

## Technical and Bibliographic Notes / Notes techniques et bibliographiques

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

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

- |                                     |   |                                     |   |
|-------------------------------------|---|-------------------------------------|---|
| <input type="checkbox"/>            | Coloured covers /<br>Couverture de couleur  | <input type="checkbox"/>            | Coloured pages / Pages de couleur   |
| <input type="checkbox"/>            | Covers damaged /<br>Couverture endommagée   | <input type="checkbox"/>            | Pages damaged / Pages endommagées   |
| <input type="checkbox"/>            | Covers restored and/or laminated /<br>Couverture restaurée et/ou pelliculée   | <input type="checkbox"/>            | Pages restored and/or laminated /<br>Pages restaurées et/ou pelliculées   |
| <input type="checkbox"/>            | Cover title missing /<br>Le titre de couverture manque  | <input checked="" type="checkbox"/> | Pages discoloured, stained or foxed/<br>Pages décolorées, tachetées ou piquées  |
| <input type="checkbox"/>            | Coloured maps /<br>Cartes géographiques en couleur  | <input type="checkbox"/>            | Pages detached / Pages détachées  |
| <input type="checkbox"/>            | Coloured ink (i.e. other than blue or black) /<br>Encre de couleur (i.e. autre que bleue ou noire)  | <input checked="" type="checkbox"/> | Showthrough / Transparence  |
| <input type="checkbox"/>            | Coloured plates and/or illustrations /<br>Planches et/ou illustrations en couleur   | <input checked="" type="checkbox"/> | Quality of print varies /<br>Qualité inégale de l'impression  |
| <input checked="" type="checkbox"/> | Bound with other material /<br>Relié avec d'autres documents  | <input type="checkbox"/>            | Includes supplementary materials /<br>Comprend du matériel supplémentaire   |
| <input type="checkbox"/>            | Only edition available /<br>Seule édition disponible  | <input type="checkbox"/>            | Blank leaves added during restorations may<br>appear within the text. Whenever possible, these<br>have been omitted from scanning / Il se peut que<br>certaines pages blanches ajoutées lors d'une<br>restauration apparaissent dans le texte, mais,<br>lorsque cela était possible, ces pages n'ont pas<br>été numérisées. |
| <input checked="" type="checkbox"/> | Tight binding may cause shadows or distortion<br>along interior margin / La reliure serrée peut<br>causer de l'ombre ou de la distorsion le long de la<br>marge intérieure. |                                     |   |
| <input checked="" type="checkbox"/> | Additional comments /<br>Commentaires supplémentaires:  |                                     | Continuous pagination.  |

# JOURNAL OF



# EDUCATION,

Province of

Ontario.

VOL. XXIII.

TORONTO, MARCH, 1870.

No. 3.

## CONTENTS OF THIS NUMBER:

SCIENCE AND LITERATURE IN GENERAL EDUCATION .....	33
THE SCHOOL HOUSE AND ITS ARCHITECTURE (20 Illustrations). (2.) Hanging Baskets for the School Room. (3.) Axioms in Ventilation in Schools. (4.) Health of School Children—Important Opinion .....	35
I. BIOGRAPHICAL SKETCHES.—(1.) Sir De Lacy Evans, G.C.B. (2.) The Rev. Dr. Mathieson. (3.) George Malloch, Esq. (4.) Mr. William McCallum. (5.) George Duck, Esq. ....	41
II. MONTHLY REPORT ON METEOROLOGY OF THE PROVINCE OF ONTARIO .....	43
III. MISCELLANEOUS.—(1.) The Queen in a Churchyard. (2.) Honours paid to the Memory of Mr. Peabody. (3.) English Iron-clad Ships—the “Monarch”..	44
IV. EDUCATIONAL INTELLIGENCE .....	47
ADVERTISEMENTS .....	48
V. DEPARTMENTAL NOTICES .....	48

## SCIENCE AND LITERATURE IN GENERAL EDUCATION.

### INVESTIGATION VS. CRAMMING.

In Mr. Farrar's volume of *Essays on a Liberal Education* is one contributed by Mr. J. M. Wilson, mathematical and natural science master in the celebrated Rugby School, which to our mind is one of the best contributions to the discussion of the vexed question of the relations of Science and Literature in general education that has been published.

In the course of his argument, Mr. Wilson makes some suggestions as to the spirit and method of teaching natural science in schools—a subject on which, he justly remarks, there is much misconception; and his suggestions are so eminently sensible and practical, that we transcribe the following for the sake of commending both the spirit and the method to certain American teachers who flatter themselves that they are teaching science, and teaching it scientifically, while they are really doing neither.

This class of teachers is well represented in a fashionable young ladies' seminary that we have in mind. A pupil of this school—it ranks among the first in the country—one day remarked to us that she could not “endure” Botany. It was “perfectly horrid,” she said. We knew her to be fond of flowers: why then should she hate the study of them? A few questions solved the difficulty. Her first plunge into Botany (?) had been into the Linnæan System of Classification, which she had been set to commit to memory! And all her study of the “horrid” science had resulted merely in the acquisition of a

gibberish of *-andrias, -acias, -gynias*, and so on, that would have frightened a disciple of Jussieu.

The extensive sale of the text-book of Botany used in that school is proof that the “exquisite perverseness” of its method is not disapproved in more than one school, and by more than one teacher. In fact, the greater part of our science teaching is, we fear, equally unscientific.

“There are two different methods of teaching science: one, the method of investigation; the other, the method of authority. The first starts with the concrete and works up to the abstract; starts with facts and ends with laws; begins with the known and proceeds to the unknown. The second starts with what we call the principles of the science; announces laws and includes the facts under them: declares the unknown and applies it to the known. The first demands faith, the second criticism. Of the two, the latter is the easier, and the former by far the better. But the latter is seen in most text-books and is the method on which many unscientific people ground their disapproval of science. What this former method is, and why it is the better, will be seen by the following remarks.

In the first place, then, *knowledge must precede science*: for science is nothing else but systematized experience and knowledge. In its extreme applications this principle is obvious enough: it would be absurd to teach boys classification from minerals, or the power of experimental science by an investigation into the organic bases. A certain broad array of facts, must pre-exist before scientific methods can be applied, this order cannot be reversed. And this is illustrated by the profound analogy that exists between the growth of scientific knowledge in an individual and in the world. Generation after generation of men passed away, and the world patiently accumulated experience and observation of facts; and then there sprang up in the world the uncontrollable desire to ascertain the sequences in nature, and to penetrate to the deep-lying principles of natural philosophy. And the same desire is based in the individual on the same kind of experience. Where there is wide knowledge of facts, science of some kind is sure to spring up. After centuries of experience the *Philosophiæ Naturalis principia* were published.

And, secondly, this knowledge must be homogeneous with pre-existing knowledge. It is of no use to supply purely

foreign facts ; they must be such as the learner already knows something of, or be so similar in kind that his knowledge of them is equally secure : such that he can piece them in with his own fragmentary but widening experience. It is to his existing knowledge, and to that alone, that you must dig down to get a sure foundation. And the facts of science must reach continuously down and rest securely thereon. Otherwise you will be building a castle in the air. Hence the master's business is to take up the knowledge that already exists ; to systematize and arrange it ; to give it extension here, and accuracy there ; to connect scraps of knowledge that seemed isolated ; to point out where progress is stopped by ignorance of facts ; and to show how to remedy the ignorance. Rapidly knowledge crystallizes round a solid nucleus ; and anything the master gives that is suited to the existing knowledge is absorbed and assimilated into the growing mass : and if he is unwise and impatient enough (as I have been scores of times) to say something which is to him perhaps a truth most vivid and suggestive, but for which his boys are unripe, he will see them, if they are really well trained, reject it as the cock despised the diamond among the barley (and the cock was quite right), or still worse, less wise than the cock, swallow it whole as a dead and choking formula.

On these grounds then, in addition to other obvious ones, Botany and Experimental Physics claim to be the standard subjects for the scientific teaching at schools. In both there pre-exists some solid and familiar knowledge. Both can so be taught as to make the learner advance from the known to the unknown—from his observations and experiments to his generalizations and laws, and ascend by continuous steps from induction to induction, and never once feel that he is carried away by a stream of words, and is reasoning about words rather than things. The logical processes they involve are admirable and complete illustrations of universal logic, and yet are not too difficult. These considerations mark the inferiority, in this respect, of Geology and Physiology, in which the doctrines must far outrun the facts at a boy's command, and which require so much knowledge before the doctrines can be seen to be well founded. And these considerations exclude Chemistry, as an elementary subject at least, since there is so little pre-existing knowledge in the learner's mind on which the foundations can be laid. On all grounds the teaching of Chemistry should follow that of Experimental Physics.

Unless this method of investigation is followed, the teaching of science may degenerate, with an amazing rapidity, into cramming. To be crammed is to have words and formulæ given before the ideas and laws are realized. Geology and Chemistry are frightfully cram-mable. But Botany and Experimental Physics are by no means so easy to cram. What they might become with bad text-books and a bad teacher, I cannot, indeed, say ; but it is a very important consideration. For it is possible to teach even Botany and Experimental Physics with exquisite perverseness, so as to deprive them of all their singular advantages as subjects for elementary training in science. It is possible to compel the learning of the names of the parts of a flower before the condition or existence of a name, viz., that it is seen to be wanted, is fulfilled ; to cumber the learner with a terminology that is unspeakably repulsive when given too soon—given before the induction which justifies the name has been gone through ; to give the principles of classification before a sufficient acquaintance with species has called out the ideas of resemblance and difference, and has shown the necessity of classification ; to give theories of typical form when it seems a wild and grotesque romance ; to teach, in fact, by the method of authority. And this may be done by truly scientific men, fully believing that this is the true and only method. Witness Adrien de Jussieu's "Botanique."

The true method is assuredly to begin by widening for your boys the basis of facts, and instantly to note uniformities of a low order, and let them hazard a few generalizations. The boys will far outrun their master. Their tendency to make generalizations of the most astounding kind is both amusing and instructive ; it constantly reminds me of the ancient Greek Philosophy ; it is the proof that there is both the power to be trained, and a need of the training. A theory is necessary to observation. Make them verify, and expurgate, and prune, and, if need be, reject their theories by a constant appeal to facts ; sympathize with them in their search for truth, and so search for more facts and more accurate observations ; and thus the crystal pyramid of their science grows, its base ever widening, its summit ever rising.

The art of the school master is a maieutic art now, as it was in the days of Socrates ; it is still his business to make his boys bring their notions to the light of day, to the test of facts ; constantly to require verification ; but as often as possible to give them the pleasure of discovery. He may guide them to the treasure, but let him unselfishly give them the delight of at least thinking they have found it. This is the charm that tempts them on, and is the highest reward they can win. At first the seeming progress is slow, but

it soon accelerates, and the avidity for learning soon compensates for the apparent poverty of results at first,

I insist upon this point because I am convinced that it is very important, and very likely to be overlooked ; and as Botany seems the best subject for beginning to train boys in scientific methods ; and as no English work is thoroughly to be recommended as a guide to botanical teaching, I shall devote a brief paragraph or two to the illustration from Botany of what I hold to be the true method of beginning to teach science.

Suppose then your class of thirty or forty boys before you, of ages from thirteen to sixteen, as they sit at their first botanical lesson ; some curious to know what is going to happen, some resigned to anything, some convinced that it is all a folly. You hand round to each boy several specimens, say of the Herb Robert ; and taking one of the flowers, you ask one of them to describe the parts of it. "Some pink leaves," is the reply. "How many?" "Five." "Any other parts?" "Some little things inside." "Anything outside?" "Some green leaves." "How many?" "Five." "Very good. Now pull off the five green leaves outside, and lay them side by side ; next pull off the five pink leaves, and lay them side by side ; and now examine the little things inside. What do you find?" "A lot of little stalks or things." "Pull them off and count them." they find ten. Then show them the little dust bags at the top, and finally the curiously constructed central column, and the carefully concealed seeds. By this time all are on the alert. Then we resume : the parts in that flower are, outer green envelope, inner coloured envelope, the little stalks with dust bags, and the central column with the seeds. Then you give them all wall-flowers : and they are to write down what they find : and you go round and see what they write down. Probably some one has found six "stalks" inside his wall-flower, and you make him write on the blackboard, for the benefit of the class, the curious discovery, charging them all to note any accidental varieties in future ; and you make them very minutely notice all the structure of the central column. Then you give them all the common pelargonium and treat it similarly ; and by the end of the hour they have learnt one great lesson, the existence of the four floral whorls, though they have yet not heard the name.

Next lesson time they come in looking more in earnest, and you give them single stocks and white alyssum, which they discover to be wonderfully like the wall-flower ; and you have a lot of flowers of vegetable marrow, some of which are being passed round while you draw two of them on the board. The difference is soon discovered ; and you let them guess about the uses of the parts of the flower. The green outer leaves protect it in the bud ; the central organ is for the seeds ; but what is the use of the others ? Then you relate stories of how it was found out what the use of the dust-bags is : how patient Germans lay in the sun all day to wait for the insects coming ; and how the existence of a second rare specimen of some foreign tree was found out in Paris, by its long-widowed spouse in the Jardin des Plantes at last producing perfect seeds. A little talk about bees, and moths, and midges, and such creatures, finding out what they have seen, and your second lecture is over.

In the third lecture you take the garden geranium, and beg them to examine it very closely to see if it is symmetrical. Several will discover the unsymmetrical outer green leaves ; one or two will discover the hollow back of the stem : then the pelargonium, and its more visible unsymmetry ; then the common tropeolum : in each of which they find also the same parts, and count and describe them ; and lastly the tropeolum Canariense, with its grotesque irregularity : and they are startled to find that the curious-looking flower they know so well is constructed on the same type, and is called by the same name ; and by the end of the lesson they have learned something of irregular flowers, as referred to regular types—something of continuity in nature.

