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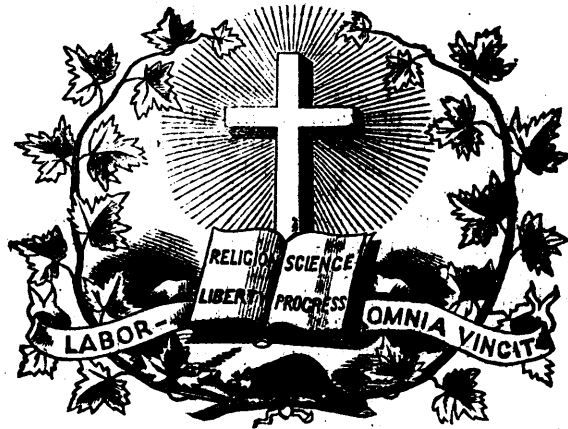
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Schools for Parents.

As so much has been done for children of late years, we think it is high time to take some thought for parents. It is, indeed, a glorious thing to be a child in these days. What adult would not be a boy or girl again if it were anyhow possible? To see how all the arts and sciences strive to render themselves agreeable to childhood! The thorns are all removed from its path, and no device is neglected that can make the progress of every small pilgrim easy. Schools nowadays vie with each other in making themselves attractive and delightful. We say then that, the lines having fallen to the children in such pleasant places, it might be well to give the parents a turn.

There was a time when "home" and "school" were held to denote opposite and conflicting things, like "theory" and "practice," "poet" and "critic," "promise" and "performance." The term, or the "half-year," as they used to say, was a time of distress and darkness. The master and his satellites were regarded with implacable suspicion if not with deeprooted hatred. Places of instruction were scenes of perpetual torture and agony. "Many a schoolmaster," says Fuller, "better answereth the name of *paidotribes* than *paidagogos*; rather tearing his scholars flesh with whipping, than giving them good education. No wonder if his scholars hate the Muses, being presented unto them in the shapes of fiends and furies. Junius complains "de insolenti carnificina" of his schoolmaster, by whom 'conscindebatur flagris septies aut octies in dies singulis.' Yea, hear the lamentable verses of poor Tusser in his own life :—

From Paul's I went to Eaton sent.
 To learn straight waies the Latin phrase.
 When fifty-three stripes given to me

At once I had.

For fault but small, or none at all,
 It came to passe, thus beat I was ;
 See, Udall. see the mercy of thee ;

To me poor lad.

Such an Orbilius mars more scholars than he makes. Their tyranny hath caused many tongues to stammer which spake plain by nature, and whose stuttering at first was nothing else but fears gnawing on their speech at their master's presence, and whose mauling them about their heads hath dulled those who in quickness exceeded their masters." And there is endless evidence of a much later date than that of the author of the *Holy State* as to the plagosity of the schoolmaster of the old day. Nor were there counterbalancing comforts. The domestic arrangements were rough and rude. "Shades of the prison-house" did indeed "close upon the growing boy," and he must have inclined to think that hell rather than heaven "lay about" him in those direful hours. It may well grieve our hearts to think

What man has made of man,

and what he has made of boy, and also what boy has made of boy. No wonder if suffering humanity at times broke out in open rebellion. One could not have wondered if a French Revolution on a small scale had been occasionally enacted. What a significant feature of the old school life was that custom of "barring out!" There was scarcely any disguise as to the relation between pupil and teacher. "Tu pulsas, ego vapulo tantum." In those rough times home was indeed dear to the youthful Briton. It was his refuge, his asylum, his strong fortress. We do not mean to say that there flagellation was unknown; nor do we forget that there were cases where the teacher was milder than the parent. "When I am in presence either of father or mother," says Lady Jane Grey, according to Ascham, in a well-known passage, "whether I speak, keep silence, sit, stand, or go, eat, drink, be merry, or sad, be sewing, playing, dancing, or doing anything else, I must do it, as it were, in such weight, measure, and number, even

so perfectly as God made the world; or else I am so sharply taunted, so cruelly threatened, yea presently sometimes with pinches, nips, bobs, and other ways which I will not name for the honour I bear them, so without measure misordered, that I think myself in hell till time come that I must go to Mr. Aylmer, who teacheth me so gently, so pleasantly, with such fair allurements to learning, that I think all the time nothing whiles I am with him. And when I am called from him, I fall on weeping, because whatsoever I do else but learning is full of grief, trouble, fear, and whole misliking unto me." In the old days as in the new there were harsh parents, who made life bitter to every one depending upon them; and in such instances even school may have been found a delicious contrast. But, as a rule, "breaking-up" day was hailed with unqualified exultation. What school song can compare with the *Dulce Domum*? That is the only song we know that is the genuine inspiration and offspring of school life. Whoever wrote it was a faithful interpreter of that life. It is the one schoolboy anthem—"Nobile canticum, dulce melos":—

Post grave tædium
Advenit omnium
Meta petita laborum

Concinamus ad Penates
Vox et audiatur.
Phosphore, quid jubar
Segnius emicans
Gaudia nostra moratur?

But suppose we should now have to revise this famous ode. Just suppose a new version whose burden should be "Dulce scholam resonemus."—"Scholam, scholam, dulce scholam, dulce scholam resonemus." Our ancestors are probably at this moment turning in their graves at the mention of such a supposition. And yet is it so extravagant? It is a positive fact that the end of the scholastic term is not welcomed with the fervent avidity with which it used to be. The development of those games which can be really enjoyed where boys are gathered together in large numbers accounts for much of this change. Cricket is made difficult when the eager votary can secure only the co-operation of an occasional friend, or John the footman, of the coachman's son. The character of that man by exercise is modified when a lady cousin, however fascinating, stand "point," or an aunt, however well meaning, keeps wicket. And our young friend in the very midst of his holidays pines for the society of Robinson minor and Jones tertius and Smith centesimus, albeit such intercourse can only be secured by a return to the domains of "the Doctor." We may, indeed, take this development of school games—whether it is over-done or not is not here the question—as a sign of the school change we are noticing. It has taken place mainly because masters have begun to interest themselves in such matters. And they have done so because they have wished to improve and ennoble their relations to their pupils. Friendship between boy and master—a rare relation indeed in the older days—has become not uncommon. The great gulf that seemed fixed between them has been, if not altogether filled up and removed—perhaps it may never be that—yet narrowed and made shallow, so that they can embrace across it, and pass over it on the other. The schoolmaster's idea of his office has materially improved. He is not content to be a mere "gerund-grinder." He sees in his work something worthy of the exertion of his best powers and energies. The body has responded well to the interest shown in him. He has ceased to hate his usher as a

matter of custom and necessity. What a bond of affection when, work hours over, his form-master bowls him out, or he pays his form-master that compliment! The work hours themselves are less heavy-winged and tedious than they were wont to be. All work and no play may make Jack a dull boy; but all play and no work makes the said Jack a yet duller boy. And Jack has some inkling that it is so. He begins to see a connexion between vigour in the class-room and vigour in the field. Thus school life has undergone a transformation. It is no longer the pure weariness and misery it once was. The accommodation and the food have been correspondingly improved. We believe that there are many cases where boys live better at school than at home. At all events, all ground for complaint on this score has been taken away. It can no longer be said that schoolboys are generally ill housed and ill fed.

