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THE PHYSIOLOGY AND HYGIENE OF THE SCHOOL-ROOM.

When we consider the many hours of a child's time that are passed in the school-room under the guidance of a teacher ; the peculiar tasks allotted for the three consecutive hours of each half-day for ten half-days in a week ; the school-room itself with its furnishings, in its best as well as in its worst estate ; the nature of the beings upon which the teacher is to operate ; the necessity which demands



ROTARY SWING. (See page 115.)

that a community of children assembled for purposes of instruction, be orderly, quiet, and attentive all the while ; —the natural energy and activity of all their physical functions constantly rebelling against restraint ; the expectation of those from whom the teacher derives his authority, that a certain amount of intellectual training be accomplished within a prescribed time ; and that " public opinion," which fashions our system of education, —we are led to exclaim, in behalf of both teacher and taught, " Who is sufficient for these things ?" And yet, at the appointed hour, thousands of little feet are wending their way to the school-houses that are scattered broadcast over the land, and the teacher's chair is always graced with its occupant : the former resorting thither in obedience to parental authority ; the latter, from choice. And being a matter of choice, the teacher is presumed to possess the requisite qualifi-

cations for rightly discharging all the duties of the office. Let us see.

That it is the duty of the parent to care for the *health* of the child, is conceded by all. Now health is a term of vast import : it signifies the right development and harmonious action of all the physical, mental, and moral powers of man. " Health is order ; and order is the law of good in undisturbed operation : it is the will of God as expressed in the perfect individual existence of other beings. As it respects a conscious and rational creature such as man, constituted in relation to the natural as well as to the spiritual world, health is the correct and pleasant performance of all the functions of life and mind as evinced in the body." The parent, in sending the child to school, transfers for the time much of his responsibility to the teacher. The teacher then stands "*in loco parentis*."

A knowledge of medical science is by no means the exclusive privilege of the physician. The lawyer requires an acquaintance with medical jurisprudence ; the pastor, in his counsels to the young, and consolations to the afflicted, needs to speak with authority concerning the laws of health and disease ; but in these professions, their spheres of action are chiefly among the mature in life. To the school teacher belongs, not only the " delightful task to rear the tender thought," but also to aid in the development of the physical powers of childhood. It should be an ever-present thought in the teacher's mind, that he is dealing with the *young* subject ; that growth and development characterize its whole being ; nothing is yet complete, all is in the formative stage ; and let him see to it, *that disease and deformity are neither engendered nor fostered in the school-room*. This suggests our topic : —a *knowledge of Physiology and Hygiene necessary in a school teacher*. To fortify our position, we must proceed to point out some of the sources of danger, and suggest the means of defence.

Should a child at school fall in a fainting fit, or be brought in from the play-ground severely injured, the teacher would not wait for orders, — the natural promptings of humanity would decide his duty to the sufferer. These startling occurrences, however, are comparatively rare, while not an hour of school time passes without demanding his vigilance, so insidiously and constantly is disease assailing the young constitution. Take, for instance, the subject of

VENTILATION.—All agree that a pure atmosphere is essen-

tial to health. Now, what is this atmosphere? It is a compound of two gases,—oxygen and nitrogen,—in the proportion of one part of the former to four parts of the latter. Although four-fifths of the atmosphere consist of nitrogen, we do not withdraw any of it by breathing. It is the oxygen alone that acts chemically on the blood in respiration. *All living bodies must breathe oxygen or die*; and all animal functions are maintained by the incessant play of affinities between the atmosphere and the organs.

How does the atmosphere of a school-room become vitiated? The body lives by converting dead organic matter into its own substance. This matter is removed from the influence of life as rapidly as it is brought under it. The removal is effected by the union of oxygen with the matter. The oxygen is received into the lungs in breathing; therefore *by every breath we so far vitiate the air around us*. At each breath we exhale eight or nine per cent. of carbonic acid gas:—the air is unfit for respiration if it contain more than three and a half per cent. of this gas. It is a well-known fact that to inhale the gas arising from burning charcoal in a close room, is often fatal. Charcoal is carbon, which, in the act of combustion, unites with the oxygen of the air, forming carbonic acid gas. Being heavier than common air, it falls to the floor, and, if generated in sufficient quantity, fills up the room, displacing the air above it, as does water poured into a vessel.

That we are constantly sending forth carbonic acid gas from the lungs, may be demonstrated by a very simple experiment. Inhale atmospheric air through the nostrils, and exhale by the mouth through a tube into a tumbler of limpid lime-water, which will soon become turbid like milk and water. Set it by for awhile, and when the water is again clear, a white precipitate will be observed at the bottom of the tumbler. Decant the water, and evaporate the sediment to dryness; the white powder is carbonate of lime, which may be tested by sulphuric acid.

Besides the carbonic acid gas and water emitted from the lungs, the skin also excretes oily matter, and salts of ammonia, soda, potassa, with acetic acid, carbonic acid, and water. Thus by the act of breathing and by emanations from the surface of the body, we are constantly vitiating the air around us; and in proportion to the vitiation of the atmosphere by the breath and exhalations from the skin, it becomes capable of receiving and transmitting the seeds of disease. It should be remembered in connection with this topic, that an ordinary lamp consumes as much oxygen while burning, as a man in health while breathing; and that, if there is a stove in the room to warm it, the fuel requires its share of oxygen for combustion, all of which must be drawn from the air of the room. Hence, we infer that the supply of fresh air must equal the consumption, or mischief will ensue.

The ventilation of a school-room should be so conducted as to secure a full supply of fresh, dry, and moderately warm air; always remembering that the chief bad airs are the heavy carbonic acid gas, and the light hydrogen gas; and, therefore, to allow of their escape, there should be an outlet near the floor, and another near the ceiling, in accordance with Emerson's mode of ventilating buildings.

Rooms that are not furnished with suitable warming and ventilating apparatus, must be ventilated nevertheless, and that by the best means available, or evil consequences are sure to follow to those who resort thither. Let there be two, or even three ten-minute recesses in each half day, when the doors and windows may be thrown open, and the children sent out to exercise and breathe in the free air.

In the management of windows for purposes of ventilation, many teachers evince a sad want of good judgment and discretion, forgetting that by opening a *wide* space at the top of a window, it allows two currents of air to pass,—an upper warm current flowing out, and a lower cold one rushing in and pouring down, like a waterfall, upon the devoted heads of the little victims who may be seated near. A space of one inch at the top of each window, and a little space at the bottom, will do the work much more effectually and safely. And in the matter of regulating the temperature of the room, the teacher's feelings should not be used for the thermometer, but it should be determined by a good Fahrenheit hung four feet from the floor, and remote from the source of heat. If 64° feels cold to the teacher, it must be owing to some morbid condition of the system. Never allow the wearing of overcoats, shawls, capes, tippets, and the like, in the school-room, when the thermometer indicates the right temperature. The reason is obvious.

CAUSES OF DEFORMITY.—Any remarkable deviation from the characteristic symmetry of the human form constitutes deformity, and is chiefly seated in the bones. The bones serve as the frame-work for the other parts of the body, surrounding and protecting the vital organs; and, in connection with the muscles, are the agents of locomotion. Bone is composed of two different substances,—*gelatine*, or animal matter, and *lime*, or earthy matter. The animal part predominates in early life; the two are about equal in middle life; and in old age there is more lime than gelatine, hence their liability to be broken. The bones increase in size and strength by use, and become weak by disuse. In infancy and childhood they are comparatively soft, more liable to bend than to break; they therefore require much more care

for their shape and growth than those of mature age. They are not fitted for labor and severe exercise; neither will they bear long-continued exertions or positions with impunity. "Just as the twig is bent, the tree inclines," is as true of the animal as of the plant; hence, in sitting, the child should either find rest for the entire length of the thigh bone, from hip to knee, upon the bench or chair, or the lower portion should be supported from the knees and legs by the feet resting easily on the floor. In order to secure this position without restraint, the seats for children at school should be of such height as to keep the thigh bone in a horizontal position. The seat being right, the writing-table or desk should be so adjusted as to allow the forearms to rest easily upon it without elevating the shoulders, or bending the chest. If the seat and desk are adapted to the occupant, the sitting postures of the child can be more easily controlled by the teacher. We are aware that there is an attempt at graduating the height of desks and chairs according to the ages of the children in the several grades of schools. This is good as far as it goes; but the stature of children not being uniform with the age, and children not being classified strictly according to either, but rather by their mental qualifications, it becomes necessary to provide the individual child with such a chair and desk as suits him exactly, no matter what his rank may be in the scale of intellectual acquirements.

The *muscles*, which are the organs of motion in the body, must also be used, that their size and strength may be adequate to the demand made upon them. Rest must follow exercise, at or before the sense of fatigue, for long continued tension of a muscle exhausts its power, enfeebles its action, and eventually destroys its contractility. This physiological fact will serve to show that those who impose constrained postures upon children, as means of punishment, such as long standing on a small base, on one or both feet; holding an object with the extended arm, or with the teeth, or upon the head; pinioning the limbs; or any mode whereby painful fatigue is induced, are, to say the least, guilty of wanton barbarity or unpardonable ignorance, and are out of place in the school room.

Besides guarding against deformity in the limbs, the teacher should be upon the alert to ward off a much more serious evil in another quarter,—*the spine and chest*. The spine, or back-bone, consists of twenty-four separate bones placed one on the other, with a substance resembling India-rubber between them. A canal extends through its entire length, containing the spinal marrow, which sends off in pairs the nerves of voluntary motion, and many of those nerves that give power to the lungs, the heart, and the stomach. These bones, in early life, are in part composed of an elastic substance, and are always of a porous texture. The peculiar organization of the spinal column renders it capable of much motion and very liable to deformity during the first twenty years of life. Its natural form is straight laterally, but curved backward in the chest and forward in the loins. The ribs and breast bone form the frame of the chest, a cavity which contains the heart and lungs. It is so contrived by the all-wise Architect, as to afford the requisite space for these vital organs freely to perform their functions.

When we consider the degree and nature of the service which this single long column, the spine, is called upon to perform,—that it supports the entire weight of the head, neck, and arms, and the principal part of the trunk; and at the same time gives lodgment to the spinal marrow, we may readily perceive that any causes, which affect the health and produce general debility, must operate powerfully on this part of the system. The spine, when weakened, gradually yields under its load, loses its natural curves, and acquires others; and these curves will be proportioned, in their degree and permanence, to the producing causes.

A distortion of the spine is necessarily accompanied by a *distortion of the trunk* of the body. That part of the column which supports the right arm is commonly the first to become affected, because of the elevation and action of the right arm in writing and drawing. It causes a bending towards the right shoulder, thus raising it higher than the left. This curvature to the right, in the upper portion of the spine, is accompanied, as a consequence, by a curvature to the left in the lower part, causing a projection of the left hip. Nor does the mischief stop here. As the ribs are connected with, and supported by, the spine, any movement of the latter must carry the former with it; hence, the ribs of the right side are pushed forward, causing a deformity in the forepart of the chest, and those of the left side are forced inwards or backwards. Thus this cavity, which was formed for the lodgment of the heart and lungs, and nicely adapted in its shape and dimensions to their necessities, is distorted and contracted; and, as a consequence of this encroachment upon the healthy action of these important organs, we need only mention—shortness of breath, palpitation of the heart, and the usual phenomena of dyspepsia, to indicate the duty of the teacher in this particular. He should be watchful of the postures which his pupils assume while seated at their studies, their attitudes when standing, and the ordinary carriage of the body in walking. He should repeatedly caution them to avoid all bad positions, while at work, such as bending the head, neck and

chest forward in a stooping posture; sliding off the front edge of the chair, so as to rest upon the lower part of the back, thus bending the whole spinal column into a semicircle. The delicate and feeble ones of the flock should be the objects of special care.

Every occupation requiring the joint use of the hands and eyes, should be so pursued as to prevent continued stooping. Frequent change of position is demanded in the school-room, and to this end, the exercises should be so timed and arranged as to call the children from their seats as often as every half hour, and in the primary school, every fifteen or twenty minutes. The practice of a system of calisthenics twice in the course of the school session, in addition to the regular out-door recess, will do a vast deal towards preventing the evils complained of, and driving off the drowsiness and restlessness which would otherwise ensue.

We would here interpose a word in behalf of the little sufferers in our primary schools; and, in this particular, we hold the teachers, in a large degree, blameless. We allude to the want of desks for the children. The reason assigned for this deficiency is, that children between four and nine years of age do not write. We see no objection to their being taught the use of the pencil at this early age; we know they can, and we think they ought to be; but we claim the introduction of desks in the primary school as a SANITARY measure. The class of evils to which we have alluded, begins in the primary school, when the bony frame is exceedingly pliable. There the child is subjected to far greater discomforts than in the higher school, being compelled to sit most of the time upon a bench or chair, without any means for resting its book except upon its lap, which "tired nature" is sure to do when the eye of the rigid disciplinarian, who prides herself on the uniform array of little statues, happens to be averted. In concluding these remarks, we would reiterate our injunction to primary school teachers no less than to others,—see to it, that disease and deformity are neither engendered nor fostered in the school-room. Keep your little troop moving. We abhor remarkably still primary schools, because they are unnatural. You, who are able to bear it, would think it harsh treatment, were you compelled to take the places of your pupils.

In what we have said, we do not feel that we have exhausted the subject. We have only seized upon some of its salient points, sufficient to show the teacher's responsibility in the matter. To meet this responsibility efficiently, implies a ready knowledge of Anatomy, Physiology, and Pathology, with the principles of Natural Philosophy and Chemistry, and a determination to carry it out.—*Mass. Teacher.*

SCHOOL ARCHITECTURE—(Continued.)

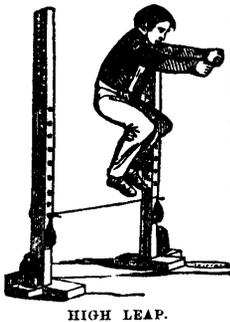
EXTERIOR OF THE SCHOOL-HOUSE.

GYMNASTICS AND CALISTHENICS.

MEANS OF EXERCISE.—In the country school sections, where the play-ground is extensive, and suitable for the use of bats, balls, hoops, stilt, jumping sticks, &c., which the pupils will themselves furnish in abundance, it will render any special provision in this respect less necessary. But in case the grounds are small, and in towns where greater variety of means is required, additional arrangements should be made for such physical exercise as may secure proper muscular development.

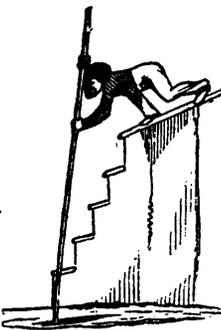
Amongst boys, running and leaping are favorite pastimes, and both are conducive to health. For running, no other preparation of the ground is needed than that there shall be space enough, and that the surface be sufficiently level to be safe.

Some kinds of leap require preparation. The long leap, along the surface of the ground, only needs a level space for the run, and ground not too hard for the leap itself. The high leap may be made a useful and safe exercise by means of a proper leaping cord or bar, so constructed as to be elevated in proportion to the increase of the youth's activity by practice, yet so arranged as to prevent the injury by striking the feet against the cord or bar.