So in succession, for I cannot give more detail, you lead them through flowers where the parts cohere, as in the campanula, through plants deficient or odd, through roses, and mignonette, and honey-suckle, and all the simple flowers you can find ; till they thoroughly know the scheme on which a simple flower is made. Then you challenge them to a dandelion or daisy : and each has to write down his ideas. Your one or two geniuses will hit it : some will be all wrong, without a shadow of doubt ; the majority fairly puzzled. You give them no hint of the solution, tell them to lay it aside ; and you give them the little thrift, and challenge them to find its seeds, and how they are attached. This many will do, and pick out the little seed with its long thread of attachment, and then they will go back to their dandelions with the key to their structure ; and find its seeds too, and be charmed to discover the remains of its poor outer green envelope, and even its little dust-bags. How proud they are of the discovery ! they think they have the key of knowledge now. And then you begin a little terminology—calyx and sepals, corolla and petals, stamens and pollen, pistil and stigma,

and so on ; and test their recollection of the forms of all the flowers they have examined. Then you notice the spiral arrangement of leaves on a twig of oak, or thorn, or willow, and the internodes ; and the overlapping of the sepals of the rose and Herb Robert ; the alternance of the parts ; and finally they work out the idea that the floral whorls grow on the stem, and are a sort of depressed spiral of leaves with the internodes suppressed. A few monstrosities and pictures are shown, and the grand generalization is made ; the pistils are re-examined with fresh interest to test the theory ; and all their old knowledge is raked up once more. Then, too, the value of the theory is criticized, and a lesson of caution is learnt.

Then a step forward is made toward classification, by cohesion and adhesion of parts ; and the floral schedule is worked ; and so, step by step, to fruits, and leaves, and stems, and roots, and the wondrous modifications of parts for special uses, as in climbing-plants, and the orchids, which are a grand puzzle till a series of pictures from Darwin step in to explain the use of the parts and plan of the flower. Then some chemistry of the plant is introduced with some experiments, and the functions of all the organs are discussed. And lastly, strict descriptive terms are given, and the rest of the course is occupied by the history and the systems of classification, with constant reference, however, to the other conceptions that the class has gained.

Such a method as this has many advantages. It is thoroughly scientific, however irregular it may seem, and a professor of Botany may smile or shed tears over it for anything I care ; and the knowledge is gained on a sound basis of original observation. Whatever flower a boy sees, after a few lessons, he looks at with interest, as modifying the view of flowers he has attained to. He is tempted by his discoveries : he is on the verge of the unknown, and perpetually transferring to the known : all that he sees finds a place in his theories, and in turn re-acts on them, for his theories are growing. He is fairly committed to the struggle in the vast field of observation, and he learns that the test of a theory is its power of including facts. He learns that he must use his eyes and his reason, and that then he is equipped with all that is necessary for discovering truth. He learns that he is capable of judging of other people's views, and of forming an opinion of his own. He learns that nothing in the plant, however minute, is unimportant ; that he must observe truthfully and carefully ; that he owes only temporary allegiance to the doctrines of his master, and not a perpetual faith. No wonder that Botany, so taught, is interesting : no wonder that M. Demogeot, who visited some English schools last year, at the request of the French Emperor, expressed himself to me as charmed with the vivacity and intelligence of the botanical class of one of my colleagues.

Very possibly a master might make his boys get up a book on Botany, and learn it in the order in which it stands in the book,—cellules and parenchyme, protoplasma and chlorophyll, stems and medullary rays, petioles and phylloides, rhizomes and bulbs, hairs and glands, endosmose and exosmose, secretions and excretions, and so on ; and ultimately come to the flower and fruit ; and possibly a boy of good digestion might survive it and pass a respectable examination in a year's time. But this is not the aim. And even if in this way a greater number of facts could be learned, it would be far inferior to the method of investigation. A master must never forget that his power of teaching facts and principles is far inferior to a willing pupil's power of learning and mastering them. He must inspire his boys, and rely on them : nor will he be disappointed. Those who have in them anything of the naturalist will collect and become acquainted with a large number of species, and follow out the study with care and accuracy ; and the mass, to whom an extensive knowledge of species is a very unimportant matter, but who can appreciate a sound method of investigation and proof, will have gained all that they can gain from botanical teaching. And it must be remembered by those who speak of teaching in science, and yet have never tried it, that a method which would succeed with a few naturalists might utterly fail with the mass.

There is a time in the growth of mind in which there is considerable activity and considerable power of accumulation, but little power of method. And to insist at this stage on rigorous definitions, on sternest formality, is to forget the indications given by nature alike in the growth of the individual and of the world. In a boy's mind is only the dawning twilight of science, which brightens out slowly, if at all, into the perfect day.

A boy leaves the botanical class as a rustic leaves the militia after three months' drill. He has gained something : he is more awake, can listen and learn better, knows what he is about ; in fact, he has been drilled. Year after year I have had new boys and old in my classes, and always have been able to notice that at first the new boys seemed to be at a positive disadvantage in competing with the old, although the subject I was teaching had no reference to Botany.

### III. INTERIOR OF SCHOOL HOUSE, HEATING AND VENTILATING, &c.

(Continued from our Last.)

So important has the subject of ventilation in School-houses become that in England and other countries specific regulations have been adopted by the Government on the subject, which are rigidly enforced. In this brief article we can only just give a few hints (with illustrations) on the subject, and Trustees will in no case omit to provide for this most essential necessity in every schoolhouse. Previously to doing so, we desire to quote from pages 62 to 68, to make some remarks on the construction and arrangements of the School-house.

1. **SIZE.**—Each School house should be sufficiently large to allow every pupil : 1. To sit comfortably at his desk ; 2. To leave it without disturbing any one else ; 3. To see explanations on his lessons, and to recite, without being incommoded or incommoding others ; 4. To breathe a wholesome atmosphere. For the accomplishment of this last, not less than 150 cubic feet of air should be allowed for every pupil.

2. **PLATFORM AND SHELVES.**—The master's platform may be raised about eight inches ; and the end of the room occupied by him should be filled with shelves for a library, and for philosophical apparatus, and any collection of natural curiosities (such as rocks, minerals, plants, shells, &c.) which may be made in the neighbourhood, or obtained from abroad. The books, apparatus and collections should be protected by doors, which may be made perfectly plain and without pannels, so as to be painted black, and serve as black-boards, if necessary. They may be conveniently divided by pilasters into three portions—the middle one for books, the other for apparatus and collections. On one of the pilasters may be a clock ; on the other a barometer and thermometer ; on shelves in the corners, the globes ; and over the library, in the centre, may be the time table. One of the pilasters may form part of the ventilating tube. The space for the platform, shelves, &c., between the front range of desks and the north wall, should be from seven to ten or twelve feet according to the size of the room and the number of pupils contemplated. The sides and front of this space should be furnished with seats, ten or eleven inches wide, for very young pupils when the school is large, and sometimes for classes reciting. By means of a large moveable black-board, this space may be in case of need, divided into two, so that two classes may recite at a time.

3. **ENTRY, &c.**—The entry should be lighted by a window, and furnished with hooks or pins, for the accommodation of hats, bonnets, and cloaks ; and a wood-closet, large enough to contain one or two cords of wood. By making the ceiling of the entry and wood-closet only seven feet high, two commodious rooms for recitation may be formed above them, lighted from the windows over the front door, and accessible by stairs from within the school-room.

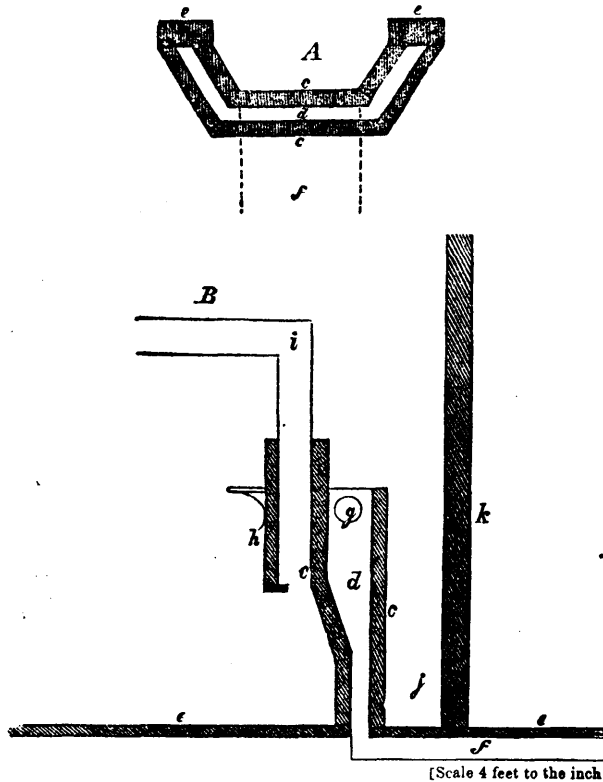
4. **LIGHT.**—The windows should be on the east and west sides of the room, and on the right and left of the pupils. Windows on the north, although they admit too much cold in winter, give an agreeable light. From the south the light is too intense. The eye is often materially and permanently injured by being directly exposed to strong light ; and if the light come from behind, the head and body of the pupil, interposed, throw the book into their shadow. The windows should be set high enough to give an uninterrupted light, and prevent pupils sitting at their desks from seeing persons or objects on the ground without. The windows should be furnished with blinds or curtains, and should be made to open from the top as well as from the bottom ; so that in the summer season when the ventilator will not act, they may supply its place.

5. **HEATING.\***—There are two common modes of warming School-houses in this country—by means of open fire-place and stove. The former is preferable with reference to health, and by a little pains in the construction, may almost equal the stove in economy of fuel—furnishing the room at the same time with an ample supply of fresh, warm air from abroad. In a suitable position, near the door, let a common brick fireplace be built. Let this be enclosed on the back and on each side by a casing of brick, leaving between the fireplace and the casing a space of four or five inches, which will be heated through the back and jambs. Into this place let air be admitted from beneath by a box 24 inches wide by 6 or 8 deep, leading from the external atmosphere by an opening beneath the front door, or at some other convenient place. The brick casing should be continued as high as six or eight inches above the top of the fireplace, where it may open into the room by lateral orifices, to be commanded by iron doors, through which the heated air will enter

\* In regard to heating a School-house, we desire to call attention to Mr. Boxall's advertisement on the subject in the *Journal of Education*, for May and November of last year.—Ed. J. of Ed

the room. (See *e, e, Sec. 8, Fig. 2.*) If these orifices are lower part of the warm air will find its way into the fireplace. The brick chimneys should rise at least two or three feet above the hollow back, and may be surmounted by a flat iron, soap-stone, or brick-top, with an opening for a smoke-pipe, which may thence be conducted to any part of the room, the same as a common stove-pipe.

FIG. 2.  
FIREPLACE.



- A. Horizontal section.
- B. Perpendicular section.
- C. Brick walls, 4 inches thick.
- D. Air space between the walls.
- E. Solid fronts of masonry.
- F. Air box for supply of fresh air, extending beneath the floor to the front door.
- G. Openings on the sides of the fireplace for the heated air to pass into the room.
- H. Front of the fireplace and mantelpiece.
- I. Iron smoke flue, 8 inches diameter.
- J. Space between the fireplace and wall.
- K. Partition wall.
- L. Floor.

[Scale 4 feet to the inch

The smoke-pipe should rise a foot, then pass to one side, and then, over a passage to the opposite extremity of the room, (when its heat having been exhausted) it should ascend perpendicularly and issue above the roof. (See *i* in *Fig. 2.*)

The following are some of the advantages of this double fireplace ;  
 1. The fire, being made against brick, imparts to the apartment no deleterious qualities which are produced by the common iron stove, but gives the pleasant heat of an open fireplace. 2. None of the heat of the fuel will be lost, as the smoke-pipe may be extended far enough to communicate nearly all the heat contained in the smoke. 3. The current of air heated within the hollow back, and constantly pouring into the room, will diffuse an agreeable heat throughout every part. 4. The pressure of the air of the room will be constantly outward, little cold will enter by cracks and windows, and the fireplace will have no tendency to smoke.

If instead of this fireplace, the common stove be adopted, it should be placed above the air-passage, which may be commanded by a valve or register in the floor, so as to admit or exclude air.

6. VENTILATION.—As the best possible ventilator is an open fireplace a room warmed by such a fireplace as that just described may be easily ventilated. If a current of air is constantly pouring in, a current of the same size will rush out wherever it can find an outlet, and with it will carry all the impurities with which the air of an occupied room is always charged. For this an open fireplace may suffice. But when the room is warmed by a common stove, other provisions must be made for its ventilation. In addition to the various modes of ventilation previously described in this work, we may remark, that a most effective ventilator for throwing out foul air is one opening into a tube, which encloses the smoke-flue at the point where it passes through the roof. Warm air naturally rises. If a portion of the smoke-flue be enclosed by a tin tube, it will warm the air within this tube, and give it a tendency to rise. If then a wooden tube, opening near the floor, be made to communicate, by its upper extremity, with the tin tube, an upward

Fig. 5.

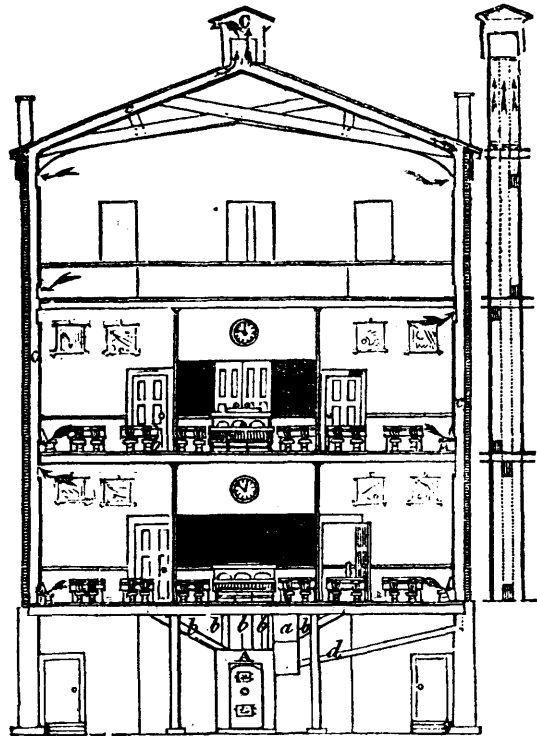


FIG. 4.—SECTION OF SCHOOL HOUSE.

- F. Hot air furnace.
- a. Cold air ducts.
- bbb. Hot air ducts to the registry in the floors.
- c. Foul air ducts—the passage into and through, which is indicated by an arrow.
- d. Smoke flue.

current will take place in it, which will always act whenever the smoke-flue is warm.