Now, the schoolmaster having so much improved and the schoolboy flourishing so abundantly, ought not something, we ask, to be attempted for the parent? In one way danger may spring from a prevalence of good schools. We mean that parents may be in danger of leaving everything to the master, and forgetting what they themselves ought to do for their children. Is it not so? How suspicious in more ways than one are the discussions that arise from time to time as to the length of the vacation! Is not some relief generally felt when the young gentleman's furlough is exhausted? "Heu Rogere! fer coballos!" cries Paterfamilias, not without an inner exhilaration; while his spouse views her young Hopeful's receding form *rectis oculis*, and, says grandmamma, "Now for a little peace." And the boy himself does not break his heart about going. "Some natural tears" he sheds perhaps, if he is in the lower school; but certainly he "wipes them soon." And he is as happy to-morrow as he knows how to be. One would really think, to look round nowadays, that the admonition in the Bible—a book to which people still profess to listen with deference—about the bringing up of children was addressed not to the parents, as it is, but to schoolmasters; or, to pass from St. Paul to Juvenal, that the great satirist's words were to be accepted in a quite literal sense, and the opinion held that preceptors should take the place of parents, and make them superfluous. The preceptor should no doubt, be *parentis loco*; but also, and this is what seems becoming obsolete in the nineteenth century, the parent should be *præceptoris loco*. It is not that the schoolmaster usurps the authority and position of the parent. Indeed one may hear him grievously complaining that so much is devolved upon him. He does not carry off the children; but they are thrust into his arms by their amiable kinsfolk. In these times parents have no time to look after their offspring. The claims of society are so exacting and absorbing that it is a marvel they even know them by sight. Presently a son will need a letter of introduction to his own father; and a mother meeting her daughter casually will say, looking at her neighbour, to speak Homerically, "Who is that sweet girl?"

How can this danger be encountered—this danger of good schoolmasters making bad parents? Shall we organise a Baptismal Service Reform League? For the way in which parents are ignored in that ritual is singular in the extreme. We fear that such a movement would scarcely suffice. Shall we turn to the pulpit, and beg for sermons on the subject? But sermons are so seldom up to the mark or heard with attention; and

Phtheirusin aithai chraisth omiliai kakai.

That is, bad homilies corrupt good manners—an obvious rendering of a well known passage, which has, we believe, escaped notice hitherto, and which we beg to recommend to the Few Testament Revisionists. What we venture to suggest is that one or two large schools should be founded for the special behoof of parents. We cannot here go into any minute details of our scheme. We will only say that the terms need not be long, so that "Society" need not be defrauded of its victims to any serious extent. The system should be one of what is called "mixed education," papa and mamma being place in the same form. The forms should be constituted according to the size of the various families patronizing the establishment. Thus, the first form should consist of parents with one darling; the second of those with two, &c. For those with families of any extraordinary number, any number exceeding six—"unhappy is he who hath his quiver full of them" (that is the right reading in these times)—some special provision would be made. There should be a constant supply of other people's children, hired by the day or the week, for the pupils to do their exercises with or on. For those at the top of the school one or two picked undergraduates would be provided for experiments. A prodigal son would be always kept on the premises for reclaiming lessons. But we have no space now to elaborate our proposal. We throw our bread upon the waters—not to find it perhaps after ever so many days; but yet we throw it. Surely some City Company might be found to do something in the way of endowment. Is there no Mr. Holloway to be found?

If the scheme we have ventured briefly to sketch finds no favour with the public, we hope somebody will devise some satisfactory substitute for it; for indeed the danger we have indicated is a real one. A race of mothers that are no mothers, and fathers that are no fathers, if we may use a Greek way of speaking, is not one to be contemplated with pleasure, or that can prevail with impunity.—*Saturday Review.*

The Kindergarten.

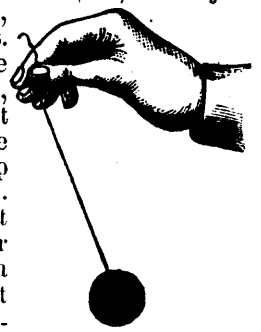
By Miss S. E. Blow.

It is a truth now universally recognized by educators that ideas are formed in the mind of a child by abstraction and generalization from the facts revealed to him through the senses; that only what he himself has perceived of the visible and tangible properties of things, can serve as the basis of thought, and that upon the vividness and completeness of the impressions made upon him by external objects, will depend the clearness of his inferences and the correctness of his judgments. It is equally true, and as generally recognized, that in young children the perceptive faculties are relatively stronger than at any later period, and that while the understanding and reason still sleep, the sensitive mind is receiving those sharp impressions of external things, which, held fast by memory, transformed by the imagination, and finally classified and organized through reflection, result in the determination of thought and the formation of character.

These two parallel truths indicate clearly that the first duty of the educator is to aid the perceptive faculties in their work by supplying the external objects best calculated to serve as the basis of normal conceptions by exhibiting these objects from many different standpoints, that variety of interest may sharpen and intensify the impressions they make upon the mind, and by presenting them in such a sequence, that the transition

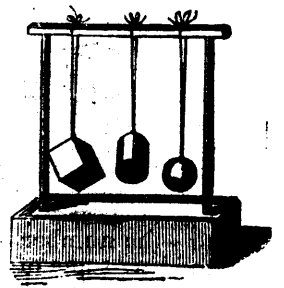
from one object to another may be made as easy as possible.

