers of the late Thomas Moore, held at Lansdown-house, on Tuesday last, a letter was read from Lord Claremont, stating that at a previous meeting it had been resolved to erect a public monument to the memory of the poet in his native city Dublin. It was then resolved that a subscription should be raised in Great Britain in furtherance of the object, and the following noblemen and gentlemen were appointed a committee to carry it out: Lords Lansdowne, Clarendon, Fortescue, Wicklow, Carlisle, Shelburne, John Russell, and Monteagle, and Messrs. Macaulay and Longman. Other resolutions as to the details of the subscription were then come to, a circular to be forthwith issued was prepared, and Mr. Longman consented to act as treasurer. Those who respect the memory or admire the genius of the lamented poet will thus have an opportunity of testifying their feelings and their admiration.

**Influence of the Moon.**—A Paris astronomer has published the results of twenty years' observation upon the influence of the moon upon the weather. From the new moon to the first it rained (during the period of twenty years embraced in the calculations) 764 days: from the first quarter to the full moon it rained 845 days; from the full moon to the last quarter it rained 761 days; and from the last quarter to the new moon it rained 896 days. So that during the moon's increase there were 1,609 rainy days, and during her decrease only 1,457—a difference of 152 days. This difference is more likely to have been accidental than the result of any natural cause, and the conclusion which we derive from the statement is that the moon has no influence upon the weather.

**Ancient Sculpture.**—The demolition of a building attached to the old Abbey of St. Germain, at Auxerre, has led to the discovery of an old piece of sculpture, dated as far back as the eleventh century. The principal subject represents Daniel in the Lion's Den. On the left is a fragment of a statue, probably of David, as there is a harp with four strings lying by it. On the right is a representation of the parable of the rich man. This morceau, although mutilated, is curious, from the vigorous energy of its composition. A man is represented in a sitting posture, holding a large purse between his legs, and which he appears to be defending against two devils armed with pitchforks, who are strangling him with cords. This piece of sculpture has been deposited at the museum of the town.

**Lexicography.**—Some years ago a gentleman, after carefully examining a folio edition of Johnson's Dictionary, formed the following table of English words derived from other languages: Latin, 6,732; French, 4,321; Saxon, 1,665; Greek, 1,168; Dutch, 691; Italian, 211; German, 106; Welsh, 90; Danish, 75; Spanish, 46; Icelandic, 50; Swedish, 34; Gothic, 31; Hebrew, 16; Teutonic, 15; Arabic, 13; Irish, 6; Runic, 4; Flemish, 4; Erse, 4; Syriac, 3; Scottish, 3; Irish and Erse, 2; Turkish, 2; Irish and Scotch, 2; Portuguese, 1; Persian, 1; Frisic, 1; Persic, 1; uncertain, 1; total 15,734.

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