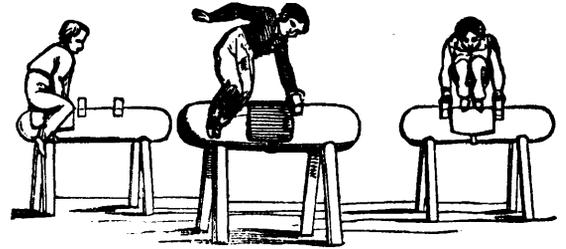
HIGH LEAP.

The pole leap brings the muscles of the hands and arms into play as well as those of the lower limbs; and if it be cautiously practised and gradually increased, will give a degree of confidence and activity to the performer, which may be valuable to him in the dangerous and trying positions of after life.



POLE LEAP.

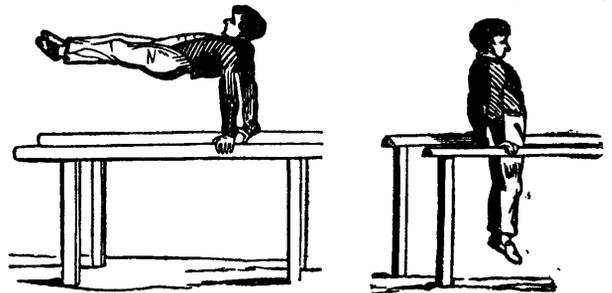
Vaulting is another kind of exercise which strengthens the muscles of both upper and lower limbs. The power to swing oneself over a



VAULTING.

fence too high for a leap, in times of danger or great haste, is desirable. Rapid and graceful mounting on horseback may also be thus taught. The necessary fixtures cost little and add to the variety of the play-ground.

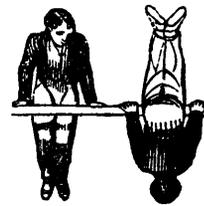
The parallel bars are admirable contrivances to exercise and strengthen the arms, and open and expand the chest. If of different heights and sizes, they may be used by pupils of all ages. They possess the advantage of being perfectly free from the possibility of



PARALLEL BARS.

PARALLEL BARS.

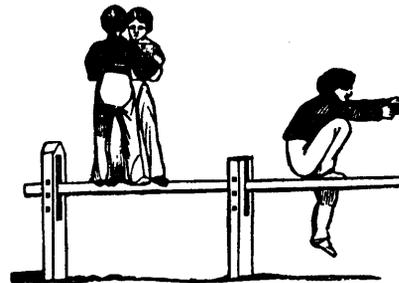
accident to the smallest boy who uses them; and should therefore be among the first means for exercise introduced upon the play-ground.



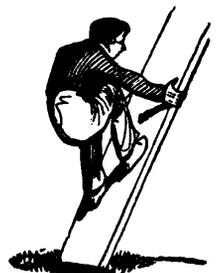
HORIZONTAL BAR.

The horizontal bar is for lads of more advanced age, and its use, besides strengthening the hands and arms, affords the opportunity of placing the body and limbs in a great variety of positions, and of thus strengthening many muscles not ordinarily called into action.

The balancing bar is so constructed as to admit of elevation from the ground in proportion to the pupils' confidence in himself and skill in using it. It is admirably fitted to give strength to the lower limbs, steadiness to the brain and self-possession to the mind. The constant practice of balancing the person with exact reference to the centre of gravity

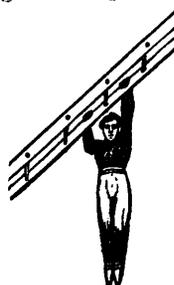


BALANCING BAR.



INCLINED BOARD.

must also have a beneficial and graceful effect on the figure and general deportment.



THE LADDER.

Climbing the ladder, the rope, and the inclined board, are all calculated to add strength to the limbs, activity and health to the body, and variety to the exercises of the play-ground. They can be provided for at slight expense, and will be found, in common with other similar arrangements, to increase love for school, by rendering it attractive.

No gymnastic apparatus combines greater variety of healthful and pleasant exercise than the rotary or flying swing. (See engraving on the first page.) It combines running, leaping,



THE ROPE.

and climbing, with the addition of engaging several in the same exercise at the same time. It also has the advantage, which few of the exercises which have been enumerated possess, of being equally adapted to females.

Though girls neither require the same robust exercise nor rough sports, to develop their frames and fit them for the duties of life, as boys, yet the system of education which omits or slightly provides for their physical training, is most radically defective. In addition to such of the apparatus already enumerated, and others proper for both sexes, those more peculiarly adapted to their wants should be provided. In this point of view, light dumb bells are best calculated, if properly used, to strengthen the arms and expand the chest.



DUMB-BELL.

The long back-board is also well calculated to expand the chest and give liveness and grace to all the movements of the arms and bust.

The variety of attitude into which its use can be made to throw the person, cannot but be beneficial. The triangle is a short bar of wood, attached by a light rope at each end, to one secured at some point of considerable height. This is so arranged, by means of a pulley, as to be adaptable to the size of the person using it, and is a simple contrivance which may be used in a shed or room, in bad weather, and made to answer most of the uses of the rotary swing.



TRIANGLE.



BACKBOARD.

In suggesting these or similar arrangements and apparatus for the amusement and physical training of youth of both sexes, of course it is not designed to assert that all or even any of them are indispensable to every School. It is admitted that children, in good health, will have exercise of some kind, and, if not restrained, will generally manage to secure a sufficiency to promote growth and vigor of body; but it is also known that, if left to themselves, they will generally neglect the studies proper for their intellectual culture. Hence the latter, with that of their moral nature, becomes the object of primary importance and obligation. But then, it is also believed that the means of physical exercise may also be vastly improved in nature and result, and at the same time be made a strong attracting influence in favor of the School and of learning. In this view of it, physical training rises in importance to a point only secondary to that of the culture of the heart and the intellect; and it may, therefore, not be overlooked without detriment to the best interests of the child and of society.

If it do not suit the convenience or the means of the District, to expend money to provide for the physical training of its youth, by means of proper gymnastic arrangements, much may be effected by the teacher and the pupils. Timber is cheap, and there will be found in every School of the ordinary size, several scholars of sufficient age, mechanical turn, and, if properly influenced, of willingness to labour for the common good. A Saturday or two devoted to this purpose, will readily produce one or more of the simpler kind of gymnastic apparatus, and the agreeable and beneficial effects of these will soon introduce others. In this way a full set may in time be obtained.

As to where the exercises shall take place in rainy weather, has been a question. Some have proposed to fit up and use the basement for the purpose; some have thought that the School-house should be constructed with two stories, the upper one of which might be used for play; and others have proposed separate covered buildings or sheds. Should such a use be made of the second story of the school building, the walls of the first story must be made thick and firmly bound together. They need not extend, however, higher than the first story, as the second should be open, but surrounded by a balustrade and pillars to support the roof. The floor ought to be laid with thick plank and deafened. More costly arrangements might be described, but these have both simplicity and cheapness to recommend them.

Should the price of ground in particular localities render it advisable to occupy a room in the school building, for gymnastic or calisthenic exercises, or to erect a building purposely, in which case alone such expedients should be resorted to as the sole means of exercise, the utmost care must be taken to ensure a full supply of pure air. No consideration ought to be permitted to interfere with this indispensable requisite.

KEEPING THE GROUNDS IN ORDER.—The Trustees in whom, in this Province, is vested the exclusive control of the school property of

the District, should first project and erect school-buildings and arrange school-grounds; but after they are in order, they should be intrusted to the Teacher's care, and he should be made responsible for their abuse. It is considered his duty to keep a clean and tidy school-room, and he should be held equally responsible for the condition of the yard and its enclosure. It is true that the destructive propensities of children uncontrolled, often lead them to do mischief—to throw down the fences—to cut and bark the trees—to cover doors and furniture with uncouth and obscene figures; but it is emphatically the teacher's duty to prevent these acts, and no better proof need be desired of a Teacher's want of qualifications than his inability to do so. This propensity on the part of the young, to cut, scratch, deface and destroy school property, should be corrected. They do not thus misuse the property of their parents, and it is but mismanagement at school, that induces them to act differently there. Teachers may create such a spirit among their pupils, as not only to prevent them from doing harm to the school property, but to render them willing and ready to assist in protecting it from the trespasses of others. They can be taught to love neatness and order, to guard affectionately the trees and flowers about the school-grounds, and to take pride in their protection and preservation.

It would be a great convenience to have a spring of water in the yard, or a pump, from which cool, fresh water could be brought at all times; and this should be of such easy access that all might undergo those frequent ablutions so necessary to cleanliness, and upon which depend, to so great an extent, the good looks of school boys and school girls.

IMPROVING EXISTING SCHOOL-GROUNDS: These grounds can be levelled and smoothed, and good enclosures be provided. They can be enlarged by the purchase of adjoining grounds; and in view of the probable increased future requirement of the Schools in this respect and the increasing value of land, good economy would dictate that there should be as little delay as possible in so doing. Shade trees can be planted in all school-grounds, in which they do not at present exist. It will take them years to grow, and in the far future the little folks who shall then enjoy the comfort of their shade, will look back and thank those to whom they may be so much indebted.

GYMNASTICS AS A BRANCH OF EDUCATION.

A LECTURE DELIVERED BEFORE THE UNITED ASSOCIATION OF SCHOOL-MASTERS ON THE 25TH OCTOBER, BY MR. G. REINICKE.

Man is a twofold being, consisting of a wonderful union of a physical and mental nature into an harmonious whole. From the time when it was acknowledged that our mental development was the true aim of our earthly existence, the physical development has too often been treated with too little importance. This neglect attained its highest pitch in the supposition, that the body was but a clog to the soul, and that in proportion as the body was neglected, the mind became improved. Locke was the first who opposed this view; he was followed by Rousseau. Though the view of the latter had too much of materialism in it, still he saw that the body is the habitation of the soul, and that bodily exercises must be an important part of education. And how bitter is the result of such neglect of the body, the Temple of God? What a fine example the old Greeks give us, who in noble cultivation outshone the whole world, so beautifully uniting the mental with the physical development. It is very right to free the soul from the bonds of the body, but not through carelessness and degeneracy, but through strengthening the same. And the human body is calculated for vigorous activity: only by much use and continued practice can the body attain and preserve the right standard of power.

All bodily exercises are not Gymnastics, according to the view which we take. We do not understand by that term irregular exercises of children and uncivilised tribes, national games, or public exhibitions of bodily strength and agility. Gymnastics, as a science, consists of an harmonious and methodical development of the body by exercises, considered both in relation to the bodily and intellectual faculties.

We will first consider the influence of such gymnastics upon the body.

The first and most striking result is the development of muscular power. We all know that the muscles, without exercise, not only become powerless, but change both in form and substance, which is shown by reduction in size, and by softness and laxity. Continued inactivity converts them into a fatty substance; whereas, through much exercise the muscle grows larger and stronger, and even in a state of inaction attains a certain degree of firmness, which the unexercised muscle scarcely has during its contraction. The quality of the muscles is influenced by the reproduction and appropriation of new organic substances in the place of those, which through the process of existence are constantly consumed. They are the ground work of existence. Consequently the greater the vital power of the body, the greater will be the reproduction and circulation of the animal fluids. The comparatively great amount of nerves and blood-vessels in the muscles is a proof of their qualification for a quick reproductive power, as well as of a high degree of vital activity. Hence the rapid growth of their substance by continued vigorous activity. A journey on foot of a few days even increases the size of the muscles of the lower ex-

tremities, particularly of the gastrocnemius; only a few hours fencing will be productive of a similar effect upon the upper extremities, particularly of the biceps. The absolute increase of the muscular substance is the cause of the change, as the greater flow of blood continually supplies fresh matter and completely replaces those parts, which have been consumed and carried away by the veins. As everything has its conditions and bounds, so also must the muscular development be circumscribed. Physical endurance, which is more than the result of quiet strength, can only be attained by long continued exercise.

A great number of gymnastic exercises only consist of certain movements, which have for their object the increase and maintenance of flexibility, particularly of the joints of the hand, the shoulder, the spine, the hips, the knees, and the feet. On the flexibility of these joints *agility* depends. It exists naturally without exception in children and sickly persons. With the former consequently gymnastics does not require to produce, only to preserve. It is seldom found with such who have become strong by hard labour. This inflexibility of joints is caused by the ligaments and sinews, which through insufficient use have been suffered to lose their elasticity. Great flexibility often prevents serious results from falls or collision by the quick evasion of the danger. It is scarcely credible what agility can do to prevent the fracture of a limb. Experience teaches us daily that awkwardness is too often the cause of accidents. Muscular power and agility combined give the body firmness and decision in the use of the limbs, both producing a firm and noble bearing. It is a great error to develop one arm more than the other, which was censured as early as Plato. It is therefore one of the objects of gymnastics, that the left and right side shall receive equal power and skill. It will be seen from this that the end of gymnastics is not simply coarse strength.

Above all things the many arm movements as well as the slow and deep breathing produce a healthy expansion and development of the chest. This is of course followed by a freer and more perfect development and action of the organs therein contained, the heart and particularly the lungs. Every one who is acquainted with the process of respiration will easily see how important the latter is for the whole of the vital process. By the usual movements, walking, &c., we do not take a full breath; the chest consequently does not attain its full expansion and the air inhaled only partly fills the lungs. Those parts of the lungs not brought into action remain collapsed, lose their spongy elasticity, and in course of time their capability of being penetrated by the air. The blood, which flows copiously to the lungs, becomes more or less stagnant, the lungs are inflamed, and at length consumption is the necessary result of this partial inactivity.

All dissectors agree that perfect lungs are very rare.

Gymnastics is a preventative of *corpulence*, which is always a sign of weakness. We find such in females, after repeated bleeding, in wine and spirit drinkers, from weak digestion, diseases of the liver, from want of exercise, from too great proportion of nutritive food, old age, and in sanguine and phlegmatic temperaments. Corpulence is certainly a defect, something abnormal, unhealthy, and extremely burthensome. It is most unnatural in youth. With mathematical certainty powerful muscular exercises will prevent this evil. How different the body which has been practised in gymnastic exercises will prevent this evil. How different the body which has been practised in gymnastics from the one which has not. Certainly the body loses through gymnastics all female beauty and softness; but it gains a true manly beauty, on which every muscle in action is distinctly marked, as in the Laocoon and Apollo.

Further, Gymnastics has great influence on the skin. The contrast between a man who has grown up in active and laborious bodily exercise, and a youth or man educated in enervating habits shows this plainly enough. The former is adorned with a brownish firm skin, his marked features are signs of manhood and firmness; the skin of the latter is, on the contrary, white, transparent, the feminine forms of the face and body give everywhere the impression of weakness. Manly beauty makes not only a certain solidity of the skin desirable, it is also the surest means of preventing the external influences of heat, cold and rapid changes of the same. The skin perspires more freely by stronger motion, the danger of catching cold is therefore greater. The evil increases more and more the greater the careful protection from the air, and the unfortunate sufferer becomes at last so sensitive to all external influences, that he feels in a terrible manner every change of the atmosphere, like a living weather glass. Hufeland relates, that he has known learned men whose skin had become so painfully sensitive, that they could tell with great certainty in their study, when in clear weather a cloud passed their zenith. And the sensibility of the skin is only an evidence of the general morbid irritability of the nervous system.