The advocates of the Kindergarten believe that FROEBEL has met this fundamental necessity in education better than any other thinker, and that the series of objects technically called FROEBEL'S Gifts, offer the healthiest nourishment yet discovered for the child's mind, and constitute the best basis yet known for strong and harmonious development of the intellectual powers. It is my purpose to-day to describe these gifts briefly, in the order of their succession: to indicate their connection, and to try to make clear the law by which their sequence is determined. Recognizing clearly the necessity of a definite starting-point for thought, FROEBEL presents to the child in his first gift the ball, an object containing, under the simplest form, the properties common to all things. By means of the ball, we illustrate the general properties of size, color, form, weight, and density, while at the same time we give the child the easiest thing in the world to grasp alike with the hand and the mind. It is the simplest of forms, for it has neither sides, corners, nor edges. It is easy to conceive as a whole, for in all positions it appears the same. It is the fundamental form throughout nature, and is constantly appearing both in the organic and inorganic worlds, and, finally, it is perfectly harmonious, being, one might almost say, the ideal form towards which the universe strives. To the child, moreover, the ball is the source of infinitely varied amusement. He rolls it, he tosses it, he whirls it round and round. Holding it by a string, he moves it up and down, right and left, round in an ever-widening or an ever-narrowing circle. It becomes to him the representative of a thousand things; through its form it stands for the fruits and flowers he has learned to love; through the motions he gives it, it becomes to him the springing cat, the flying bird, the climbing squirrel—all the objects with which his little experience of life has made him familiar, are embodied in it, and just from its great simplicity result its manifold adaptations.



As introduced into the Kindergarten, the first gift consists of a box containing six soft worsted balls of the different primary and secondary colors. These balls should be so used that the child will learn through actual experience all their essential characteristics, both in rest and in motion, in their relation to each other, and in their relation to himself.

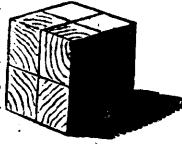
The second gift, which consists of a hard ball, a cube, and a cylinder, involves at its basis recognition of the truth that in order to clear knowledge there must be comparison, or, in other words, that we only learn what a thing is by learning what it is not. Therefore, to complete the child's knowledge of the ball, he must compare it with something else, and as his powers are too weak to discern slight divergences, he needs an object which presents to it the completest possible contrast. This we find in the cube. Instead of the unity of the ball, we have in the cube variety; instead of the simplicity of the ball, we have in the cube complexity; instead of the unvarying uniformity of the ball, we have in the cube an object which changes with every modification of position, and



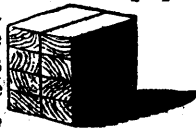
every acceleration of movement—instead of the ready movableness of the ball, we have in the cube an object which, as it were, embodies the tendency to repose.

The cylinder forms the connecting link between the ball and the cube. Like the ball, it is round and without corners, and like the cube, it has sides and edges. It contains the ball, and is contained by the cube, and it unites the movableness of the one with the fixedness of the other.

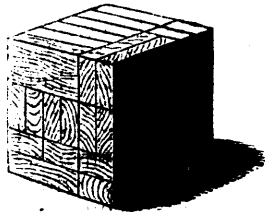
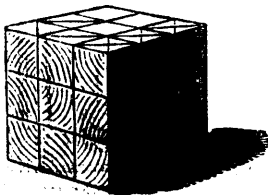
In the third gift, which consists of a cube divided once in every direction, giving eight smaller cubes, we pass from contrasts of form to contrasts of size. This gift, considered as a whole, is identical with the cube of the second gift, but through its divisions it enables the child to grasp inner conditions as well as external appearance, leads from the conception of a simple unit to the elements of which such unit is composed, thus paving the way for rational analysis. And as every analysis should end in a synthesis, every division of the cube into its parts is followed either by their recombination into the original whole, or by the production of a new whole, of which each small cube is again an essential part. Thus the third gift meets the instinctive craving of the child to find out what is inside of things, and at the same time, through the number and variety of its possible transformations, it satisfies and stimulates the creative powers. This gift is also excellently adapted to give children definite ideas of number, and only those who have seen the little calculators making all possible combinations of their eight cubes, can understand how the experiences thus obtained will simplify arithmetic, and make it a pleasure instead of a torture, alike to teacher and pupil.



The fourth gift, like the third, is a divided cube, but in its subdivision we have blocks, whose sides are oblongs instead of squares. And whereas, in the small cubes of the third gift, the length, breadth, and thickness were equal, the parallelepipeds of the fourth gift are twice as long as they are broad, and twice as broad as they are thick. Thus the three dimensions of space implied in the third gift are emphasized in the fourth, and all the possibilities latent in the former are actualized in the latter.



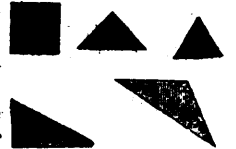
As all development moves from the simple to the complex, and as in the child what is new unfolds from the old so in the Kindergarten gifts which are intended to be an objective counterpart of subjective process, we find each new gift contains all that existed in the previous gifts, with the addition of elements which they implied, but did not realize. Thus in the fifth gift we again have the cube—this time, however, the cube is



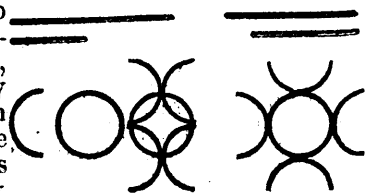
larger—the number of its parts is greatly increased and by dividing some of the smaller cubes, the triangular form is introduced. A greatly increased amount of material is thus put into the hands of the child, and alike in extended numerical relations, in variety of fundamental forms, and in adaptability to creative purposes, this gift is an advance upon its predecessors. With the sixth gift, which is a cube of the same size as the fifth, but differs in its subdivisions, we complete the series of solid forms.

To understand these gifts we must clearly and definitely apprehend their relation to each other, for it is this relation which gives them their significance, and upon the recognition of this relation depends the power with which they are used. We conceive nothing truly so long as we conceive it alone. It is only when the relations of any individual object to universal law are rightly apprehended, that a clear insight into its nature is gained. Now the universal law of development is progress from the unlimited to the limited, from the homogeneous to the heterogeneous, from simplicity, with its manifold adaptations, to complexity, with its defined parts and restricted powers. Illustrations of this law are all around us. It is written on all inorganic nature; it unfolds itself yet more clearly in the plants and animals. Man, too, is no exception to it, but physically, mentally, and morally progresses under the conditions which it imposes. Clearly the law of human development should be the law of education, and the great originality of FROEBEL as a thinker consists in his recognition and application of this vital truth. It was this underlying thought which determined in his mind the sequence of the six gifts just described, and any person who will carefully study them, will find that there is in them a gradual advance in definiteness and complexity, and that each successive gift limits the freedom of the child, while vastly increasing his power within the boundaries defined.