As heating by hot air is more generally adopted, we give in *Fig. 4* a transverse section of two storics of a grammar school-house thus heated, and exhibiting the interior arrangements, maps, master's desk, clocks, black-board, seats, hot air and ventilating apparatus, &c. The flues for hot air to the upper floor should be conveyed in the flues and enclosed in the partition.

*Figure 5* gives a lateral section of the ventiducts or foul air flues, showing the manner in which the flues are packed together, and carried up separately from the floor of each room until they discharge into the common ejector at the apex of the roof.

SYMPTOMS OF BAD AIR IN A SCHOOL ROOM.—Every man and woman, who received any portion of their early education in the common school, can testify to the narrow dimensions, and low ceiling of the school-rooms, and to the discomfort arising from the close, stagnant, offensive atmosphere, which they were obliged to breathe. Who does not remember the comparative freshness and vigor of mind and body with which the morning's study and recitations were begun, and the languor and weariness of body, the confusion of mind, the dry skin, the flushed cheek, the aching head, the sickening sensations, the unnatural demand for drink, the thousand excuses to get out of doors, which came along in succession as the day advanced, and especially in a winter's afternoon, when the over-heated and unrenewed atmosphere had become obvious to every sense? These were nature's signals of distress, and who can forget the delicious sensations with which her balmy breath when admitted on the occasional opening of the door, would visit the brow and face, and be felt all along the revitalized blood, or the newness of life with which nerve, muscles and mind were endued by free exercise in the open air at the recess, and the close of the school? Let any one who is sceptical on this point visit the school of his own section, where his own children perhaps are condemned to a shorter allowance of pure air than the criminals of the State, and he cannot fail to see in the pale and wearied countenances of the pupils, the languor and uneasiness manifested, especially by the younger children, and exhaustion and irritability of the teacher, a demonstration that the atmosphere of the room is no longer such as the comfort, health and cheerful labour of both teacher and pupils require.\*

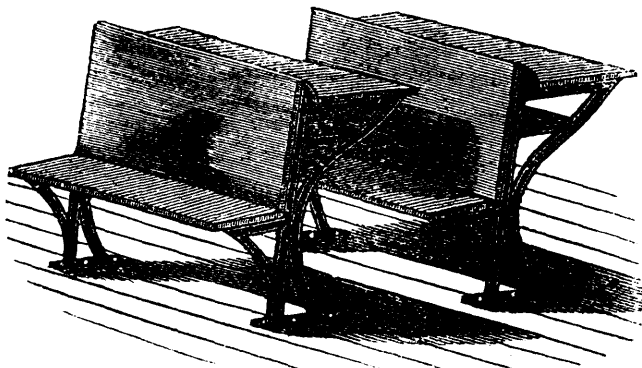
\*In connection with this subject, we would call attention to the valuable apparatus for ventilation in School-houses, recently patented by a Company in Canada. Full information given on application, &c., J. S. Withers, Esq., Secretary to the Company, Montreal.—*Ed. J. of Ed.*

IV. SCHOOL ROOM SEATS AND DESKS.

The seats and desks constitute the main portion of the furniture of the room, and upon their form, construction and arrangement will depend much of the comfort of the pupils and the order of the school.

Certain conclusions have been arrived at with reference to seats and desks, by the experience of well conducted schools, which may now be admitted as settled principles applicable to all schools. These are: 1. That every pupil, whether old or young, should have a desk as well as a seat; 2. That both should be made as comfortable and as well adapted to their object as possible; that the seats and desks should be so arranged as to permit each pupil to pass to and fro from his own, without disturbing any other in so doing. To these may be added: 4. That the more neatly and substantially the seats and desks are made at first, the longer they will last, and the greater will be the saving to the district in the end.

The desk is as necessary for young as for older pupils, for several reasons. Children should not be long confined to one attitude—frequent change of position seeming to be a want of their nature. After sitting upright in their seats for some time, they soon lean on the back of the chair or bench; but this posture before long also becomes tiresome, and they will be observed to lean sideways upon each other. At this time it is that restlessness and disorder begin to manifest themselves amongst the younger pupils, and at this time the forward support afforded by the desk, both for the person and the book, would form a relief to the scholars and tend to the quiet of the school. Moreover, it is now admitted by all good teachers that the slate and pencil should be put into the hands of every pupil the very first day of his entrance into school; and this renders a desk indispensable, if for no other reason.



SEATS AND DESKS FOR PRIMARY PUPILS.—FIG. 1.

Various kinds are now in use for primary pupils; all seeking to unite comfort with neatness and durability. The combined seat and desk represented by Fig. 1., seems to comprise all these requisites. The legs or stanchions are of cast iron and the remainder of wood. The seat of one pair of pupils is connected with the desk of the pair behind them, but the whole being firmly secured to the floor, will not be liable to shake, so as to cause disturbance to either. Properly constructed and handsomely painted, this would form a neat as well as comfortable article of furniture.

Each pupil should be provided with a seat and desk properly adapted to each other, as to height and distance, the front of the latter constituting the back or support of the former—as shown in Fig. 3. The desk should slope about 2½ inches in 16, as indicated

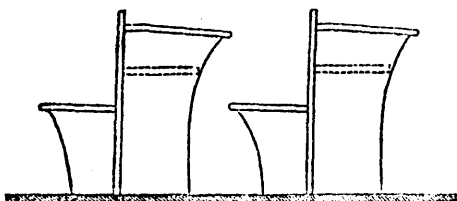


FIG. 3.—SECTION OF SEAT AND DESK.

in the same Figure. The seats should vary in height from 9½ inches to 17 inches, for children of different sizes and ages—the youngest occupying the seats nearest the platform. The seat should be so made, that the feet of every child, when properly seated, can rest on the floor, and the upper and lower part of the leg form a right angle at the knee; and the back of the seat, whether separated from or forming part of the adjoining desk behind, should recline to correspond with

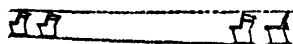
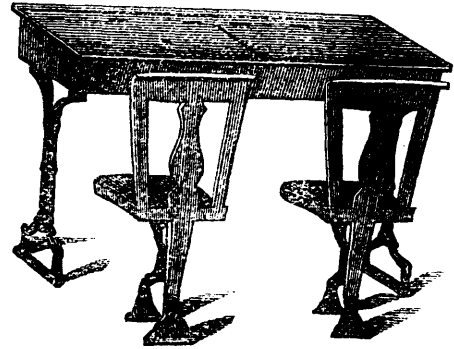


FIG. 4.—SECTION SHOWING VARIATION IN HEIGHT.

the natural curves of the spine and the shoulders. The seat should be made as far as possible like a convenient chair.

Though the double seat in connection with the double desk is yet used in some schools of the highest grade, yet the inclination is general in favour of the single seat. The one now presented, Fig. 5,



GRAMMAR SCHOOL SEATS AND DESKS.—FIG. 5.

seems to be desirable in every respect except that the chair does not revolve; some teachers preferring the stationary or unrevolving seat. It shows a seat and desk differing much in form yet the same in principle as the last, except that the desk has an enclosed box, covered with a hinged lid, for each pupil. Some teachers prefer this arrangement, but the majority do not favour it, as the raising of the lid interposes a screen between the teacher and pupil, behind which acts may be performed which would not be openly attempted; while the opening and shutting of the lids cannot but create noise. The desk with a stationary lid, a shelf beneath, and a slit in the back for a slate, seems to meet the views of the greater number of teachers.

RELATIVE SIZES OF THE SEATS AND DESKS.—The desks and seats for pupils should be of different dimensions. We think it most desirable for two to sit together; and each desk for two may be 3½ or 4 feet long. The younger pupils being placed nearest the master's desk, the front ranges of desks may be 13 inches wide, the next 14, the next 15, and the most remote 16 inches, with the height respectively of 24, 25, 26 and 27 inches. The seats should vary in like manner—those of the smallest class should be 10½, the third 11, the fourth or largest class 11½ or 12 inches wide; and being in height, 13, 14, 15 and 16 inches respectively. All the edges and corners should be carefully rounded.

The desk for a single pupil should be, at least, two feet long (2½ is better) by 18 inches wide, with a shelf beneath—as indicated by the dotted lines in Fig. 3—for books, and a narrow deep opening between the back of the seat in front of the desk itself to receive a slate—as at b in Fig. 10. The upper surface of the desk except three inches of the part nearest the seat in front, should slope one inch in a foot, and the edge should be in the same perpendicular line with the front of the seat. The three inches of the level portion of the surface of the desk should have a groove running along the line of the slope, a, Fig. 11, to prevent pencils and pens from rolling off, and an opening at c, (same Fig.) to receive an inkstand, which should be covered with a metallic lid. The end pieces or supporters of the desk should be so made as to interfere as little as possible with sweeping.



FIG. 10.—TOP OF DESK.

The following table is said to show pretty accurately the proportion which should exist between the heights of seats and desks for the various sizes of pupils; the corresponding width and length of the desks; and the proper distances between desks of the same size in the same row, so as to admit the chair between them.

Height of seat.	Height of front of desk.	Width of desk.	Length of desk per pupil.	Chair space between desks.
10 inches.	21 inches.	12 inches.	17 inches.	20 inches.
12 "	23 "	13 "	19 "	22 "
14 "	25 "	14 "	21 "	24 "
16 "	27 "	15 "	21 "	26 "

THE INK-WELL.—The ink stand or well is an indispensable accompaniment of the desk, and, if not a proper form or properly secured, often gives much trouble. A loose ink-stand or bottle on a small desk, the greater part of whose lid is considerably inclined, is liable to be upset or thrown off. A wide-mouthed glass cup with a rim to it, and let into the corner of the desk, is secured from fall-



ing or upsetting, but receives the dust of the room to the injury of the ink. Hence one let into the desk, with a hinged lid or cover, so arranged as to exclude the dust and yet not to be in the way of books, slates, &c. when closed, seems to be the best and cheapest expedient that can be adopted.



Fig. 13.

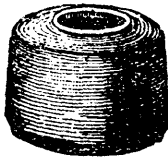


Fig. 14.

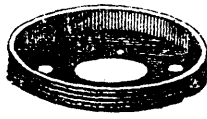


Fig. 15.

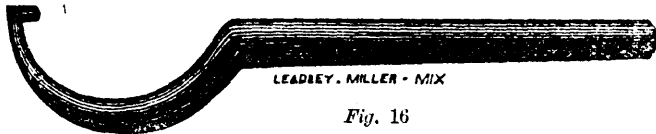


Fig. 16

*Explanation.*—The malleable iron-plate (*fig. 15*), with a screw-thread on its rim, is held securely to the desk or table by two common screws. On this is placed the glass cup (*fig. 14*) to contain the ink. The cap (*fig. 13*) of Japanned iron, surrounds the glass cup, and is screwed on to the base-plate, or removed at pleasure, by the lever (*fig. 16*.)

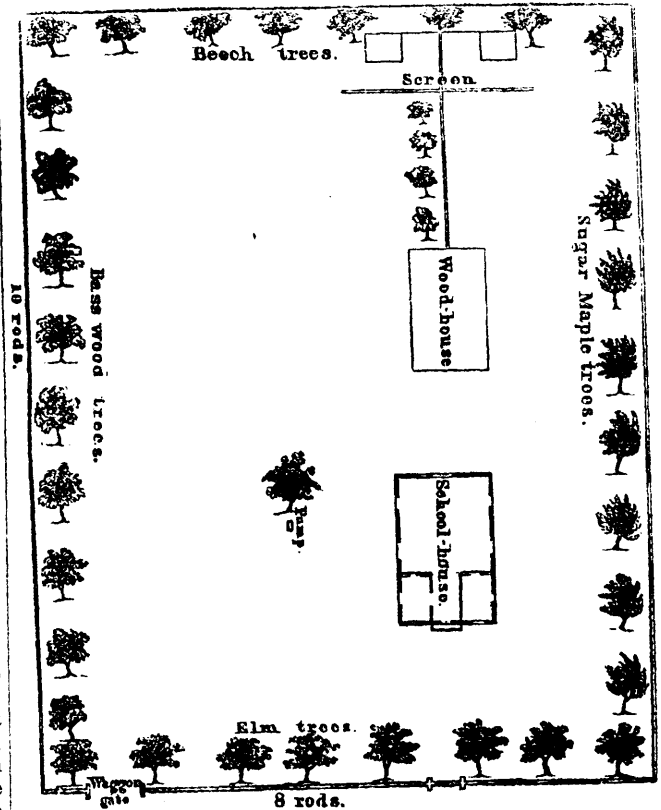
This ink-stand is said to combine the following excellencies : 1. It furnishes perfect security against injury to books and furniture, occasioned by the accidental spilling or careless use of ink. 2. In the school-room, it places the ink appropriated to the use of the pupils wholly within the control of the teacher—the removal of the cap (*fig. 12*) by ordinary means being impossible. 3. It protects the ink from dust, prevents evaporation, and affords better security against freezing than any other inkstand in use. 4. While it combines beauty of design with the highest degree of durability, the price at which it can be afforded is but little in advance of the cost of ink-stands ordinary used in the school-room. It is asserted by experienced teachers, that the amount saved in the prevention of injury and waste, will pay for its introduction in a single term. These and other ink-stands, are for sale at the Education Depository, Toronto.

V. PLAN OF THE SCHOOL SITE, TREES, SHRUBBERIES, &c.

The size of school lots must, in some measure, be determined by the facility with which land in desirable situations can be obtained. In country places, and in many towns and villages, school lots of at least half or quarter of an acre each, can be easily procured. But in all cases, whether the grounds be large or small, they ought to be laid out and prepared with a view to both convenience and taste. Every thing around, as well as within a school house should be attractive to the eye and improving to the taste of the pupils. It is in connexion with the school house that they receive many of their earliest and most durable impressions. Those impressions should be on the side of neatness, virtue and cheerfulness. This is not likely to be the case where the site of the school house is in a noisy, dirty thoroughfare of the city, or in a low, damp, or bleak, unsheltered place in the country; nor if all attraction to comfort and decency be neglected in the internal furniture and out-door arrangements of the house itself. How different will be the associations, impressions, and feelings of a pupil where the house and grounds are provided as represented in the above engraving, from those of a pupil attending school where the house is dirty and comfortless, where the play grounds are the highway or the street, and where indecencies are almost imposed as a necessity from the absence of the requisite provision against them.