History shows us on every page, that culture only makes people happy to a certain point, and that beyond this they sink faster or slower towards their destruction." In the bloom of prosperity," says Von Konen, "the seed of destruction is generated with the satisfaction of the desires, the refinement increases, the frivolity of wit and the epicurean taste for sensual pleasures destroys moral dignity, energy of mind, separates individuals from society, which finds its destruction in egotism, in bodily, and still more in mental weakness, and in intractable degeneracy. The more pressing is the necessity of restoring the only means which is able to reproduce the smouldering power of all civilised nations. And through filling up the gap in pedagogical science we would impart to the young a stability which would withstand many of the poisoned darts of luxury."

The only communicator between soul and body is the nervous system, the heart of which may be called the brain. The latter is consequently that part of the body which suffers more directly from the evil results of

excessive mental exertion. Every one has doubtless felt the truth, as he will have experienced after close and continued thinking a feeling of exhaustion and slight oppression in the head. Here the common law in all organic nature is applicable, that, where the irritation is greater, the circulation of the blood is stronger and the secretion more profuse. Heat in the head, tendency to inflammation, suppuration and obduration of the brain, hydrocephalus, epilepsy, catalepsy, somnolency, and sleeplessness are the sufferings which afflict the learned. If we consider the far greater sensibility of the child and youth, and the natural tendency of the fluids to the brain, it is easy to understand how premature development of the mind often destroys health and life. How often we hear parents say after the loss of a child, "it was an angel too good, too clever for this life," without thinking that they had allowed themselves from its natural quickness of comprehension to overtax its mental powers, and that they are the indirect cause of its death.

Excessive mental exertion, particularly in youth, often cripples mental power. Montaigne says "How many men have I seen become stupid through too great a thirst for knowledge. Not seldom are those cases where youths, who were the pride and the pleasure of their parents and tutors in their 10th or 15th year; in their 20th year are surpassed by others of their own age, and they often become quite unfit for thinking. We must not from the above draw the conclusion that the cultivation of the intellect is to be restrained as being detrimental to the health and vigour of a nation, and that it does not deserve the greatest care and attention. There is perhaps no greater or more inexcusable crime against the welfare and happiness of our fellow beings and those committed to our care, than with despotic power and inhuman barbarity to mark out the bounds, thus far and no farther. "It is true, that the poor systematically oppressed and kept in ignorance," says Wieland, "grow gradually to stupidity, and the sensual inclinations, which grow with their years, not having learned to obey any law, give rise to a number of prejudices and errors, which smother the power of discriminating between good and evil, that prerogative of human nature. They never will become matured to true beings."

We should exercise and educate the mind in every way and to the full extent of its power, but only at the right time, and in the right degree. In gymnastics we find the only regulator. It prevents, by strengthening the muscles, the irritability of the nerves, which is almost without exception combined with weakness of the muscles. Gymnastics searches out the ordinary external causes of the illness, as heat, cold, and the sudden changes of the same, rain, want of sleep and food, and teaches us to bear them with caution and safety. I have often noticed in my pedestrian tours, that even delicate boys, wet with rain to the skin, notwithstanding their wet clothes, have gone cheerfully on their way, have gone at night to their often simple couch, and risen early in the morning well and brisk.

Man acquires the highest degree of his physical perfection only when a higher degree of power and resistance is combined with the sensibility and mobility of the nervous system. Without having a great physiognomic knowledge, we perceive at the first glance such a constitution. "What a difference," says Niemeyer, "between children always tied to their mother's apron string, protected from every breath of air, warned against every bold exertion of their bodily strength as a great danger or even sin, and those who from their infancy developed their limbs by all kinds of exercise, and by that means defy every real danger or learn to make it harmless. The great danger to which the unpractised, awkward, anxiously guarded boy is exposed, and the privation of all the irreparable advantages, which produce strength and agility of the body, plainly show, how unpardonable it is so much to neglect this part of bodily education."

It is true, that the improvement of the health will produce a normal motion and mixture of the blood, but the more violent motions of the body have influenced on the rest of the body, and sedentary habits produce a disproportion between the venous and arterial blood. The veins, even of the external skin will rarely be found expanded, while blood is wanting in the arteries. If one considers, that the arterial blood only is of service for support, it is easy to understand, how too great a quantity of venous blood deranges the whole system. This disproportion is mostly the cause of the legion of diseases of the bowels, by which the nervous system is most developed. If we farther consider that the conversion of the venous blood into arterial, is caused through the process of respiration, and if we remember, that the most perceptible result of a continued and vigorous exertion of the body is the increased rapidity in the circulation of the blood and action of the lungs, it will be easily understood, that for them bodily exercise is the only comfort, and that through it in a few hours a refreshing and invigorating feeling of health is produced. Pressing is therefore the appeal to every one, to prevent this unhealthy state by regularly continued exercise of the body. We should certainly never find in one who had been trained from his youth in gymnastics, even frequent and difficult work of mind, producing hypochondria, hemorrhoids, liver-complaints, and the like, the true cross of our learned men. Addison says, "Gymnastics open the chest, exercises the limbs, and gives a man all the pleasure of boxing without the blows. I could wish, that several learned men would lay out that time which they employ in controversies and disputes about nothing in this method of fighting with their own shadows. It might conduce very much to evaporate the spleen which makes them uneasy to the public as well as to themselves."

Gymnastics is also of beneficial influence to the *digestion*, it keeps the balance between nourishment and consumption; thus the necessity of rest and recreation will be greater, the sleep sounder, more refreshing, and therefore shorter.

Our senses, from being the communications between the mind and the external world, form the basis of all mental development and improvement,

By the loss of one of the senses, all ideas and conceptions which are conveyed through the same are wanting. We can, for instance, give the blind no idea of the beauty of a picture or landscape, and the deaf no delight in music. This already shows how unnatural it is, and what a want of judgment, to torture the children exclusively with dogmas and exercises of the memory. There is but one way of teaching a child, that is, to take care for the variety, strictness, and clearness of the perceptions. All questions put by the child show the desire to bring his own feeling to the right clearness. Formation of notions and combination naturally follow, and it is certainly better to bring the child to an abstract truth through his own reflection than to make it at length intelligible to the memory through long sermons. It is therefore, that the more frequent sojourn of the tutor with the children in the open air, where he can call attention to surrounding objects, is of such unspeakable value. The bodily organs of the senses can be refined and improved by practice. Gymnastics is here able to do something. The uninterrupted application to indoor study is in a great measure an important reason for short-sightedness; therefore it is easy to see, that through continued employment of the eyes on near objects the power of discerning distant objects is destroyed. And we see with sorrow that the weakness of the eyes prevalent with the learned begins in the years of youth, or even boyhood. The interruption of the application to near objects is already a great benefit to gymnastics, but it also by many exercises practises the eyes. For instance, in calculating the distances for jumping, through many vaulting exercises and particularly in fencing, where the eye not only follows the quickest movements of the foil or sword, and with readiness perceives a momentary exposure, but even reads in the eyes of the opponent the intended thrusts and blows. The ear will be practised in many gymnastic games, for instance, in blind man's buff, where the eyes being covered, the ears are the only guides. The refinement of the taste and the smell, senses which can be more easily dispensed with, can certainly not be much aided by gymnastics, luxury does in this case more than we wish. The development of the sense of touch, lastly, must be left more to domestic education. The mechanical part of music, drawing and so on, are here the best tutors. It may however be mentioned that gymnastics does not deserve the reproach that it destroys the delicacy of the hand movements. As a proof of this may be stated, that Gymnastic Clubs of the Continent always count among their members painters, sculptors, musicians, etc., many of whom are good gymnasts, as well as clever artists.

Be mindful therefore, to preserve to your children a sound body. Bodily weakness and mental depression are otherwise the product which you send into the world, instead of heathy children, both in mind and body, who salute life with joy and happiness. Do you attend to the health of body at the same time, that you are educating the mind, the latter will comprehend more acutely, more powerfully, and quicker, and will attain the greatest power and energy in youth and manhood.

A few words of Cleveland may close the consideration now gymnastics act on the body. He says in his excellent essay on the classical education of boys, "First of all, I would recommend those exercises which strengthen the frame systematically, as gymnastics of every kind. I am aware that these are in use among us, but they are rarely insisted on as a duty, children are left to their inclination, and this is a country where the excessive heat in summer and cold in winter induce the want of energy and inactivity. I wish that an hour a day might be set apart, and rigidly kept for these exercises. The result of such an education is truly astonishing. . . . It is melancholy indeed in our institutions for learning, especially our colleges, to see so many puny looking young men; hollow cheeks, round shoulders, and bending body are characteristics of our students, and premature old age, or consumption, carries off too many of our most gifted men."

It will, perhaps, at first sight appear curious, that gymnastics secondly, would have a *beneficial influence on the mind*. There exists between mind and body a communion. We find everywhere the proof how the body works on the mind, and the mind on the body; the development and the healthy state of the body must consequently facilitate the development of the mind. "It is not a soul, not a body which we shall educate, it is a man of whom we must not make two," says Montaigne. And do we not know how an exercised mind influences involuntarily the muscles of the body, the circulation of the blood, the organs of respiration, in short, the whole physical structure? Do we not find, that vexation and anger affect the liver and upset the stomach, and that shame brings the blood to the face? Sorrow and affliction find vent in tears; the lungs, the windpipe, the diaphragm are affected by sighing, crying, and sobbing; enthusiasm and animation contract the muscles, and quicken the circulation of the blood, whereas on the contrary, terror and fear convulse, and produce involuntary ejaculation.

Gymnastics is, in the first place, a powerful antidote to inattention or absence of mind, which is a clog to all moral and intellectual advancement. Every movement and every exercise requires the full attention of the pupil. He cannot execute a leap, a movement, or turn of the body, a game or contest, without giving it his full attention. He must be perfect master of every movement, estimate distances, calculate the mode and speed in which each limb must be moved, or he cannot succeed. Niemeyer is right when he says, "that the gymnast shows his perfectness when he can with the greatest coolness use every power of the body for some definitely given object, and in making use of every advantage, execute apparent impossibilities through gradually won dexterity. As long as he does not give full attention to what he is doing, he is in danger." What force and vivacity there is in the face of a physically well-trained youth, all his movements,

his whole face expresses so plainly the activity of the mind, and its attention to all that is passing.

Again, gymnastics is the finest school for *courage*. Courage has many sources. Habit, and the repeated occurrence of a danger produces it, another sort owes its existence to animation, enthusiasm, and intoxication. These, however, cannot be the object of education, the one from its being restricted to certain actions, the other from its bursting like a bubble, and doing more harm than good. Real courage faces danger with coolness, consciousness, and in knowledge of its strength, either from a sense of duty, or because the danger cannot be evaded. Gymnastics produces this courage by strengthening the muscles, through its certain decision and quickness of the movements. It is one of the greatest pleasures of the gymnast, to feel himself in difficulties, which he is able to overcome by consciousness of his strength and agility. It seldom requires a foreign impulse to urge him on; on the contrary, it is one of the most difficult and important tasks of the teacher, to keep his pupils within bounds. Gymnastics is another and rich source of courage, as it teaches the endurance of hardship, pain, and fatigue; every exertion seems to bring fresh strength. How very deficient on this point is our education, how difficult is it for the teacher to overcome the fear, and misdirected love of the parents. The child has a desire to make gymnastic exercises of his own, such as running, jumping; but these might be dangerous. "Walk very slowly, or you may fall and kill yourself, and then we shall have no little Fred left," are the admonishing words of the anxious mother. The little prisoner sees the other children running about, jumping and playing, he wants to join them, but he is told they are unruly and naughty children, they will mislead the little son, knock him down, and teach him bad manners. The desire for freedom becomes stronger and stronger, he becomes untractable, the mother can hardly bear it any longer: when at length a haven of rest is opened—the school; and in a short time the wild, untractable boy has become docile and quiet, and not seldom surly, indolent, and dreamy; and thus his life passes without the enjoyment of the most beautiful years, those of childhood, in mirth and innocence, the remembrance of which remains and enlivens the eye of the youth and man.

Gutsamuth strikingly describes such an education with the following words: "At home, anxious injunctions repeated a thousand times, and in the school great circumspection, great attention, avoidance of danger, even where none is to be found. Everywhere a rigid and strict depression of natural courage from childhood upwards. Taming! taming! is the watch-word!"

Farther, gymnastics is a means of promoting courage by expanding the chest and giving vigor to the lungs. Too much study makes the student weakly and deadens the vital powers, and it is with difficulty that the mind retains vigor, when the body has lost it. Study exhausts the animal spirits, and is an antidote to courage. We find with weakening courage a visible expansion of the chest, while on the contrary, if it is contracted, it is unable to participate in the same degree of emotion.

The desire for bodily exercise is so strong in healthy boys that any effort to suppress it only tends to heighten the same; it is, consequently, only reasonable that we should provide for its regular development. The correct estimate of their strength is to be obtained by boys through repeated exercise under proper direction. Experience has shown me that none are more foolhardy than novices in gymnastics; whereas the elder pupils will never over-estimate their strength.

Again, gymnastics is conducive to *hilarity and buoyancy of spirits*. What is more pleasing in youth, than that cheerfulness which is the warrant of so many good qualities? The straight jacket of schools often deadens these expressions of bodily and mental health; but gymnastics, from its healthy influence on the body, and with its quick and dexterous movements, accelerates the same. As Tristram Shandy says, "So much more exercise, so much the more health and happiness; but idleness and inactivity, certain death." Sometimes the mere sight of the cheerful exercises of the gymnastic ground cheers up and diverts the spectator to such a degree, that he feels all the vivacity of youth, and he will not seldom throw off his coat, join in with the rest, and work away as if his life depended on it.

That gymnastics *prepares the mind for scientific study*, may easily be conceived from what has gone before. What can be a more efficient preparation for the reception of knowledge than a healthy condition of the body and mind? The healthy state in which the body is kept avoids the retrograde movements often produced by illness. Hippocrates says, "The strength of the mind increases with that of the body. When the body is diseased, the thoughts are distracted."

Sterne says, "Oh, blissful health, thou art worth more than all the money and treasures in the world; through thee the mind expands and puts in motion all its powers to receive instruction and love virtue; he who possesses you has little more to wish for; but he who is unfortunate enough to lack you, lacks all with you."

The most striking side of gymnastic education is the development and exercise of *activity*. It is true, that the characterless also have good intentions to improvement and to good actions, but they disappear like *ignes fatui*, after having flickered for a short time.

The social and simple nature of gymnastics, and the *simplicity of dress required*, do much to destroy that conceit and self-esteem which the imaginary advantages of money, birth, and standing, are apt to give.

Gymnastics is, in many respects, a fruitful source of *friendship*, in the form of a self-denying, open disposition,—for the mere friendship of words is not worth much. The physically healthy man thinks less of self; in him the feeling of public utility and self-abnegation is most developed, one finds, consequently, in the working, strong, lower classes, a lively par-

ticipation in the good or bad fortune of others, much more than in enervated members of the upper classes.

A well-arranged gymnastic ground gives, further, the means and opportunity of teaching a proper degree of obedience, for it is absolutely necessary, that when a number are working together, they must obey the one in command, and this is readily done, as they are all aware that nothing can be done if they do not submit to the rules and regulations.

Papers on Practical Education.

TREATMENT OF DULL CHILDREN.