Education, however, must move not only from the simple to the complex, but from the concrete to the abstract. Hence in FROEBEL'S seventh gift we pass from the solid to the surface, and give to the child first squares, and then the different kinds of triangles. To preserve the connection of the gifts and to derive the surface, as, logically, it must be derived from the solid, the square is represented as the embodied side of the cube. The right-angled isosceles triangle is then derived from the square by the diagonal line, and with this triangle as the standard of comparison, the other triangles are also illustrated and defined.



The interlacing slats of the eighth gift form the transition from the surface to the line. These slats rudely represent the line, while, by breadth, they are still connected with the surface. They are succeeded by the sticks and wires which visibly



embody the line, and through which the child learns to conceive the line as the boundary of a surface, just as he previously conceived the surface as the boundary of a solid. The limit of analysis is reached when we move from the line to the point, and in Germany there has recently been introduced into some of the Kindergartens the occupation of sorting, arranging and combining into different forms, small pebbles or shells, which are intended to represent the embodiment of the point. The sorting of seeds for the gardens also comes under this head, and with these crude material representations of the point is completed the series of the Kindergarten gifts.

I trust, from what has been said that the following points with regard to these gifts have been clear:

1. That the method of procedure—by which the successive links in the series are obtained, is strictly analytical. Thus, by analysis of the solid we obtain the surface, by analysis of the surface the line, by analysis of the line the point.

That in using these gifts the child effects no transformation of material—he neither adds to, diminishes, nor modifies what is given him, but simply classifies, combines, and arranges the elements he receives.

We pass, now, from the Kindergarten gifts to the Kindergarten occupations, and, before I attempt to explain these, I wish to correct the generally prevalent idea that they are only mechanical employments, and that their purpose is simply to train the hand of the child, and to serve as a foil to the more intellectual exercises with the solid and plane geometric forms. The Kindergarten is not a school, where lessons are alternated with fancy work, and there is no broad distinction between gifts involving more or less intellectual effort, and occupations implying principally mechanical neatness of execution. The occupations of the Kindergarten are based upon the same general laws and regulated by the same general principles which apply to the gifts, and their effect upon the total harmonious development of the child is even more striking than the effect of the blocks, squares, triangles, and sticks, to which they are sometimes most injudiciously subordinated.

The true distinction between the gifts and occupations is, that while the former are derived by analysis from the solid, the latter are evolved by synthesis from the point, and while in the former the child simply makes different combinations of the definitely determined material, in the latter there is progressive modification and transformation of the material itself. Thus, from pricking where all kinds of harmonious figures are produced, by simply sticking holes in paper, we pass to the line in sewing and drawing—to the transition from the line to the surface in weaving and interlacing of paper—to the surface itself in the squares of paper used for folding and cutting—to the outlines of solids in paper-work—to the surface boundaries of solids in the cardboard modeling, and to the solid itself in the modeling in clay. Thus, by a different road, we have reached our original starting-point, or rather, having made a kind of spiral ascent, we are now surveying the same truths from a higher plane. A vital point of connection between the gifts and the occupations lies in the fact that the latter offer the child the best possible means of embodying in visible and permanent form the impressions received through the former. Thus in pricking, sewing, and drawing, the children, when told to invent almost invariably begin by reproducing the forms with which they have become familiar in their play with blocks and sticks—the same truth applies to their inventions in mats, paper-folding, and paper-cutting—and an intelligent teacher can judge absolutely of the effect of her work by the free productions of her scholars.

Thus far, we have considered the Kindergarten and gifts and occupations simply from the stand-point of their effect upon the intellectual development of the child. They have, however, an additional significance in the fact, taken together, they form a complete alphabet of work and exercise the hand in all the technical processes by which man converts raw material to his use. Ever since the days of Locke, thinkers and philanthropists have been trying to solve the problems of educating skilled laborers, and many have been the experiments of schools for the working classes, nearly all of which have failed, because built on a wrong foundation. The truth which FROEBEL plainly saw, was that the schools should strive, not to turn out good shoemakers, bookbinders, or watchmakers—not, in fact, to teach any special trade, but to give such preparatory training and practice as would make all technical processes simple. Upon this basis he organized the Kindergarten gifts and occupations, and, taken together, they represent every kind of technical activity.

from the mere agglomerating of raw material to the delicate processes of plastic art.

Thus FROEBEL's gifts have a threefold purpose and a threefold application. Based upon the unchangeable facts of form and relations of number, they work powerfully in a direction of a healthy development of the mind, by their countless beautiful combinations of color and form, the æsthetic nature is roused, and by the practical work they necessitate the senses are sharpened and the hand is trained. They appeal to the whole nature of the child, reaching at once his intellect, his emotions, and his physical activities, and contribute to produce a balanced development not attainable, I believe, by any other system. So much for the Kindergarten material. A few words now as to the manner in which this material is used.

The practical basis of the Kindergarten method is expressed in the formula "We learn through doing." It was a favorite saying of FROEBEL's that the world is sick with thinking and can only be cured by acting; and accordingly in the Kindergarten free activity is the essential thing. The children roll and throw their balls, build with their blocks and lay figures with their sticks; they fold, they sew, they weave, they model, and gradually the labor of the hand clears the thought of the mind, and by using objects as material for work their properties and powers are learned. In this lies the great difference between PESTALOZZI and FROEBEL; for while the object lessons of the former appeal directly to the powers of observation, the latter realized that children would never carefully and exhaustively observe any object with which they were not practically occupied. Children in the Kindergarten observe, because they are constantly trying to reproduce, and their failure to attain satisfactory results causes them to notice objects more and more carefully. Another excellent result of FROEBEL's demand that the child shall learn through doing, is that it effectually prevents that rapid acquisition of superficial knowledge which is the bane of the present age. It is true that the path of learning should be made pleasant; it is not true that it should be made so smooth that it may be trodden without effort. He who struggles up no Hill Difficulty will never reach the Palace Beautiful, and the plan of constantly removing obstacles, instead of encouraging pupils to surmount them, both enfeebles character and destroys the vitality of the mind.

In the Kindergarten the children work for what they get, but the steps by which they advance, are so gradual that whenever they make a faithful effort, they attain some result. Consequently, they gain faith in their own ability to surmount obstacles, and develop in mind and will, at the same time that they are constantly adding to their little store of ideas and experiences. Again, what they know they must know thoroughly, for the mind can only use and apply what it has perfectly assimilated, and the salient feature of FROEBEL's method is that it transforms every element of knowledge into an element of creation.