In the engraving, it will be observed that the situation is represented as retired, dry, and pleasant; that the ground is made smooth, and sown with grass, planted with shady trees, tastefully arranged in groups, and round the sides, and protected by a neat and substantial inclosure. In the rear of the building the yard is divided by a high and close fence each portion appropriately fitted up and provided with suitable conveniences, the one assigned for the exclusive use of the boys, and the other for that of the girls. The entire premises exhibit an aspect of seclusion, neatness, order, propriety and cheerfulness, and the absence of everything calculated to defile the mind, or wound the most sensitive modesty.

SHADE TREES, SHRUBBERY, AND FLOWERS.—School-grounds



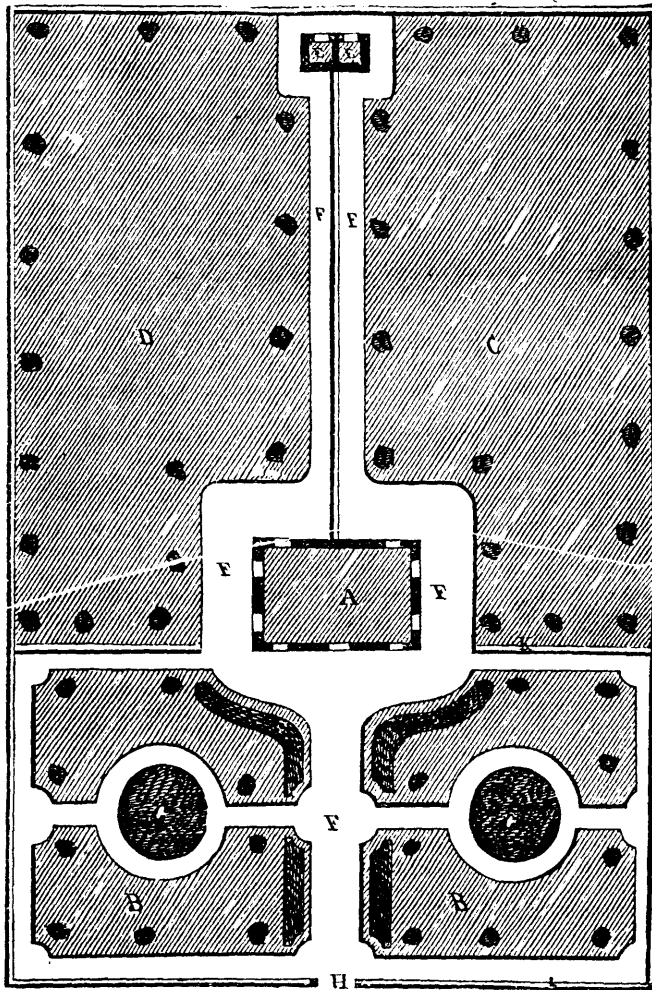
Highway.

PLAN OF GROUNDS, ETC.—FIG. II

should be plentifully supplied with shade trees. If otherwise suitable, in locating a school-house, a spot should be chosen upon which some large forest trees are already standing, or the border of a wood might be selected which could be easily thinned out. Generations must live and die before trees newly planted will assume that stateliness and beauty possessed by our ancient forest trees. Who can gaze upon the noble trunk, the wide spreading branches, and the deep, dense foliage of an old oak, and not admire its beauty and court its shade? If possible, some such should be embraced in every school yard.

But if the grounds are to be planted with shade trees, and it be desirable to select such as are of rapid growth, the maple, locust and poplar, are perhaps the best; with less rapidity of growth, but of equal beauty, the oak, sycamore, ash and beech might be chosen; and of evergreens, it is scarcely necessary to name the pine, cedar and hemlock. It will be observed that all those named are indigenous to our Canadian forests, and if the school-grounds were sufficiently large, they might be planted with a variety of all our most conspicuous and useful trees; that while enjoying their shade, the inquiring pupil might learn their names, classes and uses. The same principle should be applied in selecting shrubbery and flowers; and while their cultivation would refine their taste, the pupils might learn useful practical lessons in the study of botany. Though Canadian trees and Canadian flowers should be preferred, on account of their real merit and the facility with which they can be obtained, no unjust discrimination should prohibit those which are exotic; but these are so numerous and possess so many varied attractions, that the whole subject is left to the taste of intelligent Trustees and Teachers. All persons feel most interested in what they have themselves planned and executed; and after these general remarks, it is thought best, for this reason, to leave in the same hands, also, the details of shaping flower beds and arranging shrub-

bery. The only additional remark which it is thought necessary to make, is that no fruit or nut trees of any kind should be admitted in the grounds; first, because the fruit would be seldom suffered to ripen, and green fruit, if eaten, is injurious to health; and second, because the trees would be broken and destroyed in efforts to obtain the fruit.



PLAN OF GROUNDS, ETC.—FIG. III.

- |                                     |                     |
|-------------------------------------|---------------------|
| A. School-house.                    | FF. Walks.          |
| BB. Yard for shrubbery and flowers. | GG. Flower plots,   |
| C. Boys' play-ground.               | H. Gate.            |
| D. Girls' play-ground.              | L. Outside fences.  |
| EE. Privies,                        | K. Dividing fences. |

The artist in this plan has omitted to represent the extension of the dividing fence in the rear of the privy. Without this the design is incomplete.

This plan is intended to represent grounds of half an acre; in parallelograms of one-third greater in length than in breadth.

VI. SIMPLE GYMNASTICS FOR BOYS.

MEANS OF EXERCISE.—In the country school sections, where the play-ground is extensive, and suitable for the use of bats, balls, hoops, stilts, 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.

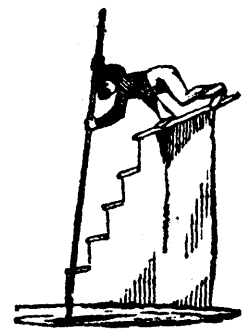
Amongst boys, running and leaping are favourite pastimes, and both are conducive to health. For running, no other preparation of the ground is needed than that there shall be space enough, and that the surface be sufficiently level to be safe.

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.

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



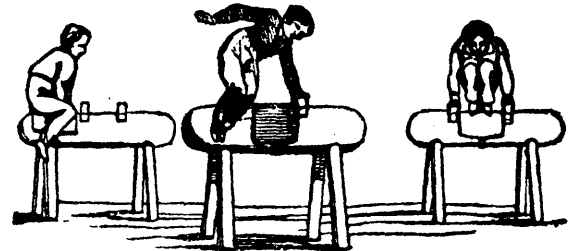
HIGH LEAP.



POLE LEAP.

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.

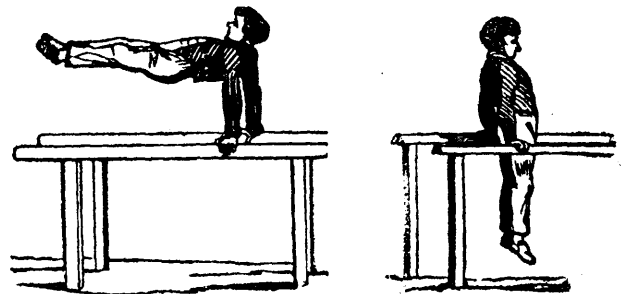
Vaulting is another kind of exercise which strengthens the muscles of both upper and lower limbs. The power to swing oneself



VAULTING.

over a 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 differ-



PARALLEL BARS.

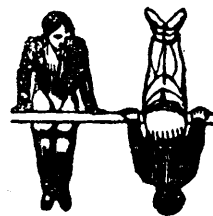
PARALLEL BARS.

ent heights and sizes, they may be used by pupils of all ages. They possess the advantage of being perfectly free from the possibility of accident to the smallest boy who uses them; and should therefore be among the first means for exercise introduced upon the play-ground.

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

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



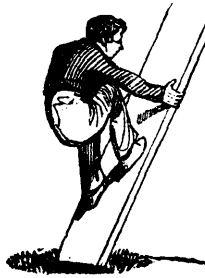
HORIZONTAL BAR.

expense, and be found, in common with other similar arrangements, to increase love of school, by rendering it attractive. No gymnastic apparatus combines greater variety of healthful and



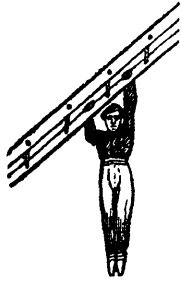


BALANCING BAR.

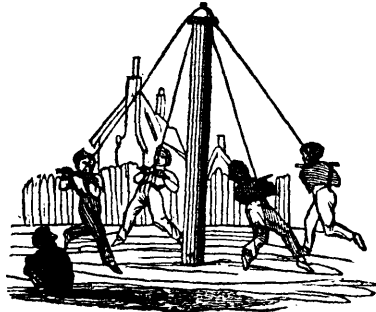


INCLINED BOARD.

pleasant exercise than the rotary or flying swing. It combines running, leaping, and climbing, with the addition of engaging several in the same exercise at the same time. It also has the ad-



THE LADDER.



ROTARY OR FLYING SWING.

vantage, which few of the exercises which have been enumerated possess, of being equally adapted to females.

#### V. CALISTHENICS FOR GIRLS.

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.

The long back-board is also well calculated to expand the chest and give litheness 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



DUMB-BELL.



TRIANGLE.



BACKBOARD.

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.

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 Section, 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

\* As an encouragement to teachers, and as a proof that this suggestion can be carried out, it may be stated that during the twenty-three years the Normal and Model Schools for this Province have been in existence, during that time neither cut nor defacement can be perceived on any of the seats or desks of those institutions.—Ed. J. of E.

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.

## 2. HANGING BASKETS FOR THE SCHOOL-ROOM.

There is nothing prettier or more graceful than a nice hanging basket. Hundreds of people attempt them, but fail, because they do not know how to manage them. They are very susceptible of neglect, and will repay any extra care taken of them.

Select a deep basket. Some are so shallow that they dry up too quickly and do not hold earth enough to sustain a large plant. If possible, procure the chains and ring that are usually furnished at the seed stores with the basket, as they are much neater than strings or wires. Do not use strings if you can procure copper wire. The strings break, and you suffer a total loss. If you wish to hang your basket near the window, use a bird-hook, as it keeps the plant away from the wall or window. Make a hook of strong wire, bent in the form of an S, to connect the wires or chains on the basket to the cord or wire attached to the bird-hook above.

With this arrangement the plant can be taken down or turned without climbing up to the bird-hook every time it is necessary to attend to it.

Some of the best plants for hanging baskets are the English and German Ivy, Ivy Geranium, the old Strawberry Geranium, dwarf Nasturtium, Convolvulus M. Numbergia, Lobelia Pax, Lobelia Spee, and many others within the reach of all. I prefer to have but one kind of plant in a basket, and that of a drooping or pendulous nature; but many persons put in with the drooping plants others of an upright growth, such as Tom Thumb Geranium, Bryonia, Ferns, Lidum, Colens, etc.

In potting, use a mixture of old peat, decayed leaves, or well-rotted sod, and sand, well mixed. Fill not quite even full, so that the water will not run over the side. Some plants can be cut back to make them throw out more shoots. Pick off any dead leaves; water regularly; give plenty of air; look out for insects; turn frequently, so as to present all sides to the sun.—*B. R. Cutter in Illinois Teacher.*

## 3. AXIOMS IN VENTILATION IN SCHOOLS.

The following propositions may be considered as *axioms* in the important subject of ventilation.

1. There must be an opening into each room large enough to admit a sufficient supply of fresh, pure air.

2. In cold weather this air must be warmed before it is brought into the room.

3. There must be an opening for the escape of foul air as *large* as that which admits the fresh air.

4. This last opening must be near the floor.

5. The escape of foul air will be greatly accelerated if the flue into which it is discharged be heated.

The first of these seems self-evident; yet, in almost every house, these flues are totally inadequate. In many instances no provision whatever is made for this important prerequisite. The fresh air is expected to find its way under doors, around windows, and through the floors. It is a great blessing to our race that it is so accommodating as not to disappoint this expectation, but seeks an ingress through every possible crevice. If it did not, most of our churches and public halls would be as bad as the Avondale mine.

From a neglect of the second axiom, people are led to cry 'humbug' against all systems of ventilation. The man who sits in a crowded audience until he is well-nigh smothered and then has a window opened immediately above him, whereby a column of freezing air is projected upon his head and shoulders, from the effects of which he does not recover for months, is very apt to feel that ventilation is a nuisance. It is extremely hard to convince persons that you are doing them a favor for which they ought to be thankful, when you throw a layer of cold air upon the floor, from which they not only suffer severe pain from cold feet, but take colds which last them for weeks, even though you call it by the beautiful name of ventilation. They prefer not to be ventilated on such terms.

It is impossible to pour water into a jug already full, unless there be a way provided for the water to escape. It is as just impossible to force fresh air into a room already full of foul air, unless the latter can escape. For two reasons the place of exit should be near the floor; 1st, the most impure air is at the floor; 2nd, if it

be allowed to escape at or near the ceiling, the heat will also escape, and you can not heat the room in a proper manner. Have you ever noticed the old-fashioned registers in the ceiling or near to it? Of course you have in public halls and even churches. It is probable that you have also noticed the pains that all good janitors take to *keep those registers carefully closed*. The story is told of a good sexton who was exhibiting the beauties of a new church, that when asked for the arrangements for ventilation, he triumphantly pointed to a large register in the centre of the ceiling. When asked if this was kept open at all seasons of the year, he replied that it was. A closer examination revealed the fact that the register existed only in the fresco-painting of the ceiling.

Openings near the ceiling are excellent for one purpose. When the room is too hot, they serve an excellent purpose in cooling it. For the purpose of ventilation they are useless, because all the heat will escape, and it will be impossible to heat the room while the flues are open. When provision is made for the escape of foul air near the floor, it is well to have the outlets in different parts of the room. Unpleasant currents are thus avoided.

Finally, if the waste heat from the stove or furnace can be used to heat the flue into which the impure air discharges, the ventilation will be much more perfect. It should always be remembered that flues do not of themselves produce currents. These are always caused by a change of temperature. This is beautifully illustrated in building a common fire on a cold morning. When it is first started, the draft is slight; but when the chimney becomes heated, the stove or fire 'roars.' We may, in a future article, give some methods of securing the proper ventilation and heating of school-rooms.—*E. A. Gastman, in Illinois Teacher.*

## 4. HEALTH OF SCHOOL CHILDREN.—IMPORTANT OPINION.

The Medical College of Middlesex, Massachusetts, having for a long time considered the influence of public schools on the health of children, authorize the publication of the following facts as the opinions of its members:—

1. No child should be allowed to attend school before the beginning of his sixth year.

2. The duration of daily attendance—including the time given to recess and physical exercise—should not exceed four and a half hours for the primary schools; five and a half for other schools.