The teacher of a large school had a little girl under her care who was exceedingly backward in all her lessons. She was at the bottom of the class, and seemed to care but little about what passed in it. During the school hour, singing was sometimes employed as a relaxation, and noticing that this girl had a very clear, sweet voice, her teacher said to her, "Jane you have a good voice, and you may lead in the singing." She brightened up, and from that time her mind seemed more active. Her lessons were attended to, and she made steady progress. One day, as the teacher was going home, she overtook Jane and one of her schoolfellows.

"Well, Jane," she said, "you are getting on very well at school; how is it that you do so much better now than you did at the beginning of the half-year?"

"I do not know why it is," replied Jane.

"I know what she told me the other day," said her companion.

"And what was that?" asked the teacher.

"Why she said she was encouraged."

Yes, there was the secret—she was encouraged. She felt she was not dull in everything. She had learned self-respect, and thus she was encouraged to self-improvements.

Take the hint, dear fellow-teacher, and try to reach the intellect through the heart. Endeavour to draw out the dormant faculties of your children by discriminating culture and well-timed praise. Give them credit whenever you can, and allure them on with hopeful words. Many a dull-minded child has been made irretrievably stupid by constant fault-finding or ungenerous sarcasm. And, on the other hand, how often has a genial smile or an approving remark wakened into new life some slow-learning scholar! Little Charley was of this description. He was the dull boy of his school. All the rest either laughed at him or pitied him. Even his master sometimes taunted him with his deficiencies. He became sullen and indifferent, and took no pains to get on. One day a gentleman, who was visiting the school, looked over some boys who were making their first attempt to write. There was a general burst of amusement at poor Charley's efforts. He colored but was silent.

"Never mind, my lad," said the gentleman, cheerfully, "don't be discouraged; just go on and do your best, and you'll be a brave writer some day. I recollect when I first began to write being quite as awkward as you are; but I persevered, and now look here." He took a pen and wrote his name on a piece of paper, in fine legible characters. "See what I can do now," he added,

Many years afterwards that gentleman met Charley again. He had turned out one of the most celebrated men of his day, and he expressed his firm conviction that he owed his success in life, under God's blessing, to the encouraging speech made by the school visitant.

Who can tell whether there is not a "Charley" or a "Jane" in your class? Some flowers are longer in unfolding than others; some mines are difficult to work, but they yield a rich recompense in the end! Childhood is not always an earnest of manhood. We cannot confidently predict the future from the present. So hope on, hope ever, and hope the best. It is seed-time and planting-time now. You must wait till the harvest time—and it may be a late one—before you determine what your ingathering will prove. How far it may exceed your languid and unworthy expectations it is impossible for us to say. But this we do know, that those who have sown in tears have frequently reaped in joy.

Besides, dear friend, allowing that your children are dull, that they remain dull, and they ever will be dull, just recollect what is the object, the grand object of all Sunday-school teaching. It is the salvation of the soul. And is this dependent upon quick intellects and talented minds? Does it require great mental energy to grasp the "faithful saying," which is "worthy of all acceptance," and to "lay hold on eternal life?" Feeble as the understandings of your children may be, they are strong enough for the realisation of a Saviour's incomparable love, and dulled as their perceptions oftentimes appear to you, they may already have learned to know the only true God, and Jesus Christ whom he hath sent.

A little girl, who was considered by the neighbours to be "not quite sharp," went to a Sunday-school. Her father was an idle, drunken man, and her mother was of a violent hasty temper, so that the poor child met with but little care and comfort in her home, and

was not only neglected, but often harshly treated. Ill-usage, combined with a naturally weak intellect, had given a vacant, half-frightened look to the girl's face. She did not like being spoken to, and gave very unintelligible answers when she attempted to reply. Why she came, or what good she got by coming, was a mystery to her teacher. She did not appear to enter into the meaning of anything that was said, nor did she manifest the slightest kind of interest in the school proceedings. Yet she was in her place as regularly—indeed more so—as any of the others. At length she was absent, and upon inquiry it was ascertained that she was ill, and probably dying. Her teacher went immediately to see her, and asked her two or three questions, with the view of finding out whether she was conscious of her danger, and, to her surprise and delight, the child calmly expressed her assurance of soon going to be for ever with the Saviour whom she loved, and showed a simple but thorough acquaintance with the one only way of salvation. Hath not "God chosen the foolish things of the world to confound the wise, and the weak things of the world to confound the things which are mighty?"

Then "judge nothing before the time," dear reader, and "be not weary in well-doing; for in due season ye shall reap, if ye faint not." Strive to lead your children to Christ, and he will gather them in his arms, and carry them in his bosom, and will say approvingly to you, "Inasmuch as ye have done it unto one of the least of these, my little ones, ye have done it unto me!"—*The Sunday Teachers' Treasury.*

SCHOOL DISCIPLINE.

School discipline includes so many things, that the attempt to bring them all under notice in the short space of one paper must fail. I therefore shall content myself with mentioning a few points which appear to me the most important.

I. I assume school discipline to mean the whole routine of School business, excepting, probably, the actual giving of lessons; though discipline would, to some extent, influence that portion of school work. For it would lead the teacher to give his lessons always in a quiet, occasionally in a gentle, or in an animated, in a grave, or in a lively tone and manner, as the subject might require; and in every case in such a manner as to fully indicate the teacher's interest in the subject. Let the children see that the teacher is interested in the lesson, and interest will be awakened in them. We have all had the opportunity of noticing that when we have flagged our class has also flagged.

II. This leads me to suggest, secondly, that it is well not to enter on a lesson when, from some cause, we feel incompetent to summon up and command the attention and interest which the subject requires. And herein I refer especially to religious teaching. It would seem unwise to enter on a Scripture lesson with thoughts distracted and mind wearied.

But here let me be clearly understood. A depression of spirit, or a distraction of mind, which would impair ability to execute duty, is of course to be determinedly combated. Duty clearly demands that this effort should be made—honestly and strenuously made—and if so made, it will generally be followed by success.

But if the ability be obviously and absolutely unequal to the task; if the mental grief be, for the moment, irrepressible, and the consequent physical debility irremediable, it would seem better to defer the task to some other period. I am aware that this would dislocate, and to some extent impair the symmetry of the "Time Table." But this would seem a less evil than the engaging in a task demanding energy and attention, when energy could not be commanded, or attention given.

In this suggestion I have respect rather to the children's interest than to the teacher's convenience. And the point which I chiefly seek to establish in the above suggestion is, that the teacher should be in a state of mind and body to secure the attention of the taught.

Manifest listlessness in the teacher must, I fear, produce listlessness and inattention in the scholars.

I do not dwell on justice and impartiality as ingredients in school discipline. Absolutely and immutably right in themselves, no teacher could reject them from his system, without great self-reproach, and most deserved reproach from others. But I would venture to urge that pains should be taken to make it manifest to the children that partiality and favouritism are unpractised and unknown within the walls of the school.

Children are quick in discovering and in resenting injustice, in a degree scarcely credible by those who are not intimately acquainted with the workings of their minds, and the impulses of their hearts. By us present the fact is well known; as is also the fact, that if children are permitted to believe themselves the victims of injustice, discipline, however perfect in other respects, must be altogether powerless for good. Unwilling to occupy time in insisting on a point on which I am persuaded there is perfect unanimity of opinion, I pass on to a subject which, if it do not command the same immediate

concurrence, is yet, in my humble judgment, second only to it in importance in school discipline—I mean

III. *Sympathy*. This, in my opinion, is an important means of discipline, for as the child sees that the teacher does or does not, sympathise with him in his griefs and joys, so that child will either love and respect the teacher as a friend, or will look upon him merely as a master.

In this respect, I mean the exercise of sympathy, I feel inclined to consider that the female teachers have rather more power than the masters. It cannot be questioned, that, in our own childhood, the one who was most readily chosen our confidante, to whom we most readily confided our griefs and trials, was our mother, or in some cases an elder sister. And is it not so with children in school? Kind and gentle as the master may be, yet I think children will be less free to tell their mind and thoughts to him, than to the mistress. If this be so, then we must feel that it is doubly binding upon us, the female teachers, to be the unobserved observers of the cloud or shadow which may show itself upon the countenances of our children. The griefs of children are real and intense. Happily, they are not lasting; and a gentle word or a kind act, will frequently prove sufficient to turn the current of their thoughts, and thus make them forget their griefs. Should this plan fail, then it would seem well to take the child aside, and say you had noticed there was something wrong; and by encouraging words and manner, lead it to tell the facts. If the case can be met by soothing or encouraging words, you will soon see the face brighten and the shadow pass away. If advice were needed, you could give it, and perhaps, in after years the child would remember how you had comforted him by kindness, how you had advised him for his good, and he would bless you for so doing. I cannot but think that we should sometime get on better if we encouraged the children to think of us more as friends to whom they might confide their trials, griefs and thoughts. This would not only lead to the good which I have mentioned, but by giving us a deeper insight into the hearts and characters of children, it would help us very much in the management of them, and thus prove an important feature of discipline.

IV. *Rewards and Punishments*. I am almost afraid to say anything on a subject about which opinions so widely differ. Yet, in reference to rewards, I must venture to say that those who would withhold all reward from children, seem to forget how much they themselves are influenced by the hope of reward. Could or would men and women go on toiling, struggling, and fighting with the evil within and without, if they were not stimulated and supported by the promised reward to those who "endure to the end"? Is it not, then, too much to expect that children should persevere in good without reward as a stimulant to exertion? As to punishments, I know by experience, that some children can be best managed by words, and by gentleness; but I am compelled to say that I consider those children rather the exception than the rule. I have tried the plan in several cases, and occasionally with some success. In other cases talking and gentleness have seemed, for a while, to produce the desired effect. The child has appeared convinced of its fault; and has manifested signs of shame and sorrow, but the effect has worn away, and the offence has been repeated. In those cases I have found that corporal punishment has done more lasting good than all my talking and reasoning. Indeed I feel convinced that a child will hold a teacher in contempt whose only discipline is talking, and, on the other hand will feel respect for the teacher who, when need arises, will not hesitate to substitute corporal punishment. I need not, I am sure, suggest that such punishment, to be really beneficial to the character of the child, must be administered without any appearance of anger or passion. Children are greatly inclined to misconstrue the teacher's motive in punishing them. If they are permitted to regard the punishment as a vent to the teacher's temper, they will look upon it as a mere act of tyranny. But if they have reason to believe that the infliction of punishment on them causes pain and sorrow to the teacher, that it is administered as an act of necessity and duty, they will of themselves arrive at the conclusion that the punishment must have been merited, and will learn to respect the hand which dealt it.

V. *Silence*. I regard this as a very important item of discipline. In visiting schools one's ear is sometimes offended by constant talking, both by teachers and children, and by ceaseless efforts in the former to check it in the latter. This is quite inconsistent with efficient management. It seems to me that the only way by which we can obtain silence in the scholars, is by maintaining silence ourselves. If the teacher is loud and constantly talking, the effect is to encourage loud and constant talking in the children. On the contrary, if the teacher himself would maintain silence, giving both lessons and orders in a quiet, subdued tone, the children would necessarily be quiet, in order to hear what the teacher said. In proportion as he elevates his voice, they will take license to elevate theirs; because in the din they will hope to escape detection; and, for converse reasons, in proportion as he subdues his voice they must

and will subdue theirs. I feel persuaded that, in time, a quiet teacher will make a quiet school.

VI. *Punctual attendance*, by which I mean attendance at the hour prescribed. On this point I have little information to offer—rather do I seek assistance from the more experienced teachers present.

It is certain that, without punctuality, nothing goes right; and if we would establish good discipline, we must enforce punctuality. How this is to be effected, I have, as yet failed to discover. I have tried kind words, suspension, gentle punishments, and even severe punishments, without success. The punishment I find most effectual is making the late comer stand idle with his arms folded for a certain time, varying according to the case. Children will be doing something—work, play, or mischief, and I have found that the above plan acts as a more severe punishment than I had anticipated. The child is not only quite idle but quite still and motionless; and he has the opportunity of seeing others at work and happy and of contrasting his own idle and unhappy condition with theirs. This discipline also operates incidentally upon the parents. They do not like their children to come to school for nothing. When I first employed this punishment the parents were full of complaints, thinking their children harshly and unjustly dealt with. Their complaints were met and removed by a clear explanation of the principle on which that system of punishment was based.

My hopes were raised when I found the parents coming to me with an interest in their children's doings at school. It gave me the opportunity also of inviting their co-operation in carrying out this principle: and I have found that they have been thereby aroused to a more vigilant watchfulness in sending their children off in good time, and in seeing that they do not linger by the way.

Much more might be said upon this very important subject of school discipline, but I have purposely confined myself to the few points which have occurred to my mind as the most important. I am aware that the good to be obtained to-day will not come from my paper, but from the observations of others, to which it may give rise; and in submitting this paper to you, I beg for every indulgent allowance by our kind friends, the clergy, and by my respected fellow teachers.

April 4th, 1857.

A. S.

[This paper was written by the Mistress of an English National School, and was read and discussed at a Church School Teachers' Association in Gloucestershire.]—*English Journal of Education*.

EFFECTIVE PRIMARY INSTRUCTION.

BY THE REV. R. DAWES, M.A., DEAN OF HEREFORD.

The great question that every conscientious teacher must be constantly proposing to himself is, whether his teaching is really *effective*. Every earnest man sets before himself an *object*, and rests not satisfied until that object is attained. What is the object the christian teacher has in view in his wearisome daily toil? Is it to produce a few sharp boys who may shine at an examination? Is it even to make all his boys clever and merely intelligent? No one engaged in the "delightful work, to teach the young idea how to shoot" can watch the bud-dings of intelligence, or see the full development of the blossom, and the ripened fruit, without being cheered in his work. But he cannot forget that his vocation is not to produce clever boys: but to send out into the world men, who shall be good citizens, and consistent christians; men who in their worldly calling shall be ornaments to society, and in the Church of Christ shall "adorn the doctrine of God our Saviour."

It behoves us to look well to it, that the kind of teaching we are giving in our schools will effect these ends. Every day spent by a child in school should be a day of preparation for future life: we should look not so much at the amount of instruction conveyed, or the quantity of knowledge imparted to a child during the time he is at school, as at the question whether he is acquiring such a taste for knowledge as will make him thirst for more, and lead him to desire to carry on his education in after life.

This seems to be the idea which Dean Dawes has had in his mind while writing on primary education. He discusses the various means employed for carrying on the education of our scholars after their days in the elementary school are over, and among these mentions "night schools, reading-rooms, and libraries and all such institutions and associations of institutions as may be most likely to afford the means of education to those whose schooling has been neglected:" but remarks that, "the efficient primary school is the foundation on which we must rest."

Our author has attained so great a reputation as one of the foremost of our educationists, that we need not say that his remarks in this, as in all his works, are judicious and most valuable. We have to deal here with that part of his work which treats of *primary* instruction. One important matter he insists on, is the thorough teaching of whatever is introduced into our school routine. No greater evil, we are convinced, exists in our schools than the constant attempt made, es-

pecially by young and badly trained teachers, to embrace in their *curriculum* a vast variety of subjects. The result of this system generally being to confuse the mind of the child, and to prevent his ever knowing anything really well. Let a child be taught any one or two subjects thoroughly, so that he may feel an interest in them, and he can scarcely fail to desire to increase his knowledge of those subjects; and will then be led to seek to know more of the other subjects that may present themselves to him in the course of his reading. Few of our readers will, we are sure, dissent from the following.