If the practical basis of the Kindergarten is expressed in the formula "We learn through doing," its intellectual basis is stated with equal definiteness in FROEBEL's so-called Doctrine of Opposites. No feature of FROEBEL's method is so difficult to explain as this, and yet it is the living link which connects the different parts of the system into a complete whole, and as applied practically in the Kindergarten, is as simple in its nature as it is fruitful in its results. It is based upon the logical law of the identity of contraries, a law which many philosophers have recognized as the necessary condition of thought. We cannot conceive anything without

implying its opposite. We cannot think *up* without implying *down*. We cannot think of *light* without implying *darkness*. We cannot realize *extension* without assuming *limitation*. "In all distinction," as has been well said, "the element effective of distinction works through negation, and, therefore, affirmation, and negation, identity and difference must be taken together as constituting between them but a single truth."

FROEBEL claims that as our thought is conditioned by this law, education should recognize and apply it, and he embodies it in the statement that "the principle of all creative activity is the reconciliation of opposites by an intermediate partaking of the nature of each of the extremes. This law governs the application of every Kindergarten gift and occupation, and while its philosophic basis can only be mastered by earnest thought, it is practically so simple that the child four years old uses it with the greatest ease and happiest results. The countersigns of true Kindergarten are "Reverse, and keep your opposites alike," and I feel sure that any person who will honestly observe the effect of this principle in the development of originality and creativeness, will admit that FROEBEL has found the true law of human activity, and has shown how it should be applied.

A system based upon the necessities of the child, must naturally provide for physical exercise and development. Accordingly, in the Kindergarten gymnastic games, accompanied with song, are an essential feature of each day's programme. In these games the children get abundant opportunity for using their legs and arms, while the fact that nearly all of them are more or less dramatic, makes them also developing to the imagination and sympathies.

From the moral stand-point the chief significance of FROEBEL's method is the recognition of the child, both as a distinct individual and as member of a collective organism. The great problem for man has always been to harmonize the freedom of the one with the interests of the many, and to secure the development of the individual without sacrificing the order and stability which are the safeguards of general society. In the Kindergarten the children are associated together under the most favorable conditions, and while individuality is strongly developed, each child early learns that his rights are limited by the rights of others. The only punishment inflicted is isolation of the selfish, willful, or quarrelsome child from the society of his companions; and on the other hand, where praise is given, it is given not by the teacher alone, but by teacher and children together. Thus the Kindergarten is a world in embryo—a world where small virtues are nursed into strength by exercise, where small faults are gradually overcome, because their effects are clearly seen, and where character is harmoniously developed because the same truths realized as law are felt as love.

The results of FROEBEL's system thus far have been partial and inadequate, because in many cases its principles have not been understood and applied. Its vitality and power are proved by the fact that through all discouragements it has steadily won its way, and every day challenges more imperatively the attention of educators. Planted now in all parts of Germany—made by Imperial edict the basis of education in Austria, and introduced, though imperfectly, in Russia, France, Italy, England, and the United States, its merits will in the next few years be widely and thoroughly tested, and the general applicability of its methods determined. Its advocates ask only that it maybe judged by its fruits, and, as their most conclusive argument, point to the children trained in accordance with its principles.

Improvement of the memory.

Is memory the purveyor of reason? If so, ought we not to do all in our power to cultivate or improve it? We have frequently had occasion to remark that many inapt individuals have an extraordinary advantage over acute and energetic men in consequence of their brilliant memories. Some are born with a memory, some cultivate the "rough diamond." Nature is kind indeed when she bestows this gift; but let those who are not so blessed console themselves that "art" treads very closely on nature's steps, and very often supplies missing links.

It would be absurd on our part to argue for a moment that it is possible to supply endowments which have not been conferred on an individual by nature, but still we all know a great deal may be done towards attaining a point of perfection; and in the case of the memory, nothing can be more simple than to cultivate it, provided it be done before a person is twenty-one years of age, and even then there are various degrees of success.

It is absolutely essential that if a person wishes to enter the legal profession and attain a tolerably high position, he should have a good memory; but those who have bad memories must not run away with the idea that there is no means of improvement.

For the benefit of those who aspire to something beyond merely passing an examination, viz., distinction in after-life, we offer the following remarks:

There is, as we said on a previous occasion, a distinction between memory and recollection. Memory retains ideas without any or with little effort; but recollection implies an *effort* to recall ideas that are past. Great care should, therefore, be taken not to confuse them. Indeed, we have been frequently told by some that they have good memories, because they could recollect *certain* incidents which occurred years ago. If any peculiar means be adopted to impress a subject or event or any extraordinary incident on the mind, the person remembering it would surely not say he has a good memory (?) A person may remember perfectly well the circumstance of the Prince of Wales going to St. Paul's on Thanksgiving Day, or the latest attempt on the life of Her Majesty, or the O'Connell Centenary in Dublin, but yet would not remember a single fact that he may have read in a book, though he had gone over in twenty times. Hence it is perfectly apparent that the excitement of the peculiarity of the former events makes an indelible mark on the memory. We therefore see that measures ought to be adopted, as far as possible, to deal with facts and circumstances very clearly. It is not a fact that many persons can derive benefit by copying what they have to learn? A person, as a rule, cannot write as quickly as he can read. We often, while lecturing, make certain remarks in order that our hearers may be impressed with what we say, and in innumerable instances we have been informed that whenever we have again referred to the various point of the same subject the remarks crossed the memory with them.

The memory, we contend, ought to be cultivated when a person is young—when the brain is growing. No doubt there are many ways of improving it; but the simplest and, at the same time, the most effectual method for the student to adopt is to learn a verse of poetry every evening, just before he retires to rest, and say it by heart on the following morning. If he continued this practice for two or three months he will certainly derive incalculable benefit from it. It would scarcely take him many minutes to learn to say either of the following verses, and in time he would have his memory stored with many interesting pieces:

How happy is he born and taught
That serveth not another's will;
Whose armor is his honest thought,
And simple truth his utmost skill!

Lament who will, in fruitless tears,
The speed with which our moments fly,
I sigh not over vanished years,
But watch the years that hasten by.

Keep pushing—'tis wiser
Than sitting aside,
And dreaming and sighing
And waiting the tide.
In life's earnest battle
They only prevail
Who daily march onward,
And never say fail!