3. There should be no study required out of school, unless at high schools, and this should not exceed one hour.

4. Recess time should be devoted to play outside of the school room—unless during stormy weather—and as this time rightfully belongs to the pupils, they should not be deprived of it except for serious offences; and those who are not deprived of it should not be allowed to spend it in study; and no child should ever be confined to the school room during an entire session. The minimum of recess time should be fifteen minutes each session, and in primary schools there should be more than one recess in each session.

5. Physical exercise should be used in school, to prevent nervous and muscular fatigue, and to relieve monotony, but not as muscular training. It should be practised by both teacher and children in every hour not broken by recess, and should be timed by music. In primary schools, every half hour should be broken by exercise, recess or singing.

6. Ventilation should be amply provided for by other means than by open windows, though these should be used in addition to special means during recess and exercise time.

7. Lessons should be scrupulously apportioned to the average capacity of the pupils; and, in primary schools, the slate should be used more and the books less, and the instruction should be given as much as possible on the principles of "Object Teaching."

## I. Biographical Sketches.

### SIR DE LACY EVANS, G.C.B.

The general was to a very great extent a self-made man; at all events, it was rather by his talents and by his force of character, than by interest that he rose to the high position which he held in his profession. Like so many of our most distinguished officers, he was an Irishman by extraction and birth. The son of the late Mr. John Evans, of Milltown, he was born at Moig, Ireland, in the year 1787, and received his early education at the Woolwich Academy. He obtained a commission in the army in 1806 or 1807, and in the latter year proceeded to India, where we find him for three years taking part in the operations against Ameer Khan and the

Pindarees. He was also at the capture of the Mauritius. In 1810, he joined the army under Wellington in the Peninsula. He accompanied the army in its retreat from Burgos, and took part in nearly all the principal battles in Spain and Portugal. When Wellington was about to enter France, De Lacy Evans was sent forward by Sir Geo. Murray to survey the passes of the Pyrenees. This work he executed with such ability as to obtain staff employ. After the advance into France, he was present at the battle of Toulouse, where he had a horse shot under him. He also gained great distinction by volunteering for storming parties, and all similar enterprises where honour was to be gained by deeds of personal bravery. He received in rapid succession his company, majority, and lieutenant-colonelcy for services rendered against the enemy.

Having quitted the army of Wellington, he was in 1814 ordered on active service to North America, in order to take part in the war against the United States. At the battle of Bladensburg he had his horse shot under him; at Washington, with a very small force of infantry, he forced the Congress house, and he also took part in the attack on Baltimore, and in the assault on New Orleans. Returning to Europe in the spring of 1815, he was in time to join the army in Flanders under Wellington, and was engaged at Quatre Bras and Waterloo, where he had two horses shot under him. He advanced with the army to Paris, and remained on the staff of the Duke of Wellington during the occupation.

With the peace which followed, De Lacy Evans entered the House of Commons for a short time. In 1835, the Queen Regent of Spain solicited leave from the British Government to raise an auxiliary force in this country, in order to support her cause and that of her daughter, Isabella, against her absolutist rival, Don Carlos. Her request was granted; a force of 10,000 men was raised and sent to Spain, under the name of the "British Legion," and the command of this force was accepted by Col. Evans. The policy of raising a British Legion at all, and the conduct of the British Legion, were severely criticized at the time both in and out of Parliament; but Col. Evans, on returning home in 1837, so thoroughly vindicated his conduct from all accusations that he was shortly afterwards nominated a Knight Commander of the Order of the Bath in recognition of his services in Spain. He afterwards sat in Parliament until 1865, when he retired from political life.

In 1846, Sir De Lacy Evans attained the rank of Major-General, and on the breaking out of the Russian war in 1854, he was appointed to the command of the Second Division of the Eastern Army, with the rank of Lieutenant-General. At the battle of the Alma his bravery was conspicuous and before Sebastopol, and was mentioned by Lord Raglan in the highest terms in his despatches. He again showed his worth as a man and as a general at the battle of Inkerman. When on that morning the Russians attacked the position occupied by the Second Division, General Evans was so worn out by illness and fatigue that he had gone on board a vessel at Balaklava, leaving General Pennefather to command the division. On hearing that fighting was going on, however, the general rose from his sick bed and joined his troops, not to take the honour of the day from Pennefather, but to aid him with his counsel. His noble conduct on this occasion was highly praised by the Commander-in-Chief, and again in the despatch in which the Minister of War conveyed Her Majesty's thanks to the Army of the East. In the following February, immediately on his arrival in England invalided, General Evans received in person, in his place in St. Stephen's, the thanks of the House of Commons "for his distinguished services in the Crimea," the vote being conveyed to him in an admirable speech from the Speaker, enumerating the many occasions on which those services had been rendered. In the same year he was promoted to be a Knight Grand Cross of the Order of the Bath, and created an honorary D.C.L. by the University of Oxford, and, in 1856, a Grand Officer of the Legion of Honour.

## 2. THE REV. DR. MATHIESON.

The Rev. Dr. Mathieson, who was, we believe, the oldest Presbyterian Minister in Canada, died yesterday morning. He was 75 years of age, having been born in Rinton, Dumbartonshire, Scotland, about the year 1796, licensed to preach 1823, and ordained to St. Andrew's Church, Montreal in 1826. He received his education at the University of Glasgow, and was a man of ability and culture. He was the judicious and courteous leader of the Scottish Kirk in Canada, both before and after the disruption, until age of late years weakened his powers. Closely associated with the history of Montreal during more than forty years, his removal will be a noteworthy event in that city, as well as throughout the Church of Scotland here and elsewhere.—*Globe*.

## 3. GEORGE MALLOCH, Esq.

The death of His Honor George Malloch, late County Judge of

Leeds and Grenville, calls to mind the career of the Scotch family to which he belonged, since its members emigrated to Upper Canada. Edward Malloch, a hardy intelligent Scotchman, came to this country about the year 1817, having with him his wife and three sons, George, Edward and John. He took up land in the County of Lanark, and for two or three years his three sons—the eldest being then about thirteen years of age—assisted him in making a clearance and erecting a homestead. George and Edward struck out for themselves—the latter going into the shop of the late Paul Glassford, Brockville, the former after a year or two's preliminary school teaching, entered the law office of the late Mr. Justice Sherwood, and, about 1823, he became a partner of Mr. Sherwood, and, on the latter being elevated to the Queen's Bench Judgeship, he continued the business until 1836, when he was made Judge of the Bathurst District, and in 1841 of the united counties of Leeds and Grenville. Feeling coming infirmities last year he resigned. He died possessor of extensive wealth, accumulated by a steady application to business before he obtained any official appointment, and he leaves a large family and an extensive circle of friends to lament his loss. Number two, Edward Malloch, was a leading merchant in Richmond and Ottawa for a number of years, and for successive elections represented the County of Carleton in the old parliament of Upper Canada and United Canada. He died some four years ago, leaving a large property to be divided among a large family of children. This was number two of the Scotch boys. The third boy, John G. Malloch, has been Judge of the County of Lanark for twenty-eight years, and has a large family also, and may it be a long time ere his beautiful Victoria farm, near the town of Perth, and his other property comes under the statute of distributions before the surrogate. Thus, we see, Canada is not an ungenial country to live in, for Scotch boys. The old father, Edward Malloch, was a good specimen of the hardy pioneers. He was a sterling, honest, genial type of the lowlander, and was honored and loved for his many virtues. Judge Malloch was born in Perth, Scotland, in 1797.

## 4. MR. WILLIAM MCCALLUM.

An old veteran named William McCallum was buried at Hamilton last Monday. He had reached the age of 93 years, and was for nearly forty years a resident of Hamilton. He was one of the few remaining veterans of the naval wars which marked the close of the last and the beginning of the present century. He fought at the battle of Trafalgar in one of the advanced ships of Collingwood's column, and was wounded during the heat of the engagement; he was one of the ill-starred Walcheren expedition, and was present with the naval brigade at the siege of Badajoz. He served many years in the service of the East India Company, and took part in many battles.—*Spectator*.

## 5. GEORGE DUCK, ESQ.

Mr. Duck was born at Milksham, Wiltshire, England, in 1790. He emigrated to Canada, with his family in 1833, and settled in the Township of Howard, in the County of Kent, where he continued to reside up to the time of his death. During his residence here, he has filled many offices of trust, honor, and emolument, giving general satisfaction alike to patron and an exacting public. In the trying times of 1837 and '38 he was found at his post with his brothers in arms, rallying around the flag that had in no degree lost its lustre by a trans-Atlantic voyage of a few thousand miles. He filled the office of Sergeant-Major in the renowned St. Thomas Troop of Cavalry, whose deeds of valor are household words. In the Fall of 1838 he was appointed Captain and Adjutant of the First Battalion of Kent Volunteers, which position he continued to hold until they were disbanded in 1847, when he was promoted to the rank of Major of the 1st Kent Militia, and in 1850 was gazetted Lieut.-Col. of the same Battalion. In 1845 he received the appointment of Preventive Officer of Customs, and in 1857 Collector at the Port of Rond Eau. As a Municipal Officer he was energetic, ever keeping pace with the requirements attendant thereon. Well versed in the laws and transactions of the day, he was a safe counsellor, generous and affable, he was the poor settlers' friend, ever ready to minister to the wants of the less favored. Of the Council of the Western District deceased was for many years a very prominent member, which is fully attested by the fact of his being the first Warden for the County of Kent. His transactions in the office of Justice of the Peace extended over a long period of years, and were always marked with wisdom, mildness, and compassion, free from any semblance of malevolence, thus rendering his judgments alike respected by all parties. As Clerk of the Second Division Court, he officiated for a very long time, until declining health suggested the propriety of relaxation, to which he yielded but a few years since.—*Chatham Planet*.

II. Monthly Report on Meteorology of the Province of Ontario.

I. ABSTRACT OF MONTHLY METEOROLOGICAL RESULTS, compiled from the Returns of the daily observations at ten Grammar School Stations, for JANUARY, 1870.

OBSERVERS:—Barrie—H. B. Spotton, Esq., M.A.; Belleville—A. Burdon, Esq.; Cornwall—J. L. Bradbury, Esq., M.A.; Goderich—James Preston, Esq., B.A.; Hamilton—A. Macallum, Esq., M.A.; Pembroke—J. W. Connor, Esq., B.A.; Peterborough—Ivan O'Beirne, Esq.; Simcoe—James J. Wadsworth, Esq., M.A.; Stratford—C. J. Macgregor, Esq., M.A.; Windsor—J. Johnston, Esq., B.A.

Table with columns for STATION, BAROMETER AT TEMPERATURE OF 32° FAHRENHEIT, TEMPERATURE OF THE AIR, and TENSION OF VAPOUR. Rows include Barrie, Belleville, Cornwall, Goderich, Hamilton, Pembroke, Peterborough, Simcoe, Stratford, and Windsor.

Approximation. d On Lake Simcoe e Near Lake Ontario (on Bay of Quinte). f On St. Lawrence. g On Lake Huron. h On Lake Ontario. i On the Ottawa River. j Close to Lake Erie. m On the Detroit River. k Inland Towns.

Table with columns for STATION, HUMIDITY OF AIR, WINDS, NUMBER OF OBSERVATIONS, ESTIMATED VELOCITY OF WIND, AMOUNT OF CLOUDINESS, RAIN, SNOW, and AURORAS. Rows include Barrie, Belleville, Cornwall, Goderich, Hamilton, Pembroke, Peterborough, Simcoe, Stratford, and Windsor.

a Where the clouds have contrary motions, the higher current is entered here. b Velocity is estimated, 0 denoting calm or light air; 10 denoting very heavy hurricane. c An observation at 9 P.M., Sunday, 2nd, showed 28.085 at Goderich. d An observation at 6 P.M., Sunday, 2nd, showed 27.477 at Stratford.

REMARKS.

Barrie.—On 8th, snow in woods near this station reported to be 15th—17th, 22nd, 23rd. Month remarkable for great fluctuations of weather has been mild and very changeable during month. Thaws 3 feet 4 inches in depth at this date. 14th—15th, remarkably sudden the barometer, a singular depression occurring on Sunday, 2nd. Change of temperature: on 14th, the three observations showed: -7° F. CORNWALL.—Wind storm on 3rd. Snow, 3rd, 4th, 6th, 8th, 12th, 24th, inclusive. Ice on the Maitland River broke up and came down -1.0, 6.5; mean, -0° 7.3; on 15th, 3rd, 3rd, 8; mean, 36° 47. 13th, 15th, 17th, 25th. GODERICH.—Wind storms, 2nd, 8th, 9th, 15th, 17th, 18th. Fog, and driving several vessels partly upon the wharf. This movement Wind storms, 8th, 16th, 17th. Snow, 1st—3rd, 8th, 10th—16th, 20th, 12th. Snow, 1st—4th, 6th—10th, 13th, 20th, 23rd, 25th, 26th, 28th. Rain, 2nd, 12th, 15th, 17th, 22nd. Snow, 30th, 31st. BELLEVILLE.—Wind storms, 3rd, 6th, 10th, 15th, 17th, 22nd. Snow, 13th, 14th, 17th, 22nd. Atmosphere saturated in February, usually during the spring thaws of March. 1st, 2nd, 3rd, 7th, 8th, 10th, 13th, 24th—27th. Rain, 2nd, 12th, 14th, 15th, 17th, 22nd, 23rd, 24th, 25th, 26th, 27th, 28th, 29th, 30th, 31st. The Crows have been seen during every month hitherto this winter.

**HAMILTON.**—On 1st, a very great storm began about 8 P.M.; at first it snowed, during the 2nd it snowed and rained, and on 3rd it snowed; ceased 11 A.M., 3rd; depth of rain, 4.5920 inches; snow, 5 inches. 17th, two robins seen at 9.30 A.M., and heard chirping. 18th, at 8.45 P.M., ordinary meteor in SW, 40° high, fell W. 20th, at 6 A.M., halo round moon. Wind storms, 3rd, 10th, 13th, 15th, 24th. Snow, 1st, 2nd, 4th, 8th—10th, 13th, 24th—26th, 29th. Rain, 1st, 2nd, 6th, 11th, 12th, 14th—17th, 22nd, 23rd.