"Few subjects well taught, rather than many ill taught, ought to be the maxim of the schoolmaster. I know objections are sometimes made that too much is attempted in many of our schools, and this may be true where what is attempted is ill-taught; but I am convinced the present generation will have to lament the little which can be done under existing difficulties, rather than the over-much; and I can see no objection myself to useful secular instruction to any extent, bearing upon their occupations, having a tendency to make them skilled labourers in their respective trades, and calculated to advance their social well-being."

Much has been said of late years respecting the kind and amount of training a man should have to fit him for the office of schoolmaster; and not a few have been found, who have thought that the rising race were being too highly trained. We have always thought, that to train men too highly for the important work of the elementary teacher was an impossibility; and we are still of this opinion. Perfectly possible, nay, very easy is it for young men to be injudiciously trained: and we fear that much of what is called training in some of our colleges, is a mere system of cramming, calculated only to send out a set of conceited young men, filled with the idea that they know more than any one else, because they happen to be versed in the elements of algebra, and read in a few common place books of science. These by their vain-glorious display of their ignorant puppyism, cause persons who only look at the surface to say that the schoolmaster is being made too learned. This, however, only arises from their knowledge being superficial and scanty: let them drink deeply of the well of knowledge, and the draught will invigorate them and fit them for a due performance of their work. On this subject we have the following well-timed remarks:

"How important, then, is the office of school teacher, and that they who undertake it should possess the requisite qualifications for the faithful discharge of the duties of it. I know it is said that many of us aim at too high a standard in our schoolmasters and schoolmistresses as regards mental acquirements. There cannot, however, be a greater fallacy than to suppose that the schoolmaster, whose knowledge is limited to the bare rudiments of those subjects which he is absolutely required to teach, can be as efficient a teacher as the one who has some knowledge of a more extended kind—for instance, of geometry and the elements of physical science—and who knows how to apply this knowledge to the things of every-day life. He cannot illustrate what he is teaching, or interest children in the same way in which the well-qualified teacher can.

"We continually see observations, in speeches at public meetings, intended to ridicule this. They speak of boys able to give the grammar of a sentence, that they can do propositions in Euclid; but that they cannot do other things of a homely kind, which they will enumerate.

"I saw a report, a short time ago, of a meeting at Bridgenorth, where the speaker said, speaking of Quatt school, that he had no doubt many of them could solve a problem in Euclid, and travel over the Asses' Bridge, yet he doubted 'if any of them could tell at what angle a furrow should be laid to expose the greatest surface to the action of the harrows or the ameliorating effects of the winter frost.

"This is no easy problem, although it is one which admits of an exact solution; yet the boy who had learned something of geometry would be much more likely to think of it when he was ploughing than the boy who had not—would be more likely to reflect on the various data which would lead to a correct judgment, the aspect of the field he was ploughing, whether it turns towards the sun or from it; and yet the speaker was intending to ridicule the knowledge which would enable the ploughboy to do the very thing he wished him to do.

"Observations of this kind give false impressions of what is even attempted in our schools; and I much doubt whether there are ten boys in the county of Shropshire—even in all the four counties of Salop, Hereford, Worcester, and Gloucester—at the class of schools to which allusion was made, who could solve a problem in Euclid, or travel over the Asses' Bridge, which many of them were supposed by the speaker to be able to do."

Again, we venture to give a quotation respecting the standard of attainment in our schools.

"But without aiming at any very high standard of acquirement, if our school system is to be in any degree effective, we should, I think, all agree that even under existing circumstances, and making allowance for the difficulties which at present beset us, a fair proportion—say two-thirds or three-fourths—of the children ought, at the ages of ten or eleven, when they leave school and their labour becomes mar-

ketable, to have a knowledge of Scripture, be able to read simple narratives with tolerable ease and fluency, so as to interest a hearer; to have such a knowledge of the common rules of arithmetic, and of weights and measures, as to be able to apply it to every-day life; to write a legible hand, and to spell tolerably well in writing from dictation; and to have some knowledge of the geography of their own country.

"Education below this standard is of little or no use in after life, and soon after leaving school is soon forgotten. It is a common complaint that many of our school children, in a few years after they have left, are scarcely able to read. This may arise from the want of a night-school; and one thing which often leads to it is the ignorance of the parents at home, who take little or no interest in their children: but the primary cause is, the imperfect instruction they have had at school.

"But simple as the above test is, few of our schools will come out well if fairly tried by it; and I advise the teachers present to try their schools once or twice in the quarter by this standard:—Collect the children according to age; those from nine to eleven, those from eleven and upwards. Examine them carefully, and you will find the proportion who can bear this test much lower than it ought to be; and when you apply this rule to all the children in a parish belonging to the labouring classes, those who are up to the standard will not exceed, if they equal, one-third of the whole."

Much more of a highly interesting nature is to be found in this little work, especially as to the way in which the secular teaching in a school may be brought to bear upon the teaching of religion; and in another part, on the importance at the present time of preparing the popular mind, through our elementary schools, for the introduction of the decimal coinage. But our space forbids us to make further quotations; and we conclude by commending to our readers the work which has led to those remarks, and at the same time, earnestly inviting them to a serious consideration of the subject "EFFECTIVE PRIMARY INSTRUCTION."—*The English School and the Teacher.*

EARL OF CARLISLE'S ADVICE TO TEACHERS.

Lord Carlisle was present yesterday week, at the half-yearly examination of teachers in training at the National Schools in Marlborough-street, Dublin. At the close of the proceedings, his Excellency addressed the assembled teachers in a brief but graceful speech, in the course of which he offered this practical suggestion:—"I am happy to see among you who now sit before me, as well as among those who are gathered behind me, members of different religious persuasions. Now, I trust I should be the very last person to call upon you to undervalue the importance of your different religious convictions; but I think you will yourselves have been able to ascertain during your sojourn here how much good and worth there may be among the members of different persuasions; and you will have derived no better lesson here if in your future lives you inculcate those results of your own happy experience upon those who will be placed under your charge. Inculcate upon them the love of learning, for that is your especial mission as schoolmasters; inculcate upon them the love of God, for that is your foremost duty as Christian men; and, as a branch, a main branch of that love, and the measure of your own experience here, inculcate upon them the love of one another, and may the blessing of the Almighty be always with you."

Miscellaneous.

FIRST GRIEF.

[The following poem was written by James Hedderwick, a Scottish poet but little known in this country. Who, that ever lost a brother or sister, could read these lines without a falter in the voice and a tear in the eye?]

They tell me, first and early love
Outlives all after-dreams:
But the memory of a first great grief
To me more lasting seems.

The grief that marks our dawning youth,
To memory ever clings;
And o'er the path of future years
A lengthened shadow flings.

Oh! oft my mind recalls the hour,
When to my father's home,
Death came, an uninvited guest,
From his dwelling in the tomb.

I had not seen his face before,—
I shuddered at the sight;
And I shudder yet to think upon
The anguish of that night!

A youthful brow and ruddy cheek
Became all cold and wan;
An eye grew dim in which the light
Of radiant fancy shone.

Cold was the cheek, and cold the brow;
The eye was fixed and dim;
And one there mourned a brother dead,
Who would have died for him!

I know not if 'twas summer then,
I know not if 'twas spring;
But if the birds sang in the trees,
I did not hear them sing;

If flowers came forth to deck the earth,
Their bloom I did not see;—
I looked upon one withered flower,
And none else bloomed for me!

A sad and silent time it was
Within that house of woe;
All eyes were dim and overcast,
And every voice was low;

And from each cheek, at intervals,
The blood appeared to start,
As if recalled in sudden haste
To aid the sinking heart!

Softly we trod, as if afraid
To mar the sleeper's sleep;
And stole last looks of his sad face,
For memory to keep.

With him the agony was o'er,
And now the pain was ours;
As thoughts of his sweet childhood rose,
Like odour from dead flowers!

And when at last he was borne afar
From the world's weary strife,
How oft, in thought, did we again
Live o'er his little life.

His every look, his every word,—
His very voice's tone.—
Came back to us like things whose worth
Is only prized when gone!

That grief has passed with years away,
And joy has been my lot;
But the one is long remembered,
And the other soon forgot!

The gayest hours trip lightly by,
And leave the faintest trace;—
But the deep, deep track, that sorrow wears,
No time can e'er efface!

FAMILY PRAYER.—Happy the domestic circle united by this bond of sympathy and love! Happy those who, to use a quaint and homely phrase, thus "hem the mornings and evenings of the household, and so prevent them from ravelling out."

POWER OF MATERNAL LOVE.

The following narrative is well authenticated. A correspondent of the London *Morning Chronicle* heard the statement from a woman who had been sent to Sydney under a sentence of transportation. We have seldom met with a more impressive illustration of the power of love over hardships.

This woman was, when in England, under the care of Mrs. Fry, a woman whose name is endeared to every benevolent mind. In speaking of that lady, she said, "She had a remarkable way about her—a sort of speaking that you could hardly help listening to, whether you would or not; for she was not only good, but downright clever. She had a way of speaking to one of us alone, and I was anxious to shuffle this lecture; but when she was taking leave of us, she just called me on one side, saying she would like to speak a few words to me; 'so,' says I to myself, 'caught at last!' Well, she came close to me, and, looking at me in a very solemn sort of a way, she laid her hands upon my shoulders, and gave me a pressure that told she felt for me; her thumbs were set firm and hard upon my shoulders, and yet her fingers seemed to have a feeling of kindness for me. But it was no lecture she gave me; all she said was, 'Let not thine eyes covet.' No other words passed her lips; but then her voice was solemn and awful—kind as a mother's, yet just like a judge. Well, when I got

to the colony, I went on right enough for a time; but one day I was looking into a work-box belonging to my mistress, and the gold thimble tempted me. It was on my finger and in my pocket in an instant; and just as I was going to shut down the box lid—as sure as I am telling you—I felt Mrs. Fry's thumbs on my shoulders; the gentle, pleading touch of her fingers. I looked about me—threw down the thimble—and trembled with terror to find that I was alone in the room. Careless, insolent, and bad enough, I became often in the factory. Well, do you see, at night we used to amuse each other by telling our tricks. Among us we had one uncommon bright girl—a first-rate mimic, and she used to make us roar with laughter. Well, this fun had been going on for many weeks; she had gone through the whole of her characters, from the governor to the turnkey; so she went back to Newgate, and came to Mrs. Fry, to the very life; but it would not do—we did not seem to enjoy it—there was no fun for us. So then she began about the ships leaving, and our mothers' crying, and begging us to turn over a new leaf; and then, in a mimicking, jesting sport, she sobbed and bade us good-bye. Well, how it happened I know not, but, one after the other, we began to cry; and, 'Stay, stay, not my mother,' said one: 'Let Mrs. Fry alone; stay, stay.' Well, she did stop; but tears were shed the whole of that night. Everything had been tried with me. Good people had sought in vain to convince me of my evil ways; but that girl's ridicule of my mother I could not stand. Her grief was brought home to me; and not to me alone, but to many. I do believe that night was a great blessing to many. I was so unhappy, that the next day I tried to get out of sight to pray; and, when I got a hiding-place, I found three girls on their knees. We comforted each other, and then we spoke of our mothers. Mine was dead. She left this world believing me past hope; but the picture of her grief made me earnest in search of that peace which endureth for ever."

A BEAUTIFUL CLASSICAL ALLUSION.

Mr. Winthrop, of Massachusetts, in his recent address at the Musical Festival, in Boston, alludes to the contemplated submarine telegraph, in these words: "On Christmas eve, in the year 1814, the Treaty of Peace between England and the United States, was signed at Ghent—a worthy commemoration of that blessed event when the Herald Angels were heard singing to the shepherds on the plains of Bethlehem, 'Peace on earth, good will toward men.' But that treaty was not known on this side of the ocean for six or seven weeks after its date. The great battle of New Orleans, as you well know, was fought at least two weeks after that treaty of peace was signed. Our modern system of railroads and steamers and telegraphs might have saved that effusion of fraternal blood; might have deprived individual heroes, might have deprived our country and its history, of all the glory which belonged to that really great victory. If that gigantic ocean harp, which is at this moment in process of being strung, whose deep diapason is destined to produce a more magical music on the sea than mythology or modern fable ever ascribed to siren, mermaid, or Arion; if the mysterious gamut of that profound submarine chord had been in successful operation then, as we hope it soon will be, between St. John's and Valentin Bay, those cotton-bag ramparts at New Orleans might never have been celebrated in history; while of those who so gallantly defended them many would not have been laid so low, and some perhaps would hardly have risen so high."

THE ROYAL FAMILY.

Her Majesty Queen Victoria is the happy mother of five girls and four boys, all healthy and robust children. The immediate Royal family of Great Britain consists of the following:
Alexandrina Victoria, the Queen, born May 24, 1819; married February 10, 1840, to
Francis Albert Augustus Charles Emanuel, the Prince Consort, born August 27, 1819.

THE ROYAL CHILDREN.

1. Victoria Adelaide Mary Louisa, Princess Royal, born Nov. 21, 1840
2. Albert Edward, Prince of Wales, born Nov. 9, 1841.
3. Princess Alice Maud Mary, born April 25, 1843.
4. Prince Alfred Ernest Albert, born August 6, 1844.
5. Princess Helena Augusta Victoria, born May 25, 1846.
6. Princess Louisa Carolina Alberta, born March 18, 1848.
7. Prince Arthur William Patrick Albert, born May 1, 1850.
8. Prince Leopold George Duncan Albert, born April 7, 1853.
9. Princess Beatrice Feodore Mary, born April 14th, 1857.

LONGITUDE OF QUEBEC AND CHICAGO.

To the Editor of the *Morning Chronicle*.

SIR.—It may not be uninteresting to your readers to have an account of the recent experiments which have been carried on at this Observatory, in connection with some of the principal places in Canada, as well as with the city of Chicago, in determining their longitude.

But, in order that I may be understood by all classes, it will be requisite that I should make a few preliminary remarks, and also that I should avoid all technicalities. For instance, instead of saying that the earth turns on its axis in 24 sidereal hours, I shall remark that the sun goes round the world in 24 hours, and it will be necessary to take a few other liberties with the known laws of the universe, that the subject may be treated in a popular manner, but which will in no way prevent the most learned from fully understanding the scientific mode that was pursued.

First, then, to explain how it is that longitude may either be reckoned in hours and minutes, or in degrees and minutes.

As the sun goes round the world in 24 hours it passes over 360 degrees in that time, or over 15 degrees in one hour, and as it is 12 o'clock when the sun is south or north of a place, it is evident that all places that are north or south of each other keep the same time, and all their clocks should shew the same second; and for the same reason all those places that are not north and south of each other have different times, and their corresponding clocks should not agree.

Now, when the sun is south of Greenwich, it is noon by the sundial, and in one hour after that the sun will have passed over 15 degrees, and it will be noon at all those places that are north and south of each other in 15 degrees west longitude, or what is the same thing, in all those places that are situated in one hour of longitude.