Some persons prefer studying in the evening, others rise at four o'clock in the morning. We recommend those who have not laid down any rule, to adopt the following course: They should retire to rest about an hour and a half before their usual time, and continue studying the required work until they gradually fall asleep. We must here remind them to be careful where they place the lamp. On the following morning they should read the work once or twice, and say it without the book; or if it be work which they do not wish to learn word for word, they may ask a friend to hear them. This method will, in most cases, have the desired effect, and the matter will be retained in the memory for months, it may be years. The matter becomes, as it were, photographed on the mind. In our younger days we tried this method, and have since recommended it to our pupils, who have assured us that they we also derive considerable benefit from it. Of course, the student must continue it for two or three months, though he will derive some benefit after a few trials.—*Irish Teachers' Journal.*

POETRY.

Autumn.

'Tis the golden gleam of an autumn day,
With the soft rain raining as if in play:
And a tender touch upon everything,
As if autumn remembered the days of spring.

In the listening woods there is not a breath
To shake their gold to the sword beneath;
And a glow as of sunshine upon them lies,
Though the sun was hid in the shadowed skies.

The cock's clear crow from the barnyard comes,
The muffled bell from the belfry booms
And faint and dim, and from far away,
Comes the voices of children in happy play.

O'er the mountains the white rain draws its veil,
And the black rocks, cawing across them sail,
While nearer the swooping swallows skim
O'er the steel gray river's fretted brim.

No sorrow upon the landscape weighs,
No grief for the vanished summer days:
But a sense of peaceful and calm repose
Like that which age in its autumn knows.

The spring time longings are past and gone,
The passions of summer no longer are known,
The harvest is gathered, and autumn stands
Serenely thoughtful with folded hands.

Over all is thrown a memorial hue,
A glory ideal the real ne'er knew;
For memory sifts from the past its pain,
And suffers its beauty alone to remain.

With half a smiles and half a sigh
It ponders the past that has hurried by:
Sees it and feels it and loves it all,
Content it has vanished beyond recall.

O glorious autumn, thus serene,
Thus living and loving all that has been!
Thus calm and contented let me be
When the autumn of age shall come to me.

—*Blackwood's Magazine.*

THE JOURNAL OF EDUCATION

QUEBEC, NOVEMBER 1875.

**Report of the Minister of Public Instruction of
the Province of Quebec for the Year 1873-74
and in part for the Year 1874.**—(Continued.)

TEACHERS' ASSOCIATIONS.

There are now in existence four large teachers' associations, two for the protestants and two for the catholics; and subjects of the highest importance to education are treated and discussed in each of their conventions, where broad views and much practical good sense are brought to bear upon the matters submitted. Each one there communicates to his fellow teachers the fresh knowledge he has gained, and imparts his new experiences in teaching. It would be a good thing if all the teachers, male and female, could form part of those associations. I invite all those, at least, who can do so, to enroll themselves in this fine peaceful army of progress, whose mission is not less grand nor less useful than that of the army which protects our frontiers. For if the latter protects the inhabitants, the former trains up men to worthily fill the place they may occupy in society.

The four existing associations have already done a great deal of good; but many of the teachers are prevented from attending the conventions owing to the distance they live from the place of meeting. It would therefore be advisable to establish local associations. Each county, or division of two or three counties ought to have its particular association, and I hope that the School Inspectors will use every effort to bring about this result. They could themselves take the direction of those associations, give conferences, and especially furnish all required information as to the discipline and proper maintenance of a school, and as to the most efficacious manner of teaching the several matters laid down in the programme of teaching. Without doubt such action would produce a good effect. Those practical lessons learnt from experience, would help and encourage those who might not have the advantage of following the courses of a Normal School. The whole body of teachers would gain thereby in public estimation. It would be no longer represented by isolated members, but would form an important part of society, fulfilling courageously the noble task to which it has devoted itself.

School Commissioners should do all in their power to assist these associations, and even not hesitate to furnish a small allowance towards travelling expenses. They would be amply repaid by the progress which

would everywhere result from a better system of teaching. These teachers' associations are recommended nearly every where by the superintendents of education throughout the American Union, where great importance is attached to them, and where they are regarded as one of the surest means of advancing popular education.

MR. LE ROY'S SCHOOL.

Mr. Le Roy, who arrived in this country during the course of the year, has long labored to simplify the instruction given in schools. His system, which can be adopted to all subjects taught in schools, has been so far applied principally to the study of the french, latin and greek languages. By his method a language can be learned in much less time than by the ordinary method. By means of charts and with the instructions of the professor, the student can see and understand what he is learning, and perfectly comprehend its object. I assisted, with several persons who were competent to judge in such matters, at some public lessons given by Mr. LeRoy. From what I saw myself and from opinions I heard expressed, I thought I was justified in recommending that a sum not exceeding one thousand dollars be granted to Mr. Leroy to cover expenses of printing the charts and books rendered necessary by his opening a class in an apartment placed at his disposal by the Federal Government, at my request. This sum will also suffice him to pay such assistant as he may require. If after one year's trial the results justify my expectations, the money so granted will have done an immense good to the cause of education.

Let it be well understood however, that it was not my intention to establish this school as a rival to our existing educational institutions. I have too much confidence in the men who direct those establishments, and I too sincerely respect the teaching body in this country to wish to create a dangerous rivalry. But I thought that science and the teaching system could not but gain by the trial of various methods which are the fruit of earnest study, and formed with good intentions.

Under this head I think it opportune to mention Count de Zaba's new method of teaching history. This method is based principally upon a very ingeniously constructed chart upon which the principal events of a century are grouped in colored squares easily retained in the memory, and with the aid of which, one can in a moment find a date or a forgotten fact.

I have not the slightest doubt that this system may be advantageously used in our academies for boys and girls, as well as in colleges and other institutions for superior education. At any rate, I willingly recommend its trial, persuaded that it would give excellent results.

OUR EDUCATION LAWS.

As I announced in my last report, after having discussed our education laws with all the school inspectors united at a conference, I consolidated, or rather codified those laws. This work was laid before the Legislature at the last session, but circumstances did not permit me to submit it for discussion. It will be brought before both houses at the next session, and I hope that it may obtain their general consent, at least its principal enactments.

I thought it right however to define in a more marked manner our position as catholics, so as to avoid later those violent agitations which are felt elsewhere, where the legitimate rights of the minority are completely ignored. Although our catholic schools in this pro-

vince are practically separate schools, still the law is not explicit enough to furnish our coreligionists with the guarantees which they claim. We must know how to respect the rights and privileges of other religious denominations, without however forgetting our own duties.