**PEMBROKE.**—On 8th, lunar halo, and on 9th. 14th, solar halo, lunar halo, and halo round Venus. Wind storms, 18th, 21st, 30th. Fog, 28th. Snow, 4th, 5th, 8th, 9th, 11th, 12th, 13th. Rain, 1st, 15th, 17th, 23rd.

**PETERBOROUGH.**—On 2nd (Sunday), rained hard all day; barometer fell rapidly, reaching 28.146 at 8 P.M. 4th, about 9.10 P.M., two long irregular strata of auroral light reaching from a point of WH, a little N of W, across to a little S of Z, disappeared in about 45 minutes. 8th, sky clear, and no aurora at 9 P.M., but at 12 midnight a fine display of streamers over the whole N half of sky, and reaching to Z. 11th, halo round sun all forenoon. 18th, in consequence of rain and thaw, the creeks as full as in spring, rivers rising 1 inch every twenty-four hours. 26th, low arch of faint auroral light over NH. 27th, faint auroral light and a few streamers. 28th, very dense white fog, objects invisible 40 yards off at 9.40 A.M. Snow, 2nd, 3rd, 5th—10th, 12th—15th, 24th—26th. Rain, 2nd, 3rd, 12th, 15th—17th, 22nd—24th. Hail, 16th and 22nd.

**SIMCOE.**—On Saturday, 1st, barometer (28.897) began falling steadily and rapidly, and at 6 P.M., 2nd, reached the lowest indication (27.885) ever recorded at this station; at 9 P.M., a rapid rising was observed, but the average indication was not attained until the 5th. A violent storm of snow and rain from the east was synchronous with this barometric disturbance. 21st, lunar halo. 28th, solar halo, 30° diameter. Wind storm, 18th. Snow, 1st, 8th, 10th, 13th, 25th, 29th. Rain, 3rd, 12th, 15th, 17th, 22nd.

**STRATFORD.**—The reading of the barometer at 5 P.M. of 2nd (27.477) is the lowest recorded at this station since its establishment in 1860. Wind storms, 1st, 2nd, 9th, 14th, 15th, 16th, 17th. Fogs, 12th, 31st. Snow, 1st, 10th, 12th—14th, 25th, 26th, 29th. Rain, 11th, 12th, 15th, 16th, 17th, 22nd.

**WINDSOR.**—On 2nd (Sunday), barometer fell to 28.362, which was a fall of almost an inch in 24 hours. On morning of 9th (Sunday), minimum thermometer indicated -1°. Hail, 12th and 13th. Lunar halo, 5th, 10th, 13th, 16th, 17th, 18th, 19th. Wind storms, 2nd, 3rd, 15th, 17th. Fog, 12th. Snow, 1st, 2nd, 4th, 6th, 8th, 10th, 13th, 17th, 23rd, 25th, 26th, 29th, 30th, 31st. Rain, 11th, 12th, 14th—17th, 22nd—24th.

### III. Miscellaneous.

#### 2. THE QUEEN IN A CHURCHYARD.

Her Majesty recently paid a visit to Rob Roy's grave, in the churchyard of Balquhider, and manifested deep interest in the last resting place of the bold outlaw. The Queen was also very much impressed with the inscription on another tombstone—that over the grave of Mrs. Kirk, Mr. Cameron, the parish schoolmaster, who had the honour of conducting the royal party, was requested to furnish Her Majesty with a copy of this curious and interesting epitaph. The inscription is as follows:—

Stones weep tho' eyes were dry;  
Choicest flowers soonest die,  
Their sun oft sets at noon  
Whose fruit is ripe in June,  
Then tears of joy be thine,  
Since Earth must soon resign  
To God what is divine.

#### 2. HONOURS PAID TO THE MEMORY OF MR. PEABODY.

The honours paid, by the Queen's desire, to the remains of the late Mr. Peabody, form a touching and memorable episode on the relations between our Empire and the United States. So grand, and yet so solemn a ceremonial, so regal and yet so simply impressive as one in all its details, from the period of the temporary sepulture of the remains in "the burial place of kings, renowned nobles and statesmen" in Westminster Abbey, until the dust of the great philanthropist was returned to its kindred dust in his native land, with the Queen's son as mourner, has never before been witnessed in either Europe or America. The whole proceedings from the beginning indicated those high qualities of excellent judgment, delicacy and tact, as well as kind womanly tenderness for which the Queen is so distinguished among the Sovereigns of her time. Independently of the touching impressiveness of the ceremonial itself, the kind feelings which it has called forth from the American people indicate how deeply moved they have been by a tribute so unprecedented in its character, and so kingly in the solemn dignity of its performance.

The vessel chosen to convey the remains of Mr. Peabody to the United States, was Her Majesty's new and powerful turret-ship, *Monarch*, a noble specimen of England's wooden walls. The correspondent of the *N. Y. Tribune* thus describes his visit to the *Monarch*, on her arrival at Portland:—

"The scene at sunrise was indescribably beautiful. The rigging of

the gunboats and the various vessels in the harbour was covered with ice, glittering like gold in the rosy light from the east. Clouds enough remained, after last night's storm, to tinge the horizon with a rich glow, against which, as we rounded the light at the end of the break-water and entered the outer harbour, the immense hull of the *Monarch*, and the long, trim, graceful form of her American Consort the *Plymouth*, stood out in bold relief about two miles away.

"The descriptions of her which have been so extensively published, do rather less than justice to her magnificent shape and proportions, and the elegance and completeness of her internal arrangements. The features which most impress an unprofessional observer are probably the elaborate provisions for the comfort of the officers and men, the size and elegance of the cabins, the large and well aired forecables, and the wonderful abundance of labor-saving appliances, which would do credit to a whole century of Yankee inventors. In thickness of plating, power of the engines as well as in the weight of her guns, she is unequalled by some of our own vessels; but in sea-going qualities she is possibly not surpassed by anything afloat, and her wonderful steadiness would, of course, give her an immense advantage in an engagement on the open water.

"Throughout the vessel may be seen steam capstans, steam breaks, steam ventilators, steam pumps for the hold, steam pumps for washing the decks, gas works, water condensers, a balance rudder which sways the great mass of wood and iron like a yacht, and a steam steering apparatus, by the help of which a single man between the decks can manage the helm with perfect ease. These are among the improvements which have been combined in this marvel of naval architecture. The hull of the *Monarch* is painted black. The normal colour of the turrets, and the iron bridge that runs over their tops almost the whole length of the ship, is white, and that of the spars cream-colour; but for this voyage the *Monarch* and *Plymouth* have been put into mourning, and everything above the decks is painted a dull funeral grey, a stripe of the same hue running around the hull.

"The mortuary chamber, in which the coffin was deposited, is the after-cabin on the second deck. The walls and roof were entirely concealed by drapery, whose dead blackness was relieved by an occasional stripe of white, a white fringe, and wreaths, and monograms upon the sides. The coffin, thickly studded with silver bosses, rested on a low platform, with four silver candlesticks, and huge wax candles on each side, and two American flags draped behind the head. A marine stood guard at the door.

"As the last of the American gunboats passed the *Monarch* to take their positions in the procession, and crossed the *Monarch's* stern, the minute guns began to echo across the water, first from the *Plymouth*, and afterwards from the monitors, while at each discharge showers of glittering icicles rained from the rigging. The monitors did not fire their turret guns—only the howitzers. Meanwhile, the *Monarch* had cleared her decks of ice, set her maintop-gallant masts, squared her yards and hoisted a large flag of the stars and stripes, and the red cross of St. George. The *Plymouth*, the gunboats, and smaller craft, also displayed the American flag at half-mast, and the one or two merchant vessels which passed us, outward bound, made a similar disposition of their colours, American or British, as the case might be.

"At a signal from the *Plymouth* the *Monarch* began to weigh her ponderous anchor. As the screw began to revolve, Fort Preble took up the firing of minute-guns, and continued until the *Monarch* reached her final anchorage. The *Monarch* kept the head of the line. The *Miantonomah*, *Terror* and *Leyden* came next. The *Plymouth* then got under way, and was followed by the *Mahoning*.

"In one respect the storm of yesterday helped us this morning, for as we rounded the point, we found that every vessel in the harbour had spread its sails to dry, and with flags flying in the midst of this cloud of canvas, and the ice laden trees of Portland shining on the hillside behind them, the sight was so beautiful that one could hardly repress an exclamation of delight, and many of the officers of the *Monarch* were enthusiastic in their expression of it.

"The stately figure of the *Monarch*, as she moved with funeral slowness up the channel, past the gray walls of Forts Preble and Scannell and George, through the clouds of smoke which rolled from the mouths of the guns, and hung low over the water, made the spectacle solemn and impressive, it was far more impressive, however, from the deck of the *Monarch* than it could have been from the shore, or from any of the other vessels.

"The vessels kept their positions in the line with reasonable exactness as they moved slowly in, and at half-past ten, close under the guns of Fort George, and about three-quarters of a mile from the Great Eastern wharves, the *Monarch* dropped her anchor, and the firing ceased. Before the other vessels came to anchor, the *Cohasset* steamed alongside, the marines presented arms, the bugle sounded, the chief officers stood in the gangway, and Captain Commerell and Captain Almy, both in full uniform and chapcaux, went ashore.



"Captain Commerell was very anxious that the body should lie in state two days aboard the ship, not only in order that the British Government might pay this last tribute of respect to Mr. Peabody's memory, but also in order that the citizens might have an opportunity to see a vessel about which public curiosity is very lively. On Tuesday, the funeral ceremonies, consisting of a prayer by Bishop Neely, of the Protestant Episcopal Church in this diocese, and music by a band and choir will be celebrated at the Hall, and during the singing of the last chorus the coffin will be moved to the cars, and carried direct to Peabody.

"Whatever may be said of the scanty naval reception in Portland harbour on Wednesday by the American Admiral, there can be no two opinions as to the solemn and well-ordered ceremonies which attended the removal of Mr. Peabody's remains from the *Monarch* to the shore. The splendor of the pageant was due principally to the British forces, whose magnificent appearance derived additional effect from the beautiful regularity of their movements, and the strictness of their demeanor. The American soldier or seaman has never attained the clock-like perfection in drill in which the British service takes such pride, but for purposes of parade the bearing of these Englishmen is superb. When the ships-of-war, for instance, manned their yards, the Americans were tolerably nimble in getting up the rigging, but out on the yards they were neither straight nor still. They rested now on one leg, now on the other; now leaned over, and now looked around. The crew of the *Monarch*, however, once in their places, were like statues, or as a lady more felicitously expressed it, "they looked at a little distance like a row of black statues."

"Eleven o'clock was the appointed hour, and at 11, to a second, the remains of George Peabody left the British ship. It was a dull, cloudy morning, and the leaden sky hung lowering as a pall over the water. Half a mile or so down the harbour the ships' boats of the *Monarch*, the *Plymouth*, the *Miantonomah*, the *Terror*, and the *Mahoning*, had meanwhile formed in double line. The foremost places were taken by four boats of the *Monarch*, each manned with eight oars, and flying the British colours at the stern. Behind these, in the order of the commissions of their respective ships, came the American boats, nine in each line, making 22 boats in all. At the rear of the double line lay the steam-tender *Cohasset*, bearing Admiral Farragut, and other officers, and flying the Admiral's colours at the stern. The steam tender *Leyden* lay alongside the *Monarch* to receive the remains. At the stern a pavilion had been erected, of black alpaca, with a narrow white fringe, and curtains looped up at the side, with black and white rosettes.

"At 10.45 the coffin was raised from its dais in the mortuary chamber by twelve picked seamen of the *Monarch*, drawn forward on a bier with wheels, and brought up the main hatch by means of an inclined plane. During the preparation, for this process, the marines, under Major Gardner, drew up on deck between the hatch and the gangway. The ship's excellent band took its station by the forward turret, the officers in their imposing full-dress uniform, placed themselves at the after side of the hatch, and about three hundred men, neatly dressed in dark blue, with white rolling collars, stood facing the officers and marines. As the remains came up to the hatch the drum rolled, the band struck up the Dead March from "Saul," the marines presented, the officers and crew uncovered their heads, the ship's chaplain in his white surplice, and Captain Commerell with hat in hand, placed themselves one at the head and another at the foot, and the twelve seamen, lifting the heavy lead coffin by its handles, bore it reverently to the side. Here a section of the bulwarks had been thrown down, and whip and tackle rigged to the yard arm of the mainmast, while a double line of 30 or 40 sailors held the end of the whip, which was run through a block fastened to the deck. Stout black bands were placed around the coffin and hooked to the rope, and at the word from the officer in command, spoken in a low and solemn tone, the men walked forward with the rope, and the coffin swung above the deck of the *Leyden*, and to the piping of the boatswain's whistle, was lowered reverently to the entrance of the pavilion, where three or four seamen stood ready to receive it. The detail told off to accompany the *Leyden* followed it down the side.

"A score of sailors neatly dressed with blue cloth and spotless cotton, two or three officers in full uniform, the marine artillery, in dark blue with scarlet facings, the marine light infantry, in their jaunty short red coats, the band, two members of the Peabody family, and the American officers and crew, made up the burden of the little vessel. At the entrance to the pavilion stood four sailors with muskets, and within it were the 12 picked bearers. In the forward part of the boat the marines were drawn up around the bows and sides, facing outward, and leaning upon their arms, and between them was the band still playing the dirge.

"Capt. Commerell, Chaplain Harrison, and ten other officers of the ship now went down the other side of the *Monarch*, where their

launch—a beautiful little steam life-boat—was waiting for them. As the tender and launch simultaneously met off from the ship, firing commenced from one of the bow guns of the *Monarch*, to be taken up at intervals of two minutes by the *Plymouth*, by the 16-inch turret guns of the monitors, and by the guns of Fort Preble. Backing down first towards the monitors, the *Leyden* and the launch got into position, and steamed toward the double line of boats, passing between their open ranks, while the oars were tossed aloft, and the band still playing its solemn march.