If, for instance, when the sun was due south of a place, one of the inhabitants could call out loud enough to be heard at Greenwich, and ask how long it was since the sun was due south of them, and that he was told that the sun had passed just two hours, then, as we know that the sun travels at the rate of 15 degrees an hour, we know that the longitude of that place is 30° degrees west, or two hours. From this, it is clearly seen that the difference of longitude is nothing more than the difference of time between two places, and that it may be either counted in time or in degrees.

Although there may be no great harm in a city being ten minutes out of its longitude, yet, if a ship were out of her reckoning to that amount, the result would very likely prove fatal. The sailor of former times might have called never so loud and still not have been heard at Greenwich. It is true that he could easily have ascertained the correct time of his ship by measuring the height of the sun, but getting the time of Greenwich was quite beyond his reach. Astronomy comes to the aid of the present generation, and by its means a clock has been discovered in the heavens that keeps exact Greenwich time, and which can be seen from all parts of the world. The duty of the hands of this clock is performed by the moon, and the dial is no other than the starry heavens, but instead of the hands going round the face of the clock in 12 hours, the moon takes 28 days to go round the heavens.

To use this clock, when the mariner wants to know the time at Greenwich, he has only to measure how far the moon is from a bright star, and then consult his almanac, and he sees that when the moon is so far from that star, it is half-past 11 P. M. at Greenwich, and as it is only 9 o'clock P. M. at the ship, he finds his longitude to be 2h. 30m. or 37° 30' west of Greenwich.

If then this clock could be easily read, nothing more could be wanted; but, unfortunately, the hands of this clock are so far from the face, that is to say, the moon is so far from the stars, that unless you are standing opposite the hand you do not see the correct minute it is over. For instance, if you are standing much to the right of a clock, and the hands are some distance from the face, you will make the clock a minute or so slow. In a similar manner the position of the observer with respect to the moon alters her apparent distance from the star. The difficulty of reading this clock, has however, led to the improvement of watches to that degree that a chronometer keeping Greenwich time may now be obtained and taken on board, when at any time the difference between ship and Greenwich time may be known, or in other words the longitude of the ship.

Although a chronometer, with care, is sufficient for the navigation of a ship, still, when determining the relative position of places on the earth, a chronometer cannot be trusted to keep exact time, particularly when taken long journeys by land, and something more accurate is wanting; and this want is fully supplied by the electric telegraph.

In the recent determination of the longitude of the city of Chicago, the following arrangement was made:—Col. Graham, of the Topographical Engineers, U.S.A., consented to take charge of the Observatories at Chicago, and the Telegraph Company gave free use of their line, and lent every assistance in their power, in the most obliging manner.

On the night of 15th May, at 10 p. m., the end of the telegraph wire was in the Observatory, an operator, Mr. Henderson, was in attendance, and all was ready to send signals.

Quebec began by sending a dot at the commencement of each minute, and this was repeated seven times. Chicago listened to these dots, and to the tick of a chronometer that was keeping mean solar time, or the correct time of Chicago. And, as Quebec was sending dots from a sidereal clock, which gains one second on a solar chronom-

eter in six minutes, Chicago listened for a coincident beat, and noted the second, minute, and hour at which the Quebec dot coincided with the tick of their chronometer. After this Chicago sent dots from their chronometer, and Quebec listened for a coincident tick and dot, the exact time of which was noted, and these signals were repeated until we were satisfied that we had the exact difference of time between Quebec and Chicago. All that remained now to be done was to turn Chicago mean solar time into sidereal time, and, as a precaution against error, to turn Quebec sidereal time into mean solar time.

The difference between the mean time and the difference between the sidereal time should agree, and this difference is the difference of longitude between Quebec and Chicago. A remarkable thing is, that although three lines were joined together, by making the end of one line meet the end of the next line, only two-tenths of a second were occupied by the signal going along the line.

DIFFERENCE OF TIME BETWEEN QUEBEC AND CHICAGO.

	H.	M.	S.
By first signal from Quebec.....	1	5	41 44
By second signal from do	1	5	41 44
Mean	1	5	41 44
By first signal from Chicago	1	5	41 64
By second do do	1	5	41 55
Mean	1	5	41 60
Mean of both.....	1	5	41 52
Longitude of Quebec.....	4	44	48 49
Longitude of Chicago	5	50	30 01

E. D. ASHE, Director.

Observatory, Quebec, June 10th, 1857.

DEATH OF MR. DOUGLAS JERROLD.

The intelligence conveyed by the above heading will probably take the whole literary public of England completely by surprise. But few days ago Mr. Douglas Jerrold was a prominent figure in London life. An assembly of 'wits' would hardly have been deemed complete without his presence, and his last *bon mot* was one of those items of news that everybody was glad to hear. To the special world in which he chiefly existed it is scarcely necessary to say that his illness was of short duration. On the night of Sunday, June 7th, he took leave of several of his intimate friends, and shortly after the noon of Tuesday his earthly career had terminated.

Mr. Douglas Jerrold was in a great measure what may be styled a "self-educated" man, and the celebrity he attained with every class of his countrymen that is capable of appreciating intellectual worth may be cited among the many instances that show how distinct is the path to fame from any of those beaten tracks of instructions that time and usage have prescribed. He was born in London on the 3rd of January, 1803, and to the fact that his father was manager of the Sheerness Theatre may be attributed that predilection for the stage which forms a leading characteristic of the greater portion of his life. However, his earliest expressed passion, fostered no doubt by the scene which Sheerness presented during the height of the war for a maritime life, and he obtained a midshipman's appointment through the good offices of Captain Austen, brother of Miss Austen the novelist. With the war ended his nautical career, and on quitting the service he was apprenticed to a printer in London. His leisure hours were now devoted to self-instruction, Shakespeare being his chief author. An essay on the opera of Der Freischütz which he dropped into the editorial box of a newspaper on which he was employed as a compositor, is the reported beginning of his literary labor. The copy was handed over to him to put in type, and shortly afterwards appeared an editorial notice soliciting other contributions from the unknown correspondent.

The sharpness of Mr. Jerrold's satire has caused many persons to attribute to him a character of misanthropic ill-nature; but never was a more egregious mistake committed. The large light blue eye of Douglas Jerrold beamed nothing but benevolence, and to this expression the feeling of his heart fully responded. Like wits, he loved his joke, and if any opportunity for uttering a repartee presented itself he was not the man to let firelock escape his grasp. Hence, some unfortunate personage who obtruded his egotism or his pedantry might chance to get an unlucky *hit* if Douglas Jerrold was in company, and as the weapon was of first rate quality, the mark of the wound might remain unobliterated for years. But to suppose that Douglas Jerrold ever deliberately intended to inflict pain proves a total ignorance of his large and philanthropic nature. Wrong and oppression he hated in the abstract, but he had a friendly grasp for all individuals, even among his adversaries.

The reading public which knows celebrated men in black and white only, has lost a writer who for epigrammatic brilliancy has never been excelled in our language. But far deeper has been the loss of the circle of friends who delighted to spend whole evenings in catching the stream of wit as it flowed unimpeded from Jerrold's lips, and acquired for themselves a reflected glory by reading "Jerrold's last." The 'wits' of London have lost their acknowledged chief.

Mr. Douglas Jerrold died at Kilburn Priory in the arms of his eldest son, and retained his intellect till within a few minutes of his death.

THE BIBLE.

(From the Boston Anglo-Saxon.)

A nation would, indeed, be truly blessed, if it were governed by no other laws than those of this blessed book; it is so complete a system that nothing can be added to it, or taken from it; it contains everything needful to be known or done; it affords a copy for a king, and a rule for a subject; it gives instruction and counsel to the senate, authority and direction for a magistrate; it cautions a witness, requires an impartial verdict of a jury, and furnishes the judge with his sentence. It sets the husband as lord of the household, and the wife as mistress of the table—tells *him* how to rule, and *her* how to manage. It entails honor to parents, and enjoins obedience to children. It prescribes and limits the sway of the sovereign, the rule of the ruler, and the authority of the master; commands the subjects to honor, and the servants to obey; and promises the blessing and protection of the Almighty, to all that walk by its rules. It gives directions for weddings, and for burials. It promises food and raiment, and limits the use of both. It points out a faithful and eternal guardian to the departing husband and father,—tells him with whom to leave his fatherless children, and in whom his widow is to trust,—and promises a father to the former, and husband to the latter. It teaches a man how to set his house in order, and how to make his will; it appoints a dowry for his wife, and entails the right of the first-born, and shows how the younger branches shall be left. It defends the right of all—and reveals vengeance to every defaulter, over-reacher, and oppressor. It is the *first* book,—the *best* book,—and the *oldest* book in the world. It contains the choicest matter,—gives the best instruction; affords the greatest pleasure and satisfaction ever was enjoyed. It contains the best laws, and the most profound mysteries that ever were penned; it brings the best tidings, and affords the best of comfort, to the inquiring and disconsolate. It exhibits life and immortality from everlasting, and shows the way to glory. It is a brief recital of all that is past, and a certain prediction of all that is to come. It settles all matter in debate, resolves all doubts, and eases the mind and conscience of all their scruples. It reveals the only living and true God, and shows the way to him; and sets aside all other gods, and describes the vanity of them, and of all that trust in such: in short, it is a book of laws, to show right and wrong; a book of wisdom, that condemns all folly, and makes the foolish wise; a book of truth, that detects all lies and confutes all errors; and a book of life, that shows the way from everlasting death. It is the most compendious book in the world—the most authentic, and the most entertaining history that ever was published. It contains the most ancient antiquities, strange events, wonderful occurrences, heroic deeds, unparalleled wars; it describes the celestial, terrestrial, and infernal worlds, and the origin of the angelic myriads, human tribes and devilish legions. It will instruct the accomplished mechanic, and the most profound artist. It teaches the best rhetorician, and exercises every power of the most skillful arithmetician; puzzles the wisest anatomist, and exercises the nicest critic. It corrects the vain philosopher, and confutes the unwise astronomer. It exposes the subtle sophist, and makes diviners mad. It is a complete code of laws—a perfect body of divinity—an unequalled narrative—a book of lives—a book of travels, and a book of voyages. It is the best covenant that ever was agreed on—the best deed that ever was sealed—the best evidence that ever was produced—the best will that ever was made, and the best testament that ever was sealed—the best evidence that ever was produced—the best will that ever was signed. To understand it, is to be wise indeed; to be ignorant of it, is to be destitute of wisdom. It is the king's best copy, the magistrate's best rule, the housewife's best guide, the servant's best directory, and the young man's best companion; it is the schoolboy's spelling-book, and the learned man's master-piece. It contains a choice grammar for a novice, and a profound mystery for a sage. It is the ignorant man's dictionary, and the wise man's directory. It affords knowledge of witty inventions for the humorous, and dark sayings for the grave; and it is its own interpreter. It encourages the wise, the warrior, the swift, and the overcomer; and promises an eternal reward to the excellent, the conqueror, the winner, and the prevalent. And that which crowns all, is, that the Author is without partiality, and without hypocrisy, "*In whom is no variableness or shadow of turning.*"

Wordsworth, in one of his beautiful sonnets on the translation of the Scripture, says:

"But, to outweigh all harm, the sacred Book,
In dusty sequestration wrapt too long,
Assumes the accents of our native tongue;
And he who guides the plough or wields the crook,
With understanding spirit now may look
Upon her records, listen to her song,
And sift her laws—much wondering that the wrong
Which faith has suffered, heaven could calmly brook.
Transcendant boon!—noblest that earthly king
Ever bestowed to equalize and bless,
Under the weight of mortal wretchedness."

SIR JAMSETJEE JEJEEBHoy, BARONET.

In granting the title and rank of Baronet to Sir Jamsetjee Jejeebhoy, her Majesty has done more than confer a distinction on a man who eminently deserves it, for he is distinguished already by his own excellent qualities as well as his remarkable successes; her Majesty also bestows a boon on the native races, who will feel that they share the honor of the British recognition; and at the same time gives the highest sanction to a brilliant example of personal worth, of public spirit, and, using the word in its widest and best sense, of loyalty. The public have a vague sense of St. Jamsetjee's claims to distinction, but the sense is only vague. Jamsetjee Jejeebhoy was born at Bombay, in 1783. His parents came to that place from Nowsaree, a large village about twenty miles from Surat, inhabited by Parsees. He lost his parents before he was sixteen years old, but his future father in law, for he had been betrothed in the Oriental fashion from infancy, placed him in the way of keeping accounts; he could already write and read the commercial dialect of Bombay, and subsequently he acquired at school a slight knowledge of English. These were the elements of his "education," and he possessed as his fortune about £12 sterling. He soon afterwards began trading on his own resources, and had already acquired so much good will and confidence that he was able to borrow £200. For some time he traded with China, being himself his own supercargo; and his career was diversified by a capture at sea and an imprisonment at the Cape of Good Hope, under the Dutch. In 1807, he settled at Bombay, and since that time his wealth has been continually increasing. With his wealth has increased his reputation for probity, liberality, and charity. The contribution of £700 from his family to the monument of the Duke of Wellington, perhaps, brought him first under the notice of the general British public, although it was only a trifle, and late in his career of giving. Many institutions in Bombay long struggled, until the intelligent munificence of Jamsetjee Jejeebhoy ended the struggle. He gave £1,500 to provide books and prizes for students in the Medical College; £3,000 to the Obstetric Institution; £16,500 to endow an hospital. The bridge and causeway at Mahim, uniting Bombay to Salsette, which cost £18,000, is the gift of Lady Jamsetjee Jejeebhoy. Water was wanted at Bombay and other towns; Sir Jamsetjee gave the works. He gave £4,500 towards the £18,000 for the works at Poonah. Towards an hospital for the poor, others gave £8,000; Sir Jamsetjee and his lady, £7,000. A "Dhurmsalla," or resting-place between Bombay and Poonah, was the gift of Sir Jamsetjee. A native Catholic Christian had endured several reverses of fortune—Sir Jamsetjee gave his family £10,000. To a local institution, built by a friend, Jamsetjee gave £7,000, after the man's death, as a token of friendship. A poor debtor, a town in difficulty, an Arts' School—all came to him. He is understood to have thus distributed £110,000 amongst the members of his faith, and a like sum amongst persons of all sects; and this in a country where money purchases four or five times more than it does in our own. One fact will show Jamsetjee's high repute for justice; he was never engaged in a law-suit on his own account; but his friends, neighbours, and townsmen frequently referred to him cases of a mercantile as well as of a private and personal nature for his arbitration. Yet, with all this open-handedness, it is not alleged against Sir Jamsetjee that he has resorted to the Indian practice of "Khutput," or spending money in "making things pleasant." It was in acknowledgement of some of these public services that, on retiring from the government of Bombay, the late Sir James Carnac bespoke the favour of the Sovereign, and her Majesty then conferred on Jamsetjee Jejeebhoy the honor of knighthood. We well remember the pleasure which that act gave in England as well as in India. But greater services performed in the fifteen succeeding years, almost challenged greater rewards, and we have not completed the list; the full amount and details of which, probably, will never be known.—*London Globe.*

DESTRUCTION OF THE NANKING PORCELAIN TOWER.

It appears by the accounts published in the *North China Herald* that the wonder of China, the Nankin Pagoda, or so-called Porcelain Tower exists no longer. It was blown up by orders from Hung Siu-tsiuen about the time that the head of Wei, the Northern king, was demanded of him by Shi Tah-Kai, the assistant king, under the appre-

hension that it might be taken possession of by one of the other leaders, fortified, and directed against the city, which it commands.