TEACHERS, PENSIONS AND SCHOLARSHIPS.

Since the establishment of a superannuation fund in favor of teachers of both sexes who from old age or sickness have discontinued teaching, the Department has paid each year a certain sum to such subscribers who had fulfilled the conditions required by the rules of the fund. Unfortunately the number of such subscribers is rather small. The advantage of securing a small pension for their old age does not seem to be sufficiently understood; they generally expect it later but only when it is too late. Very often the Department receives applications, which it is unable to grant, because the parties applying had neglected to subscribe to the fund and pay the annual premium. Some modifications might be made to the system as at present established. I intend to study carefully the practice followed in other places, and, in so far as the slender means at the disposal of the Department will allow, to borrow useful reforms which I will not fail to suggest for adoption here.

In France, Prussia, and other countries of Europe they have a pension system for their teachers which it seems to me would give excellent results in this country if we could adopt it. It consists in granting a sum of money to the teacher who has spent a certain number of years in teaching, and who still continues in his profession. This sum, increased generally every ten years, is paid him by the government over and above his ordinary salary. This is an excellent way of encouraging the teacher not to abandon his profession for another career, and of inducing him to devote his experience for as long a time as possible to the teaching of youth. I have no doubt that the introduction of such a system here would result in great benefits if a grant of money could be made for the purpose.

The salaries of teachers is a subject which comes up every year, and in spite of all that has been said upon this important matter, it still remains a fact that, especially, in the Province of Quebec the teachers salaries are far below what they ought to be. This is so true that our best teachers, both male and female, discouraged by the poverty and straitened circumstances in which they are constantly obliged to live, leave the profession to make a livelihood by other means. The result is that a large number of municipalities are often obliged to close some of their schools, for want of competent persons to take charge of them.

A change of some sort must therefore necessarily be made, if we do not want to see education at a stand still, and even retrograding.

The salary of a male teacher should be on an average from three hundred to six hundred dollars—that of a female teacher from two hundred to four hundred dollars. It is absolutely impossible to subsist, at this present day, upon a salary less than those *minimum* amounts, especially when as teacher one has to maintain a certain position. The Commissioners should of necessity increase the school taxes so as to be able to pay their teachers properly. On the other hand the Legislature ought also to come to their assistance by means of a larger grant, which ought at least to obtain the figure of \$200,000.

Of all the provinces of the Dominion, the province of Quebec is the one which makes the least sacrifices in

the cause of education, and yet it is not the one that needs them least.

Every one is in favor of education but on condition that it cost nothing. We must favor it and favor it effectively, we must know how to face the difficulty and how to overcome it. Half measures never succeed. If we want the masses educated, let us at once make the necessary sacrifices to obtain that end.

PARISH LIBRARIES.

In my last report I insisted strongly upon the necessity of establishing parish libraries, and I had hoped to obtain a grant for that object. But the aid granted to railroads by the government absorbed so much of the available funds that it was impossible for me to obtain it. I propose reiterating my request at next session under more favorable circumstances and almost with the certainty of obtaining the general consent to it, if the state of the provincial funds allow of it.

I must make the same remark with respect to the depositaries of books, maps, and other schools neces-

saries, the creation of which I had also strongly recommended in my last report.

Our schools will never be well provided with those necessaries until such depositaries be established. To attain this end it would only be necessary to advance the first expenditure for stock, and this sum would be reimbursed, in part at least, according as the sale of articles would proceed. This matter deserves serious consideration, because the establishment of such depositaries would be a powerful element of progress.

It only remains for me to present the following tables, showing the gradual increase of municipalities, school districts, and school houses: these tables give also details as to the nature of the teaching, the sums levied for the maintenance of schools, and on the working of Normal schools.

The first table gives an idea of the gradual increase of municipalities, school districts, and school houses in this Province, every five years since 1858.

It establishes that during that period the increase in municipalities has been 329, in school districts 1148, and in school houses 1328.

TABLE showing the gradual increase of municipalities, school districts, and school houses every five years since 1858

	1858	1863	1868	1873	Increase over 1858	Increase over 1863	Increase over 1868
Municipalities.....	523	634	749	852	329	218	103
Schools districts.....	2722	3487	3462	3870	1148	683	408
Schools houses.....	2053	2573	2969	3381	1328	808	412

The following table indicates a continuous progress in our school establishments since 1853. It may be there seen that the increase of 1873 over 1872, was even large than that of the preceding year; it being for educational establishments 94, for scholars 2549 and for contributions \$86,677

TABLE of the progress of Public Instruction in the Province of Quebec, since 1853.

	1853	1854	1855	1856	1857	1858	1859	1860	1861
Institutions.....	2352	2795	2868	2919	2946	2995	3199	3264	3345
Scholars.....	108284	119733	127057	143141	148798	156872	168148	172155	180845
Contributions.....	165848	238032	249136	406764	424208	459396	438436	503859	526210
	1862	1863	1864	1865	1866	1867	1868	1869	1870
Institutions.....	3501	3552	3604	3706	3826	3712	3913	3912	4028
Scholars.....	188635	193431	196739	202648	206820	208030	212838	214498	217504
Contributions.....	542728	564810	593964	597448	647067	728404	792819	894857	976738
	1871	1872	1873	Increase over 1853	Increase over 1858	Increase over 1863	Increase over 1868	Increase over 1872	
Institutions.....	4063	4143	4237	1885	1242	685	324	94	
Scholars.....	223014	224270	226719	118435	69847	33288	13881	2549	
Contributions.....	952095	7085179	1171856	1006008	712460	607046	379037	86677	

The following table, which gives the number of pupils learning the more essential branches of elementary education, shows a notable increase over the figures presented in the same table, for the year 1872.

Comparative Table of the number of children learning the most essential branches of primary instruction since 1855.—Taken from the large statistical tables transmitted to the Department by the School Inspectors.