"At this point the American steam-tug *Iris*, with the band of the 5th Artillery, and several officers from the forts, moved up, and took the head of the procession. Commander Harmony followed in his gig, the *Leyden* came next with the corpse, and the post of chief mourner, immediately behind the *Leyden*, was held by Capt. Commerell, though he had been anxious to yield to the American Admiral. Then the double string of 22 boats, in tow of the tugs, swept into line, and last of all came Admiral Farragut and his staff in the *Cohasset*. The guns still firing, and the band of the *Iris* now relieving that of the *Monarch*, the solemn procession moved down a short distance seaward, and then pulling about with bold and graceful sweep, made slowly for the wharf.

"As seen from the deck of the great iron ship, this procession, with the crowds watching it from the shore, the hundreds of ships in the harbour, with flags at half-mast, the mournful music wafted across the water, the heavy clouds of smoke rolling from the flashing embrasures of Fort Preble, the ports of the *Plymouth*, and the turrets of the *Miantonomah* and the *Terror*; the scarlet uniforms on the hearse boat, contrasting with the funeral drapery of the pavilion; the long, regular lines of boats, with British and American colours trailing astern, and oars upheld perpendicularly; and the grey clouds, heavy with a coming snow-storm, hanging over all, the spectacle was one of the grandest ever witnessed in American waters.

"The landing-place was at the Atlantic Wharf, where there is a hanging bridge to be lowered if necessary, and a large empty building for the reception ceremonies. Here a funeral car, surmounted by an eagle, from whose beak depended streamers of black and white satin, and drawn by six magnificent black horses, with housing of black broadcloth, trimmed with silver, awaited the remains. The principal officers of the American fleet in the harbour, the army officers from the various forts—the great number of officers who had come hither for the express purpose of taking part in the solemnity—the Mayor of Portland, the British Consul, in uniform, the Legislature of Maine, the Governor of the State, with his brilliant staff, the committee from the city government of Baltimore, and two companies of Portland militia, with their musicians, were drawn up in due order.

"As the procession approached the dock, the *Iris* steamed out of line and landed her passengers at another place; the tugs cast off the two strings of boats, and got out of the way, while the boats, closing up till the bow of one touched the stern of another, put their officers ashore. The Admiral and his staff, the British marines, and the officers of the *Monarch* next stepped upon the wharf, and when all had taken their places, the twelve British sailors bore the coffin up to the landing stage, and to the music of their own band, marched with it slowly to the funeral car at the further end of the wharf.

"The honour of taking it from the hands which had brought it across the ocean was reserved for the men of the Revenue cutter *Mahoning*, who relieved the English sailors at the gate of the wharf, and placed it in the hearse. Then the officers formed a circle, Captain Commerell and Governor Chamberlain stepped forward, and the transfer of the remains from the custody of Great Britain to the custody of the State of Maine was completed by the following addresses. Captain Commerell said:—

"GOV. CHAMBERLAIN:—The venerated remains of the great and good man now before us were placed in my charge by Mr. Motley, the Minister of the United States to the Court of St. James, to be conveyed from the country, I may almost say, of his adoption, to the land which gave him birth. Conveyed by the United States ship-of-war *Plymouth*, Captain Macomb, and accompanied by his near relative, Mr. George Peabody Russell, we have arrived at the city of Portland, in the State of Maine, where most magnificent preparations have been made to receive it. The noble vessel which I command has been selected for this honourable service, I have the right to believe, from the name she bears. I have received orders to shew, by every means in my power, the respect and admiration in which this great philanthropist was held, not only by our most gracious Sovereign, Queen Victoria, but by the people of the United Kingdom. This task has been rendered doubly easy to me by the knowledge the citizens of the United States already possess of the expressed feelings, on a former occasion, of our beloved Queen, The President of the United States of America has testi-

fied to the appreciation of what we feel, by the appointment of an officer of great distinction and renown—Admiral Farragut—in command of a squadron of such character, to receive these venerated remains. It gives us great pleasure to feel that one of our great vessels of war has been sent here, her first errand, not of destruction and death, but of peace and good will. Gov. Chamberlain: Into your hands, as Governor of the State of Maine, I now deliver my sacred trust; but though the remains of this great and good man must pass from us, you cannot deprive us of his memory. The suffering artisan, the widow and the orphan on both sides of the Atlantic, both North and South, will henceforth bless the name of George Peabody.

“Gov. Chamberlain replied:

“Capt. COMMEREL—I receive into the care and the custody of the State of Maine the sacred trust so honourably confided to you, and now so faithfully and nobly fulfilled. With mournful pride, this State sees herself chosen as the shore where two nations meet to mingle their tears over the bier of the benefactor of mankind. It is befitting that I should express the deep gratitude of the American people in recognizing the courtesy, rising to the height of honour and tenderness, with which it has pleased Her Majesty, the Queen of Great Britain, to restore to his native land this precious dust. England honoured this man while he lived. When he deceased, she laid him with kings. One of her finest ships has borne him hither in the charge of officers known and honoured in both countries; and you were escorted by an American ship whose name reminds us at once of the tie that binds up to the old home, and the spirit that makes us a nation. You are met here by the highest officers of the American navy, whose deeds the world admires. You are received by this vast concourse of people who appreciate all this honour, and join with full hearts in the august ceremonies. I thank you, captain, for your generous courtesy in allowing our people to see the almost royal state in which you have borne hither the remains of this good man. We have seen how England sent him, even as our Saxon fathers of old sent their good king, after death, in their proudest ship, freighted with costliest treasures, launched out upon the sea whence he mysteriously came. You will return without him, but not void; you will bear treasures of memory and affection which cannot fail. You will return from a mightier victory than your guns in their proudest triumph shall ever win. You will bear a nation's gratitude, reverence and love.

“After these brave and noble addresses were delivered, the procession was formed. First marched the Portland bands, then the Light Artillery and Mechanic Blues, under the command of Gen. J. M. Brown; the band of the *Monarch* and the British Marines, under Major Gardner, 80 men, with reversed arms; the funeral car, with the crew of the *Mahoning* on either side, and at the rear came next, and after it, in carriages, were the relatives of Mr. Peabody, Capt. Commerel, Admiral Farragut, Governor Chamberlain, Mayor Putnam, trustees of the Peabody Educational Fund, and committee from the Peabody Institute, the British Consul at this port, Capt. Macomb of the *Plymouth*, Capt. Commerel's staff, the Admiral's staff, the Governor's Council and staff, and the heads of civic departments. Last of all, on foot, marched the officers of the British and American Navy in full uniform.

“Arrived at an open space, which had been kept clear in front of the Hall, the escort fell back, opened ranks, and presented arms, the carriages drove up and discharged their passengers, and the hearse moved forward to a draped platform, while the British Marines, on either hand, leaned with bowed heads on the butts of their muskets during the removal of the coffin. As the procession then ascended the steps of the elegant Hall, and passed through the canopied corridors, the doors of the Room of State flew open, and into the mournful chamber the remains of the philanthropist were borne by the American sailors. The whole company stood round in silence while the casket was placed on the catafalque. No word was spoken, but a guard of four men from the Portland Mechanic Blues were posted, and there the body of George Peabody lay until Tuesday, when a new solemnity attended its removal to his native place.

“This is the first time, if I am not mistaken, that the unwonted spectacle was witnessed of a detachment of British troops, under arms, having landed in the United States, and marched through the streets, since the war of 1812. There was every desire to give them the kindest welcome that the nature of their errand would allow; but of course, no marked demonstration on an occasion of this kind could take place.

“There was a pleasing incident connected with the visit of these troops, of which I have since been informed. When the coffin had been deposited in state on the catafalque, and the procession dismissed, and no one remained in the darkened hall but the guards at the four corners of the bier, Major Gardner, the English officer in command of the Marines, asked permission for his men to go in

and pay a last tribute of respect to the remains. Of course, the request was granted. The detachment marched into the great hall, and drawn up before the coffin, paid the customary honours to the dead, while their band softly played a dirge. Then they came away, and the Portland Militia gave them escort to the boats. This is only one of the many incidents which show the anxiety of the Englishmen to do their very utmost, both personally and officially, in testifying their respect for Mr. Peabody's memory. Thus Captain Commerell absolutely insisted upon the privilege of keeping the body in state on his vessel for two days after arriving in port. Thus a number of officers from the *Monarch* attended the burial service proper, which took place at Peabody on the 8th inst. Thus also Captain Commerell, though as a typical British sailor, he is of course no speech-maker, asked as a privilege to be allowed to deliver the body with a short formal address. Their behaviour, in fact, from first to last, has been graceful and courteous to the very extreme degree, and will not soon be forgotten.

“The gracefulness of the act which Great Britain has performed in this ceremonious restoration of George Peabody, to the country which gave him birth, has been enhanced, not only by the complete, punctual, and picturesque manner in which the orders of the British Admiralty have been carried out, but by the high character and acquirements of the officers to whom the execution of those orders have been intrusted. Captain Commerell, though he has been seldom on shore, has already made himself a general favourite in Portland by his frank and courteous manners, and the remarkable good nature with which he has borne the infliction of three thousand or four thousand visitors a day. I heard yesterday a story of one of his exploits, which you may be glad to have me repeat. During the Crimean war, he served with the British fleet off Yenikale, where the Russians had an important depot of ammunition, arms, and commissary stores. One dark, windy night, he rowed ashore with no companion but his coxswain, crept up to the storerooms, and set fire to them on the windward side. The whole depot was consumed, but before the two Englishmen could get away, the coxswain was badly wounded. Captain Commerell took him on his back, reached the boat, and pulled off in safety to his ship. That is how he got his “Victoria Cross,” and he was one of the first upon whom that reward of bravery was ever conferred.

“At nine o'clock on the morning of the funeral, the civic societies, public functionaries, distinguished guests, and American and British officers assembled, and the military escort, with the funeral car, were drawn up in the street before the Hall, in the midst of a whirl of snow. About ten o'clock, the doors of the mourning chamber were opened, and the procession filled it. The spectacle in the dim light of the hall was indescribably impressive. All around the catafalque were wreaths and vases of natural flowers. At the four corners were guards leaning upon the butts of their muskets, and sentries paced back and forth along the sides. On the right and left of the dais stood the ten gentlemen, ex-Mayors of Portland, and ex-Presidents of the Board of Trade, who had been chosen as pall-bearers. Behind them were members of the Peabody family, and Trustees of Mr. Peabody's charities. The rest of the cortege drew up in regular line, facing the coffin. Capt. Commerell, with a great number of the officers of the *Monarch*, and Captain Almy were there. Captain Fairfax, Captain Macomb, officers of all grades from the *Plymouth*, the *Benicia*, the *Miantonomah* and the *Terror*. At the steps of the catafalque stood Bishop Neely, the Rev. Mr. Hayes, Chaplain to the Bishop, and the Rev. Mr. Harrison, Chaplain of the *Monarch*, all in surplices.

“Through the veiled openings above the gallery now came the music of the choir, softened by the distance, and, when it died away, the Bishop knelt and offered a few prayers, selected partly from the burial service of the Episcopal Church. Music followed again, a dirge from one of the bands, alternating with the choruses of Handel and Mendelssohn, and while the choir was singing “The Happy and Blessed,” from the oratorio of “St. Paul,” the procession began to move. Twelve stout sailors from the revenue cutter *Mahoning* took the coffin on a bier, carried it down the great stairway to the street, and placed it on the car. The relatives, the principal guests, and the army and navy officers followed two and two, and the civic societies and delegations brought up the rear. The ceremonies lasted only half an hour, but they were more solemn and beautiful than any previous chapter in the Peabody pageant on this side of the water, except the scene of the landing on Saturday. That scene was the climax of the whole affair. The cortege, headed by a force of police, and the Marshal and his Aids, now moved through Middle and Congress streets to the railroad depot, where the funeral car drove up to the draped platform prepared for it outside the depot, and the train was brought out to receive the coffin and its followers. A pilot engine went ahead to clear the track, and give warning of our approach. When the coffin had been placed on its bier in the car, flowers laid upon it,

and a guard of regular soldiers stationed by its side, the rest of the party took their places. The procession broke up, and, to the music of a dirge, the cars moved slowly out of the depot, the British officers, with Captain Conmerrell at their head, remaining on the platform till we had passed out of sight. Along the route, the whole country seemed to have turned out to see us go by.

"It was one o'clock when we moved out of Portland. It was nearly five o'clock when we passed the outskirts of Salem. From Salem to Peabody is only two miles or so of streets, and every foot of those two miles was covered by the crowd of gazers. The railway station of Peabody was draped with black, and flags floated from it at half-mast, edged with crape. A funeral car, consisting of a draped platform without canopy, awaited the remains, and the entire population of the surrounding country seemed to fill the streets. The pomp and circumstance was supplied by the five companies of regulars, and the military band who had come with us from Portland, the Sutton Guard who met us here, and the officers of the U. S. Navy, who kept by the remains from first to last. The procession slowly moved, the civilians on this occasion marching two and two on foot, and only three or four carriages appeared in the line at all. The car drew up before the institute door, over which, among the emblems of mourning, hung the flags of England and America. The troops formed in line, and presented arms. The Committees and the naval officers passed them, and filed into the library, where the catafalque had been erected, and when twelve stout men had brought the coffin in after them, and the officers of the artillery had followed in a body, the assemblage quietly dispersed. There, in his favourite Institute, George Peabody's body will now rest for a full week. Thus ends the ceremony of transferring the remains of George Peabody to his native land.

"The funeral ceremonies which followed, of transferring the remains of Mr. Peabody to the grave, were full of interest, heightened by the fact that by request of the Queen, Prince Arthur attended as one of the chief mourners on her behalf."