A description of this far-famed tower will be interesting to our readers at this time. Du Halde says, "It is without dispute the tallest and most beautiful of all those to be seen in China."

It was built about the year 1413, by Yung-loh, the third emperor of the Ming dynasty. Representations of it are found in nearly all the school geographies of civilized nations; and well do many of us remember the school-boy idea we formed of its milky whiteness associated with the term *porcelain*,—while in reality but a comparatively small portion of it is white. Green is the predominant color, from the fact that the curved tiles of its projecting roofs are all of this color, while the wood work supporting these roofs is of the most substantial character, in the peculiar style of Chinese architecture, curiously wrought and richly painted in various colors. The body or shaft of the edifice is built of large, well burnt brick, and on the exterior surface they are red, yellow, green, and white. The bricks and tiles are of very fine clay, and highly glazed, so that the tower presents a most gay and beautiful appearance, which is greatly heightened when seen in the reflected sunlight. It has nine stories, and is two hundred and sixty English feet high. At the base, it is over three hundred feet in circumference, each side of the octagon being about forty feet. After the first or ground story, all the others are quadrangular on the inside instead of conforming to the octagonal exterior. On each face is an arched opening in which one can stand and look out upon the surrounding scenery; but a wooden grating prevents you from stepping out upon the galleries, which are not provided with balustrades. The inner walls of each story are formed of black, polished tiles, a foot square, on each of which an image of Buddha is moulded in *bas-relief*, and is richly gilt. There are, on an average, more than two hundred of these images in each story, giving an aggregate of near two thousand in all. A steep staircase on one side of each square apartment leads to the one above, and by this means you may reach the top, from which a magnificent panorama is seen spread out before you—the whole city of Nanking toward the north, but, as it were, at your feet—its fine amphitheatre of hills, yet not so high as to shut out a prospect beyond, in some directions, as far as the eye can reach—then three or four miles distant, northward, you see the noble *Yang-tze-giang*, from which a canal leads up to the city, and surrounds it, forming the moat.

A fine, spacious temple, covered with yellow glazed tiles, and filled with gilded idols, stands at the foot of this Pagoda, and in the same extensive inclosure. Here we purchased of a priest a native cut, representing the tower, and containing some particulars relative to its history. Of a portion of it the following is a translation:

"The Emperor Yung-loh desiring to reward the kindness of his mother, began, in the tenth year of his reign, in the sixth month and fifteenth day, at midday, to build this tower. It was completed in the sixth year of the Emperor Sien-tab, on the first day of the eighth month, having occupied nineteen years in its erection. The order of the Emperor to one of his Ministers, Wong-ti-tah, of the Board of Public Works, was to build a tower according to a draft which he had prepared and put into his hands. It was to be nine stories high, the bricks and tiles to be glazed and of the 'five colors,' and it was to be superior to all others *in order to make widely known the virtues of his mother*. Its height was to be 30 *chang*, 9 feet, 4 inches and 9-10ths of an inch. The ball on its spire to be of yellow brass overlaid with gold, so that it might last for ever, and never grow dim. From its eight hooks as many iron chains extend to the eight corners of the highest roof; and from each chain, nine bells, suspended at equal distances apart. These, together with eight from the corners of each projecting roof, amount to 144 bells. On the outer face of each story are 16 lanterns, 128 in all, which, with 12 on the inside, make 140. It requires 64 cattles of oil to fill them. Their light shines through "the 33 heavens," and even illuminates the hearts of all men, good and bad, eternally removing human misery. On the top of the highest roof are two brazen vessels, together weighing 900 cattles, and one brazen bowl besides, weighing 450 cattles. The grounds belonging to the pagoda and occupied by temples and other buildings, are $9\frac{1}{2}$ and 33 paces in circumference. Having been adorned by the Emperor Yung-loh, its brilliancy will now endure to hundreds of generations—a monument of recompensing kindness to myriads of years. Therefore it is named *Paug-an-sz*, i. e., *Recompensing Favor Pagoda*. An inscription on a tablet within call it "The First Pagoda." Its cost was 2,485,484 taels of silver (\$3,452,000.) Encircling the spire are nine iron rings—the largest being 63 feet in circumference, and the smallest 24 feet—all together weighing 3,600 cattles. In the bowl on the top are deposited, one night shining pearl, one water averting pearl, one fire averting pearl, one wind averting pearl, one dust averting pearl, a lump of gold weighing 40 taels, a picul of tea leaves, 1,000 taels of silver, one lump of ornament weighing 100 cattles, one precious stone gem, 1,000 strings of 'cash' bearing the stamp of the Emperor Yung-loh, two pieces of yellow satin and four copies of Buddhist classics.

"In the fifth year of the Emperor Kia-king of the present dynasty, on the fifth month and fifteenth day, at daylight in the morning, the god of thunder drove poisonous reptiles to this pagoda, and immediately three sides of it were injured. The strength of the god of thunder was very great, but Buddha's resources were infinite, therefore the whole edifice was not destroyed. The two highest mandarins at Nankin, and Suchan, the Tsungtoh and Futai, thereupon informed the Emperor of the accident, and he besought him to have it repaired. So in the seventh year of his reign, and on the second month and sixth day, the repairs were begun, and were finished on the second day of the sixth month, in the same year, so that the building was as perfect as when new."

Such is the native account of this remarkable edifice; and when, on turning a corner of one of the large temples in the spacious inclosure, we came suddenly in view of the whole structure, at once, its beauty and grandeur far surpassed our most glowing anticipations. But by far the most interesting circumstance associated with the Porcelain Tower is the fact that it is a monument of filial affection—a magnificent tribute of the gratitude of a son for a mother's love.

Here is another of the many striking contrasts between the customs of the Chinese and of Western nations. We deposit the record of the commencement of the work at its base and under the superstructure. They, more significantly, do so on its completion at its summit. The conception of the Chinese is the most sublime and grand—*Finis coronat opus*—but practically they may be wrong, as it is suggested by the reports in Nankin that the tower was blown up in order that the treasures, of course exaggerated in amount by the people, might be more easily obtained from the almost inaccessible depository. Since the possession of Nankin by the Pai Pings all the idols in the Tower, and elsewhere, have been destroyed, and the floors and means of ascent broken up.

INDIAN NATIVE NEWSPAPERS.

The native press in the upper provinces of India is a very recent institution, having originated beneath the beneficent and enlightened rule of the late lamented Mr. Thomason. In 1848, there were only seventeen lithographic presses in those provinces; in 1852, this number had increased to thirty-seven. Pamphlets, and even works of some magnitude, in the native languages, are issued from these presses, as well as newspapers and literary periodicals. The circulation of the journals, however, is still very insignificant, varying from 5 to 231 copies; and in the last-named year their combined circulation amounted to no more than 1,697, the total receipts from which were estimated at £1,642. The entire number of newspapers was only thirty-four. But during the same twelve months 82,450 copies were struck off of 130 different works, the aggregate value of which would not exceed £4,000. The native newspaper has been thus characterised by Mr. J. W. Sherer, a young civilian of singular merit:—"Its news is generally the worst part about it; undeviatingly inaccurate, trivial, behind-hand, and ridiculous. Opinions they seldom express. Their best feature is a sort of penny magazine article, on some subject of general information, translated from the English, occasionally scientific, biographical or historical. This is rather a way in which the native mind likes to take knowledge in fragmental doses, ready prepared for superficial display. Poetry, religious discussion, extracts, &c., make up the rest of the budget." The contents of the paper being of this nature, and mostly borrowed at second-hand from the English press, it may be inferred that the expenses are not very great—a fortunate circumstance, considering the smallness of receipts. Thus in 1848 the monthly expenditure of the "Ukhbar-ool-Huquaung" or "Genuine News," issued from the Agra College press, fell short of £10. This sum was distributed as follows:—Sub-editor, £1 10s.; copyist, £1; accountant, &c., 14s.; pressman, 10s.; spongeman and two coolies, 16s.; messenger and watchman, 16s.; water carrier, 1s. 6d.; paper, £2 4s.; sundries, 12s.; postage, 16s.; house-rent, 5s.; wear and tear, 4s.; contingencies, 10s.;—total, £9 18s. 6d. The "Genuine News" at that time yielded a monthly profit of 6s. 6d. to its proprietors, the result of a bi-weekly issue of eighty-two copies, besides twenty distributed gratuitously. The expenditure in this instance, however, was unusually high, as, indeed, were also the receipts. In the year 1852 there were nine papers, published in the city of Agra alone, circulating together 749 copies, and returning a gross sum of £598 per annum. In the same year Barilly produced only one paper, the "Omdut-ool-Ukhbar," or "Most Trustworthy News;" forty-two subscribers; weekly; local intelligence, Government orders, scientific subjects, &c.; unpopular, because written in simple Oordoo. Benares was more prolific in literary produce. It could boast of seven papers, circulating 865 copies, and yielding annually a gross revenue of about £310. At Cawnpore there were two lithographic presses, whence books alone were issued. But in the imperial city of the Great Mogul the journalist is duly honoured. Seven newspapers were published at Delhi, five of which together circulate one hundred and sixty-three copies, returning £280 a year.

At Indore, the patronage of the young holkar, and the countenance of the British resident, have called into being the "Malwa Ukhbar." A half sheet of this paper is written in Oordoo, the other half in Hindee. About ninety copies are distributed, of which only eighty are to paying subscribers. It contains principally local news, and is well conducted. At Lahore, two papers were published. The "Kohi-Noor," or "Mountain of Light;" 205 subscribers; three shillings a month; thrice a week; in excellent Oordoo: news, Government orders, &c. The "Durya-i-Noor," or "Sea of Light;" twenty-five subscribers; three shillings a month; in Oordoo; closed its useful career in 1852. The "Noor-Ala-Noor," or "A Light upon Light," published at Leodiana; and the "Bag-i-noor," or "Garden of Light," published at Umritsur, though both papers of good promise, were compelled to desist after a brief struggle of only a few months. And the same fate overtook, at a still earlier period, the "Simlah Ukhbar," though supported by the superintendent of the Hill States. The Meerut presses produced two journals. These, with the exception of a scurrilous journal published at Mooltan,—but discontinued during the editor's imprisonment for a libellous attack on a native official,—were the only papers in the vernacular tongues, circulated in 1852 among a population of upwards of thirty-four millions of people. Even of these few the existence was precarious, and perhaps not one of them returned a net income of £100 a year.—*Daily News*.

Educational Intelligence.

CANADA.

— CONVOCATION, UNIVERSITY OF TORONTO.—The annual Convocation of the University of Toronto, was held 26th June, in the University buildings. The Chancellor, Hon. R. E. Burns, presided.

Admission to Degrees.—B.A.: G. Kennedy, N. Burns, J. Ross, W. Oliver, P. McDermid, T. H. Bull, W. S. Francis, J. F. Smith, J. Windeat, B.A. *ad eundem*, J. Turpin, B.A., *ad eundem*, G. Dormer, B.A., *ad eundem*. M.A.: J. E. Thomson, B.A. (1845); W. Craigie, B.A. (1847); E. Ryerson, B.A., (1848); G. A. Barber, B.A. (1850); H. Hurlburt, B.A., (1850); E. Fitzgerald, B.A. (1851); C. F. Eliot, B.A. (1851); W. L. Lawrason, B.A. (1853); J. F. Boulton, B.A. (1853); C. J. Macgregor, B.A. (1854); E. Crombie, B.A. (1854); C. E. English, B.A. (1854); J. Windeat, B.A. (1857). M.B.: N. O. Walker, M.B., *ad eundem*. M.D.: H. Turner, M.D., *ad eundem*.

Matriculants.—Faculty of Arts: W. Brown, J. C. Grierson, J. G. Ridout, A. E. Miller, J. Turnbull, G. R. Northgrave, J. Thom, R. T. Livingstone, R. McGee, A. Macallum, A. M. Rosebrugh, A. Hector, T. Graham, J. Shaw, J. B. Ross, J. Brodie, G. Cooper, G. Grant, A. Grant, J. McLean, S. Lount, S. G. Wood. Agriculture: W. G. Buckland.

Rev. John McCaul, LL.D., rose and said, it would be his pleasing duty to present those students who had this year taken scholarships. In doing so, he said, it was to him a source of gratification to be enabled to draw attention to some distinguishing characteristics. In the first place the number of students this year was very much in excess of other years. Another point was the number of candidates for honors in Greek and Latin, which was far in excess of any other year. Last year there was but one, this year there were eleven. But there remained one other point to which he could advert with peculiar satisfaction. The result of this examination had yielded an additional proof—if additional proof was necessary, after the success of Mr. Ross as a student of the University and College—that the Almighty has bestowed his gifts with impartial hands—that he has given them without regard to race or origin, and he conferred these intellectual endowments alike on the pale face of Europe, the red wanderer of our American forests, and the dark progeny of Africa's arid sands. (Loud applause.)

The students were then severally presented with their prizes and certificates of honor.

In presenting the prize to Mr. J. A. Boyd, for his poem, "The loss of the Pacific," Professor D. Wilson, LL.D., bestowed a very warm encomium on the composer. The poem had been sent in to the examiners, Mr. Stennett and himself, with a motto, but without the name of the author. Both examiners had, however, been unanimous in awarding the first prize to this poem. And he (Dr. Wilson) would say that he believed that this prize poem would compare very favorably with the ordinary class of prize poems as presented in the universities at home, and held out a hope that hereafter we may be able to boast of a Canadian poet of merit.

The business of the Convocation having been concluded, the Chancellor rose and spoke as follows:—When I was asked some few months since to

accept the position of Chancellor of this institution, I hesitated, for many reasons, to do so. I have not had the advantages of a university education, and as Canadian born and educated, never was able to do more than attain such information as a grammar school could impart. Besides, in the position of head of the University, I feared that I could not, with my other duties, devote a sufficient time to be properly an efficient and useful member; but I was assured that as Chancellor of the University of Toronto, I might be excused the want of that literary information derived from education, which seemed to me to be necessary, when it was considered that University College possessed in its professors all that was either expected or could be required on that score, and that if I would consent to devote what time I could, I would no doubt find both able and useful assistance. In consequence of the University having it now in its power to proceed with the erection of a home, I consider that we are about entering upon a new era. It should rejoice the hearts of all, from one end of the Province to the other, to know that a seat of learning, such as was expected from, and worthy the munificent endowment has been granted. Simultaneously with the erection of this building, the Senate is rapidly proceeding to provide such an addition to the library as will afford those thirsting after useful knowledge, the means of gratifying it, and while attentive to such wants, the Senate has not been unmindful of the museum and the other departments, necessary to impart both scientific and other knowledge. The statutes of the University have lately been revised, condensed, and classified, and now are put into convenient shape for reference, and for the first time have been printed in a form that renders them accessible to every one who may be affected by them, or who may desire to see or consult them. I have addressed these few remarks in truth to the Convocation of the University of Toronto, for although the Legislature in remodelling this institution, thought proper to drop the word entirely, yet I cannot look upon this meeting in any other light than as properly a meeting or Convocation of the University. I trust that we may consider it is not an extinct body, but on the contrary, act upon the idea that it has existence still for some purposes certainly. Let us, therefore, be united in treating ourselves as such so far as we can and may, and I doubt not that we shall reap the advantage of it in future. It is therefore, in this light that I may congratulate the Convocation upon an increased number of persons entering themselves as students in this University, thus proving to those who have taken degrees in it, that their example is producing fruit, and proving to the public at large that confidence in its capabilities is gaining ground. It is also gratifying to observe so many taking fresh degrees, who had formerly taken degrees in the University. This may be looked upon as renewed confidence in the institution and an increased love of its academic honors. Finally, I have to say that I became a member of this institution with no other object in view than that of rendering my mite in the cause of education, and with a determination that if I could be of service to my country in that respect, I would devote what I could to it. Let us all bear in mind the same idea, and enter upon the several duties which have been assigned to us—the will to impart instruction and knowledge,—the disposition to acquire the latter,—the exercise of power to countenance and assist, then we may prove to the public at large that this institution is truly a blessing to the country, and may establish for it a name that will not be confined to Canada, but spread over a large portion of this Continent.