### 3. ENGLISH IRON-CLAD SHIPS—THE "MONARCH."

Omitting all mention of her whole vast navy of non-iron-clad vessels, to whose valuable services we are not, however, by any means insensible, we find that England has at this moment 41 armour-plated ships afloat, to which will be added 10 others now in course of construction, before the completion of the financial year. These 41 vessels carry 627 guns, and represent a tonnage of 145,664 with a horse-power of 29,697. Twenty-six of them are employed either in the Channel, Squadron, or upon some home station; six are in the Mediterranean; two, the *Defence* and the *Royal Alfred*, on the North American station; one on the China station; one in the Pacific; four at the Bermudas; and one, the *Monarch*, upon particular service. Three, the *Minotaur*, the *Northumberland*, and the *Agincourt*, have each a tonnage exceeding 6,000, while three others, the *Achilles*, the *Warrior* and the *Black Prince*, are measured as 6,621 and 6,109 (for the two last-named) respectively. None of these six vessels has a horse-power of less than 1,250. Of the 41, only fourteen are of less than 3,000 tons. Eight of the vessels in course of construction will carry 76 guns between them, and the ten show an aggregate tonnage of 38,877, with a horse-power of 7,300. Their estimated cost is stated at £2,500,000, being at the enormous rate of nearly £67 per ton. Three are turrets, two twin screws, and two rams. Besides all these there are three armour-plated ships, of four guns each and an average tonnage of 2,000, designed for the defence of the Colonies, namely, the *Abyssinia* and the *Magdala* for Bombay, and the *Cerberus* for Melbourne. Altogether there seems therefore little ground for any depreciation of our naval resources, and, with the recent sea going experience of some of the heaviest of the fleet, little reason to doubt the worthy maintenance of our old supremacy upon the seas. How far the *Monarch* has done her share towards impressing visitors with a conviction of the superiority of our system the extracts from the *Tribune's* correspondence which we publish in another column, will go some way to show.

It is pleasant therefore to reflect that there are forty or fifty others, here and there through the world, of very much the same type, and carrying exactly the same flag.—*Hamilton Spectator*.

Captain Macnab, Commander of the United States steamer *Plymouth*, has forwarded a letter to the Secretary of the Navy, giving in detail the account of the performance of the *Monarch* on her trip across the Atlantic. He says there was a variety of weather encountered, but the most of the time it was reckoned quite fair. He says the *Monarch* is a very fast vessel, either under sail or steam; that she steers well under all circumstances; and that during the voyage she proved herself a capital sea boat, capable of steaming or sailing around the world without escort. Her motion, rolling or pitching, was so slight that there would be but rarely an occasion when the height of the seas would prevent her from firing her guns.

Her cabins, wardrooms, etc., are large and well ventilated. He concludes by saying: "Altogether, I consider the *Monarch* the most formidable and efficient iron-clad vessel of war for ocean service in the world."

## IV. Educational Intelligence.

—PAYING FOR RESULTS IN EDUCATION.—There is one point in the English system of education which may be worthy of attention—the principle of paying for results. For example, the Education Committee of the Privy Council pays the teacher of every Government-aided school one shilling and four pence for every pupil who passes in music to the satisfaction of the inspector. One teacher in Wales the other day received \$40 gold on this one item, and music is so far from being a hindrance that it is a rest and recreation, after the fatigues of other kinds of intellectual labour.

—HAMILTON.—Educational matters here seem to progress with great rapidity. At an opening of one of the Primary Schools one of the speakers stated "that in 1853 when the Central School was first opened people thought they were doing a wondrous work, and even imagined that the building could never be filled with children. At first the number of children was 500, now it is over 3,000. Instead of six or seven teachers there are required forty or fifty." Mr. Macallum, Principal of the Central School, gave some very interesting statistics, from which it appeared that there are four divisions in St. George's Ward with 284 pupils; in St. Patrick's Ward 4 divisions with 233 pupils; in St. Lawrence Ward 8 divisions with 261 pupils; in St. Andrew's Ward 8 divisions with 469 pupils; in St. Mary's Ward 6 divisions with 413 pupils; in the Central 22 divisions with 1,303 pupils. The average daily attendance during October, 1866, was 2,355; in 1867, 2,523; in 1868, 2,585; in 1869, 2,713; while the fees paid in 1866 were \$435; in 1867, \$495; in 1868, \$537.87; in 1869, \$576.37. He thought no teacher ought to be called upon to teach more than 50 or 55 pupils.—*Galt Reformer*.

—CANADIAN LITERARY INSTITUTE.—The report of the last half year shows an increase of average attendance of pupils, from 232 in the years 1866-7, to 332 in 1869-70. There are now upwards of 130 on the roll, 90 of whom board at the Institute. The Treasurer's report showed the finances to be in a healthy condition. The expenditure for the half year amounted to upwards of \$12,500. A new building has been erected and finished, at a cost of nearly \$3,000, as additional accommodations for students, which is already fully occupied, and other additions must be made. We have been informed that the Trustees contemplate the extension of their charter for granting collegiate powers.—*Woodstock Times*.

—LADIES' COLLEGE.—The project of establishing a Ladies' College in Ottawa is meeting with considerable favour. Hon. Mr. Skead has offered a free grant of five acres on Bank street, near the city limits for the site, on condition that the building to be erected thereon shall be of the value of at least \$25,000.—*Kingston News*.

—OXFORD COUNTY SCHOOL TEACHERS' ASSOCIATION.—At the recent half-yearly meeting of this Association was held at Woodstock, Dr. D. Clark, of Princeton, the well known essayist and *literateur*, gave his paper on "The Anglo-Saxon in the English Language." Mr. Izzard, of Woodstock, read a very interesting paper on "Solar Time," showing the reason of the sun's being sometimes faster and sometimes slower than the true time, as the sun is in *perigeo* or *apogee*.—Mr. Izzard was requested to publish his valuable paper. Dr. Howland next read a short essay on "The use and advantages of the Microscope," which was well executed and cordially received by the meeting. A discussion took place on the subject of absolute silence, or a moderate degree of talking in schools on the subject of the lessons on hand, when a vote being taken decided in favor of those who, while advocating silence as much as possible, considered that absolute silence was impossible, and impracticable with the efficient working of large classes. The new office-bearers were elected as follows:—President, Mr. Izzard; Vice-president, Mr. Strachan; Secretary and Treasurer, Mr. J. G. Frazer. Several new members were added to the roll.—*Cor. Hamilton Spectator*.

—ELENHEIM TEACHERS' ASSOCIATION.—According to announcement at the regular bi-monthly meeting of this Society held in Princeton, Rev. Mr. Landon, Superintendent and Dr. Clarke of the *Review*, added much to the interest of the meeting by their presence and remarks. Mr. Cameron of Drumbo introduced the subject of the "proper method of teaching History," his views being generally endorsed. Other subjects interesting to teachers were discussed in a most friendly manner. The President, Mr. Fisher, and the Secretary and Treasurer, Mr. Patullo, were re-elected officers during the current year, and Dr. Clarke Vice-president. The programme for next meeting is as follows:—Mr. Fisher to prepare a paper on the "origin of Celtic words." Mr. Geo. Wrigley to introduce the subject of the "proper method of teaching Grammar." Mr. G. Patullo to give a reading, subject to the criticism of the members. And Dr. Clarke to illustrate the theory of "Technical memory."—*Stratford Beacon*.

—NEW BRUNSWICK AND THE GILCHRIST SCHOLARSHIP.—From a pamphlet recently published by the Canadian Government, containing Correspondence and Papers connected with the Gilchrist Scholarship Examinations, we learn that the examinations for 1869, Mr. Logan, of Morrin College, stood fifth, and Mr. Macfarlane of the University of N. B. stood sixth, in the Honour Division; and that each of these gentlemen obtained the number of marks qualifying for an Exhibition Scholarship, or Prize, had the candidates been examined in England. To take such a high standing among a body of 500 candidates, or upwards, drawn from the best schools in Great Britain, is very creditable to these young gentlemen. That they considerably outstripped the other candidates from the Dominion is apparent from the fact that the Canadian next on the Honour Division—a gentleman from Trinity College, Toronto—stands forty-eight. Mr. Macfarlane, however, is not the only Alumnus of the New Brunswick University who in 1869, dis-

tinguished himself in competition with outsiders: for we find that Mr. Russell, another graduate of the same University, was the successful competitor for the Ross Scholarship of the annual value of \$100, given in the Divinity Hall of Queen's College, Kingston. On the only two occasions on which the Gilchrist Scholarship has been opened in the Dominion, the competitors from our Provincial University have stood next to the winner. At the Examinations for the present year, we trust that the University will continue to contest which has been so creditable to it, and that it will this time send up a candidate who will take the first place. For, as remarked by the President at the opening of the Collegiate School, "only let the Professors and Students have the means, and they will show that they have the mettle to command success."—*New Brunswick Head Quarters.*

## Standard British Periodicals for 1870.

### 1.—The Edinburgh Review.

This is the oldest of the series. In its main features it still follows in the path marked out by Broegham Jeffrey, Sydney Smith, and Lord Holland, its original founders and first contributors.

### 2.—The London Quarterly Review,

which commences its 128th volume with the January number, was set on foot as a rival to the EDINBURGH. It resolutely maintains its opposition in politics, and shows equal vigor in its literary department.

### 3.—The Westminster Review

has just closed its 92nd volume. In point of literary ability, this Review is fast rising to a level with its competitors. It is the advocate of political and religious liberalism.

### 4.—The North British Review,

now in its 51st volume, occupies a very high position in periodical literature. Passing beyond the narrow formalism of schools and parties, it appeals to a wider range of sympathies and a higher integrity of conviction.

### 5.—Blackwood's Edinburgh Magazine

was commenced 52 years ago. Equalling the Quarterlies in its literary and scientific departments, it has won a wide reputation for the narratives and sketches which enliven its pages.

### TERMS FOR 1870:

For any one of the Reviews .....	\$4 00	per annum.	American currency
For any two of the Reviews .....	7 00	"	
For any three of the Reviews.....	10 00	"	
For all four of the Reviews.....	12 00	"	
For Blackwood's Magazine.....	4 00	"	
For Blackwood and one Review .....	7 00	"	
For Blackwood and any two of the Reviews.....	10 00	"	
For Blackwood and three of the Reviews .....	13 00	"	
For Blackwood and the four Reviews.....	15 00	"	

Single Numbers of a Review, \$1. Single numbers of Blackwood, 35 cents.

The Reviews are published quarterly; Blackwood's Magazine is monthly. Volumes commence in January.

The POSTAGE on current subscriptions, to any part of the United States, is TWO CENTS a number, to be prepaid at the office of delivery. For back numbers the postage is double.

The January numbers will be printed from New Type, and arrangements have been made, which, it is hoped, will secure regular and early publication.

### The Leonard Scott Publishing Company,

140 Fulton Street, New York.

Supplied also by Messrs. Copp, Clark & Co.,

King Street East, Toronto.

THE LEONARD SCOTT PUBLISHING COMPANY also publish THE FARMERS' GUIDE to Scientific and Practical Agriculture. By HENRY STEPHENS, F. R. S. Edinburgh, and the late J. P. NORRIS, Professor of Scientific and Practical Agriculture, Yale College, New Haven. 2 vols. Royal Octavo. 1600 pages and numerous Engravings.

## GILCHRIST SCHOLARSHIP, LONDON UNIVERSITY.

A LIST OF THE SUBJECTS FOR THE JUNE EXAMINATIONS in the years 1870 and 1871, has been sent to the principal educational institutions in the Province, and can be obtained also upon application at the Provincial Secretary's Office, Parliament Buildings, Toronto.

M. C. CAMERON,  
Secretary.

February 1st, 1870.

## V. Departmental Notices.

### NO PENSIONS TO COMMON SCHOOL TEACHERS UNLESS THEY SUBSCRIBE TO THE FUND.

Public notice is hereby given to all Teachers of Common Schools, or Teachers of the English branches in Grammar Schools, who are legally qualified Common School Teachers in Upper Canada, who may wish to avail themselves at any future time of the advantages of the Superannuated Common School

Teacher's Fund, that it will be necessary for them to transmit to the Chief Superintendent, if they have not already done so, their subscriptions, at the rate of \$5 per annum for each preceding year, commencing with 1854, and at the rate of \$4 per annum for the current year's subscription. 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." No pension will be granted to any teacher who has not subscribed to the fund, in accordance to the preceding regulations of the Council of Public Instruction.

## SUNDAY SCHOOL BOOKS AND REQUISITES.

Application having been frequently made to the Department for the supply from its Depository of Sunday School Library and Prize Books, Maps and other requisites, it is deemed advisable to insert the following information on the subject.

1. The Department has no authority to grant the one hundred per cent. upon any remittance for Library or Prize Books, Maps or Requisites, except on such as are received from Municipal or Public School Corporations in Upper Canada. Books, Maps and other Requisites suitable for Sunday Schools, or for Library or other similar Associations, can however, on receipt of the necessary amount, be supplied from the Depository at the net prices, that is about twenty-five or thirty per cent. less than the usual current retail prices.

2. The admirable books published in England by the Society for Promoting Christian Knowledge, and by the London Religious Tract Society, are furnished from the Societies' catalogues at currency for sterling prices (i.e. a shilling sterling book is furnished for twenty cents Canadian currency, and so on in proportion.) These two catalogues will, as far as possible, be furnished to parties applying for them. Books suitable for Sunday Schools are received from the other large religious societies, Presbyterian and Methodists, and from the various extensive publishers in Britain and the United States, but the list would be too extensive to publish separately.

3. On receiving the necessary instructions, a suitable selection can be made at the Department, subject to the approval of the parties sending the order. Any books, maps, &c., not desired which may be sent from the Depository, will be exchanged for others, if returned promptly and in good order.

## FOUR KINDS OF LIBRARIES WHICH MAY BE ESTABLISHED UNDER THE DEPARTMENTAL REGULATIONS.

"The Public School Libraries are becoming the crown and glory of the Institution of the Province."—LORD ELGIN.

"Had I the power I would scatter Libraries over the whole land, as the sower sows his seed."—HORACE MANN.

Under the regulations of the Department, each County Council can establish four classes of libraries in their Municipality, as follows. City, Town, Village, and Township Councils can establish the first three classes, and School Trustees either of the first and third classes.

1. An ordinary *Common School Library* in each school-house for the use of the children and ratepayers.

2. A *General Public Lending Library*, available to all the ratepayers of the Municipality.

3. A *Professional Library* of books on teaching, school organization, language and kindred subjects, available to teachers alone.

4. A Library in any *Public Institution*, under the control of the Municipality, for the use of the inmates, or in the *County Jail*, for the use of the prisoners.

It cannot be too strongly urged upon School Trustees, the importance and even the necessity of providing, (especially during the autumn and winter months,) suitable reading books for the pupils in their school, either as prizes or in libraries. Having given the pupils a taste for reading and general knowledge, they should provide some agreeable and practical means of gratifying it.