— BISHOPS' COLLEGE, LENOXVILLE.—The Annual Convention of the University of Bishops' College was opened on Tuesday last. On motion of the Rev. Principal of the University, seconded by Rev. G. Slack, M.A., Mr. Justice McCord was re-elected Vice-Chancellor by acclamation. On Wednesday morning the Bishop of Quebec, assisted by the Bishops of Maine and Montreal, proceeded to consecrate the College Chapel. The Chapel is a very perfect specimen of Gothic architecture, with open roof, &c., combining richness of effect with simplicity of style. The chancel is surrounded with stalls, these and the communion table being grained in oak. The lancet windows are beautifully stained, that over the altar being, divided into three compartments, and having pictured upon it scenes in the life and ministry of Christ from his birth to the descent of the Holy Ghost upon his chosen after his ascension. The choir of St. George's Church were present on the occasion and sang the choral portion of the services, including an anthem, with admirable effect. The adjourned meeting of the Convocation was held in a temporary building erected for the purpose between the College and the Chapel. The Vice-Chancellor took the chair at 3 o'clock, p.m. There were present at the meeting the Bishops of Quebec and Montreal, the Bishop of Maine, the Principal and Officers of the College, and many members of Convocation, and the benches were

filled by the ladies and gentlemen of the neighbourhood, who evinced great interest in the proceedings. The Vice-Chancellor opened the meeting, after which the candidates for the degrees were presented to him in the following order:—The Rev. J. H. Thompson, Professor of Divinity, presented the Right Revd. G. Burgess, Bishop of Maine, D.D., of Brown University, Providence, Rhode Island, and of Union College, Schenectady, N. Y., to be admitted to the degree of D.D. *ad eundem*. The Rev. Principal Nicolls presented the Hon. George Moffatt, a Trustee of the College, for the degree of D.C.L., *honoris causa*; Charles Hamilton, Esq., of Quebec, B.A., of University College, Oxford, for the degree of B.A. *ad eundem*; and James Jones of Bedford, C. E. Stephen Edgell, of Lennoxville, C.E., Edward C. Fowle, of Lennoxville, C. E., and Louis C. Wurtele, of River David, C. E., *alumni* of the College, for the degree of B. A. After the oath of allegiance had been administered to the new Bachelors of the University, the whole meeting sang the "National Anthem." The Bishop of Quebec addressed the Convocation in an able speech, giving a condensed history of the rise and progress of the University of Bishops' College, and concluded by returning thanks to the Bishop of Maine for his kind attendance at that anniversary. J. S. Sanborn, Esq., M.A., M.P.P., next delivered an able and eloquent discourse upon the advantages of collegiate education, not only to men intended for the learned professions, but to all. It was most favourably received. The Vice-Chancellor thanked Mr. Sanborn on behalf of the Convocation, and requested permission to publish the address—a request to which we are happy to learn, Mr. Sanborn acceded. The Bishop of Maine, the Bishop of Montreal, and George Baker, Esq., M.A., also addressed the Convocation, which was then closed with the usual formalities.—*Montreal Gazette*.

—**McGILL NORMAL SCHOOL.**—On Wednesday afternoon the first annual public examination of this school took place in the large hall of the school. The hon. the Superintendent of Education for Lower Canada, presided, supported on either side by his Lordship the (Anglican) Bishop of Montreal, and Principal Dawson, LL.D. There was a large attendance of the friends of popular education, who took a deep and hearty interest in the proceedings. The pupil teachers were examined in Arithmetic, Geometry, English, and French, and Natural History, and their correct and ready replies not only gave great satisfaction to those present, but afforded an earnest not only of the present but of the future usefulness of the school.—*Montreal Herald*.

—**HIGH SCHOOL DEPARTMENT OF MCGILL COLLEGE.**—On Tuesday afternoon the annual distribution of prizes to the pupils of this institution took place. His Excellency the Administrator of the Government presided. Addresses were delivered by the Hon. P. J. O. Chauveau, Judge Day, and Messrs. John Dougall and J. J. Day. The Masters of the School presented Mr. T. A. Gibson with an academical cap and hood. The boys of the school presented Mr. Rodger with a gown. Both these gentlemen have received from the University the honorary degree of M.A. The number of scholars in the High School for the past year was 252, more than 200 of whom had studied Latin. Only 30 had studied Greek. The Governors have resolved to have a salaried Drawing master, and, we are pleased to add, a teacher of Music. The prizes having been distributed, His Excellency rose and addressed the recipients. He said it gave him great gratification to take the part he had done in the proceedings of that day, and he most sincerely congratulated them and their parents and friends on the progress which they were reported to have made. His own school days were long past; he was separated from them by many years, yet he could still sympathise most heartily with the vivid feelings of pleasure and satisfaction with which their success must stir their youthful minds; he could sympathise with the exultation they would experience in taking home these prizes—testimonials of their proficiency—to give pleasure to their parents, their brothers and sisters, those dear friends and companions of theirs who would listen to their praises without envy, and hear of and witness their triumphs without a pang. (Applause.) To those who are about to leave school he desired to say a word. The whole colour of their future existence might be decided by what they had learned here and their employment of the next few years—the course of their destiny, for good or evil, would turn upon it. He begged them to remember that their education did not end when they left the school room—education, properly so called, only began there. The seed had been sown here, but it would remain for them to tend and weed the growing crop, and in due time to gather in the harvest. He was himself a soldier, much more conversant with men than bookish lore, with the battle field than the schools; but he hoped they would not therefore heed the less the advice he gave them. When people asked

what good was this or that branch of learning to them, they should not listen; they should turn a deaf ear to all such critics. The studies they had pursued had the effect of drawing out and developing the faculties God had given them. Their studies ought not to be directed solely to fit them for the work of their future daily avocations, but for something far higher—something above the mere drudgery of getting a living. He hoped they had acquired a love of knowledge for its own sake and would add to it that noblest of ambitions—the desire of being good and useful men. He would add a few words to those who remained behind at school. He earnestly urged on them to lose no time, but use every effort to improve their advantages to the utmost. It was not in receiving instruction at the hands of their teachers alone that their education consisted, but in the practice of what they were taught among their schoolfellows and friends. The work of their education should go on in the play-ground as well as in the school-room—their characters were being formed in the one place quite as much as the other. They could not too scrupulously or too constantly practice habits of manly honour, truthfulness, and self-respect. These are the qualities that are sure to command the respect and esteem of their fellow men. For he felt it a duty to warn them that while the possession of knowledge gave them great power; it was a sort of power that might be turned to evil as well as good. He would not—God forbid that any should—even for that reason, withhold from any the blessings which education confers. Yet he would warn them to take care that they made good use of this power. They should enter the world like good soldiers entering an enemy's country; circumspectly, cautiously, keeping a good look out. You will enter on the discharge of the duties of life with great advantages, great opportunities to rise; the world is all before you, more particularly the bright fresh field of this western world. May success attend you.

BRITISH AND FOREIGN.

—**THE NATIONAL SOCIETY.**—The annual meeting of this society for promoting the education of the poor, was held on Thursday, at the Sanctuary, Westminster, the Archbishop of Canterbury presiding, supported by the Bishops of Bangor, St. Asaph, Salisbury, and Sodor and Man, Lord Bayning, Sir George Baker, Bart., Rev. Sir Henry Thompson, Bart., Rev. Sir Charles Farnaby, Bart., Right Hon. W. Heneley, M.P., Hon. W. Cowper, M.P., and other gentlemen. The report stated that the grants hitherto voted in aid of building and enlarging schools and teachers' residences would be discontinued unless the income of the society was largely increased. On this account the sum of £4,887 had been paid during the past year, providing accommodation for 19,191 scholars, and 86 teachers. The total number of schools now in union with the society was 10,856, 208 having been added since the last report. Since the Manchester buildings, and the boarding-house in Smith-square had been rented by the society—which were both since 1839—1,194 masters had been trained in the former, and 1,497 mistresses in the latter; the Manchester buildings having been a charge to the society of £22,027, and the boarding house in Smith-square, of £18,160. Both, however, were now closed. The society had made an addition to its organising masters; and her Majesty's inspector had expressed himself well satisfied with the improvement which had taken place within the last year in the Central schools. The receipts from the Depository, for 1856, had amounted to £14,878, being an increase of £2,000 over those of the preceding year. Among other points, the report touched upon the satisfactory reports of the training institutions at Carnarvon and Carmarthen, and of St. Mark's College, Battersea College, and Whitelands. A grant had been made in aid of a new training school for mistresses, in the diocese of Durham, and steps had been taken to build a training college for masters in the diocese of Peterborough. During the last three years alone the society had assisted in providing additional accommodation in elementary schools for 67,723 children, supplied from its own training schools 610 masters and mistresses, furnished increased accommodation in its depository for the purchase of school books, materials, and apparatus, aided in the establishment of several local depots, and, at the same time, promoted the work of inspecting and organizing schools.

—**OXFORD MIDDLE CLASS EXAMINATIONS.**—The new statute on middle class examinations, which was promulgated in Congregation on Friday, June 5, and accepted by that body on Wednesday, June 10, was submitted to the members of Convocation on Thursday, and finally carried by a large majority, as well as the title of A.A., (Associate of Arts,) the latter forming the subject of a separate vote. The following is the result of the

voting. For the entire statute, placet, 73; non-placet, 17. For the title, placet, 52; non-placet, 36. Two other decrees of small importance were then put to the vote, and carried.

Literary and Scientific Intelligence.

— ATLANTIC SUBMARINE TELEGRAPH.—The tedious process of shipping this gigantic coil proceeds daily, and already ninety-eight miles are wound in beautiful regularity round the circular hold of the *Agamemnon*. As the time now rapidly approaches when it must leave this country, and, whether successful or not, be for evermore hid from the eyes of men, the greatest anxiety is manifested to inspect the coil, which alone as a grand specimen of manufacturing skill is well worth a visit. The day the shipment commenced Sir George Grey, Sir Charles Wood, and a distinguished party of visitors, including the Lords of the Admiralty, were present, and waited to see the first mile placed safely on board. On Friday and Saturday, also, the visitors were most numerous, the Members of both Houses, and the representatives of foreign Courts being alike anxious to survey this long metallic channel of speech. The whole of the steam-engines, drums, breaks, and under-running gear, with all the apparatus necessary to its submergence, will be fixed in the course of a few days, and visitors to the *Agamemnon* will then be able to see at a glance the mode in which the telegraph will be sunk, and the dangers and difficulties which beset the operation. At present the wish to witness the details connected with its manufacture extends to the parent establishment—the Gutta Percha Company's works, where the core of the cable is formed and the copper conductor coated and insulated. On Saturday, Lord Wynford, Admiral Sir William Parker, with Rear-Admirals Sir Henry Martin, Fanshawe, Richards, and Martin, with other naval and scientific gentlemen; were at the works to inspect the whole process of coating. A number of experiments were tried, and fuses were fired under the canal near the Gutta Percha Company's works through a coil of wire sixty-five miles long.

Departmental Notices.

PRIZES IN SCHOOLS.

The Chief Superintendent will grant one hundred per cent. upon all moneys transmitted to him by Municipalities or Boards of School Trustees for the purchase of books or reward cards for distribution as prizes in Grammar and Common Schools.

PENSIONS—SPECIAL NOTICE TO TEACHERS.

Public notice is hereby given to all Teachers of Common Schools in Upper Canada, who may wish to avail themselves at any future time of the advantages of the Superannuated Common School Teachers' Fund, that it will be necessary for them to transmit to the Chief Superintendent, without delay, if they have not already done so, their annual subscription of \$4, commencing with 1854. The law authorizing the establishment of this fund provides, "that no teacher shall be entitled to share in the said fund who shall not contribute to such fund at least at the rate of one pound per annum." This proviso of the law will be strictly enforced in all cases; and intimation is thus early given to all Teachers, who have not yet sent in their subscriptions, to enable them to comply with the law, and so prevent future misunderstanding or disappointment, when application is made to be placed as a pensioner on the fund.

SCHOOL MAPS AND APPARATUS.

The Legislature having granted annually, from the commencement of 1855, a sufficient sum of money to enable the Department to supply Maps and Apparatus (not text-books) to Grammar and Common Schools, upon the same terms as Library Books are now supplied to Trustees and Municipalities the Chief Superintendent of Education will be happy to add one hundred per cent. to any sum or sums, not less than five dollars, transmitted to the Department; and to forward Maps, Apparatus, Charts, and Diagrams to the value of the amount thus augmented, upon receiving a list of the articles required by the Trustees. In all cases it will be necessary for any person, acting on behalf of the Trustees, to enclose or present a written authority to do so, verified by the corporate seal of the Trustees. A selection of articles to be sent can always be made by the Department, when so desired.

SITUATION WANTED.

A TEACHER of much experience who holds a FIRST CLASS, FIRST DIVISION A CERTIFICATE from the Normal School, and can produce unexceptionable testimonials, wishes an engagement about the end of the Summer vacation, or the 1st of October.
Address A.B., Post Office, Hamilton.

NORMAL SCHOOL TEACHER WANTED,

BY the 17th of September next, for School Section No. 12, Township of Seneca. Must have a First or Second Class Certificate (Male Teacher preferred.) Salary not so much an object as proper qualifications. Apply to ROBERT A. KING, Trustee, Canfield Post-office.
August, 1857.

TEACHER WANTED.

A HEAD MASTER wanted immediately for the Union Grammar and Common School of Cayuga, County of Haldimand. A liberal salary will be given. Apply to Mr. Winram, Secretary to the Board.
Cayuga, 25th July, 1857.

ADELAIDE ACADEMY

[INCORPORATED BY ACT OF PARLIAMENT,]

FOR the Education of YOUNG LADIES, HAMILTON. Next Academic Year will commence on the 1st September.

Reference is politely permitted to the following gentlemen, and to the numerous patrons of the Academy: The Hon. Chief Justice Sir J. B. Robinson; The Hon. Robt. Baldwin, C. B.; Rev. E. Wood, President, W. M. C.; Rev. R. Burns, D. D.

J. B. HURLBURT, A. M., LL.D.,

Mrs. J. B. HURLBURT,

} Principals.

Hamilton, 12th Augt., 1857.

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EDITED BY THOMAS HODGINS,

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Toronto, August 12th, 1857.

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