Designation of branches studied.	1855	1856	1857	1858	1859	1860	1861	1862	1863	1864
Scholars reading well.....	43407	46940	48833	52099	64362	67753	75236	77108	77679	75555
“ writing.....	58033	60086	61943	65404	80152	81244	87115	92572	97086	99351
“ Learning french grammar.....	23280	28903	29111	32843	4 796	42785	49537	50137	52160	53577
“ “ english grammar.....	9004	8000	12074	15348	14098	19064	21038	22512	23407	22770
“ “ orthography.....	32512	46779	47504	47722	54163	61542	74815	78367	68207	75850
“ “ gramatical analysis.....	16439	19504	25661	33377	29766	36711	49460	50893	52244	47686
“ “ simple arithmetic.....	30631	35397	40070	41730	491 1	47327	543 3	58728	61237	64918
“ “ compound arithmetic.....	22586	23431	26643	28196	30919	31758	41512	44357	45727	46529
“ “ book-keeping.....	1976	3698	4192	8853	5210	5 30	7353	7540	7915	7545
“ “ geography.....	17700	23589	25487	29092	36 94	37215	44592	46541	50163	51543
“ “ history.....	15520	17530	24850	26450	29906	28468	35599	39086	42447	45259

(Continuation.)

Designation of branches studied.	1865	1866	1857	1868	1869	1870	1871	1872	1873	Increase over 1872
Scholars reading well.....	96491	98706	92982	84742	89608	82805	86436	87191	88306	1115
“ writing.....	107171	11703	96988	102796	13105	114508	124262	122460	127 59	4699
“ learning french grammar.....	60753	63672	54379	55041	55459	58605	62883	51924	67309	5385
“ “ english grammar.....	24221	24374	22422	23896	24188	25859	26849	25835	28225	2390
“ “ ortography.....	76808	91904	80709	04767	99500	102 58	119508	101301	13808	12507
“ “ gramatical analysis.....	53 43	5470	48758	60045	60206	25961	56669	56038	57642	1604
“ “ simple arithmetic.....	64071	68981	61930	64994	68306	72072	75959	75837	78799	2962
“ “ compound arithmetic.....	52892	50726	42461	47435	48574	49373	54242	50308	55284	4976
“ “ book keeping.....	8270	84 5	6713	7557	8714	9088	9569	10108	12046	1938
“ “ geography.....	49778	53405	42923	45327	47421	50178	50166	4 520	53261	4741
“ “ history.....	48562	49512	45932	44282	39508	50264	53584	52718	61185	8467

The two following tables show the working of the various kinds of school assessments. Each kind this year shows an increase over last year.

TABLE showing amounts levied for public instruction in the Province of Quebec, from 1857 to 1853 inclusively.

YEARS.	Assessment so as to equal grant.	Assessment beyond the grant, and special assessments.	Monthly fees.	Assessment for building school.	Total levied.
1856.....	\$ cts. 113884 87	\$ cts. 93897 98	\$ cts. 173488 98	\$ cts. 25493 80	\$ cts. 406765 55
1857.....	113887 08	78791 17	208603 37	22928 63	424209 25
1858.....	115482 09	38372 69	231192 65	24646 22	459395 65
1859.....	115792 51	109141 96	251408 33	22087 54	498436 48
1860.....	114424 76	123930 64	249717 10	15778 23	203859 73
1861.....	113969 20	130560 92	261089 11	17000 00	526219 82
1862.....	110966 75	144033 15	28 980 23	11798 84	542528 97
1863.....	110534 25	134888 50	30703 14	11749 76	564810 65
1864.....	112128 34	144515 61	321087 30	15553 12	593264 37
1865.....	112447 09	147158 23	334801 87	13041 57	597448 76
1866.....	119657 35	103732 98	356691 53	22985 32	637067 18
1867.....	112909 64	191072 58	394068 37	24417 46	728494 05
1868.....	113790 64	178174 02	452688 69	47986 17	592819 52
1869.....	123625 44	211211 9	472573 70	97446 03	894857 18
1870.....	123381 08	233773 17	529193 12	90441 24	976788 51
1871.....	15400 19	24679 29	535981 12	46320 39	952095 99
1872.....	140236 98	263686 94	640659 81	40595 96	1085179 69
1873.....	140510 97	265940 14	715661 76	49743 29	1171856 16

TABLE indicating whence arises the differences of increase over decrease between 1^o 1864 and 1863, 2^o between 1865 and 1864, 3^o between 1866 and 1865, 4^o between 1867 and 1866, 5^o between 1868 and 1867, 6^o between 1869 and 1868, 7^o between 1870 and 1869, 8^o between 1871 and 1870, 9^o between 1872 and 1871, 10^o between 1873 and 1872.

					Total increase.	Total decrease.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Increase of 1864 over 1863.....	1623 00	9627 11	13399 16	3803 36	28453 72	
Increase of 1865 over 1864.....	288 75	5642 62	3768 67		4184 39	
Decrease of 1865 over 1864.....				2513 55		
Increase of 1866 over 1865.....	1210 26	1474 70	3 733 36	9041 75	49618 40	
Increase of 1867 over 1866.....	252 29	45365 84	37376 84	1434 14	81426 87	
Increase of 1868 over 1867.....			58800 32	23568 71	64325 47	
Decrease of 1868 over 1867.....	119 00	17924 56				
Increase of 1869 over 1868.....	98 4 82	23037 97	18705 01	49459 84	0 037 43	
Increase of 1870 over 1869.....		32561 18	56619 42		81931 43	
Decrease of 1870 over 1869.....	214 38			7004 70		
Increase of 1871 over 1870.....	621 11	13019 12	6988 00			
Decrease of 1871 over 1870.....				44120 85		23692 62
Increase of 1872 over 1871.....	11233 79	16894 63	104678 60		137408 13	
Decrease of 1872 over 1871.....				5724 43		5724 43
Increase of 1873 over 1872.....	273 99	2253 20	75001 95	9147 33	86676 47	

The two following tables relate to Normal Schools. They give a statement of the working of those schools during the scholastic year just ended. The first gives a comparative statement of the number of scholars in each school, and the second shows the numbers of diplomas of each class granted since their establishment.

TABLE showing number of students who have attend the Normal Schools.

Scholastic years.	Jacques-Cartier School.	McGill School.			Laval School.			Number of male pupil teachers.	Number of female pupil teachers.	Grand total.
	Pupil teachers (male).	Pupil teachers (male).	Pupil teachers (female).	Total.	Pupil teachers (male).	Pupil teachers (female).	Total.			
1st Session, 1857.....	18	5	25	30	22		22	45	25	70
Session 1857-1858.....	46	7	63	70	36	40	76	89	103	192
Session 1858-1859.....	50	7	76	83	34	52	86	91	128	219
Session 1859-1860.....	53	9	72	81	40	54	94	102	126	228
Session 1860-1861.....	52	5	56	61	41	53	94	98	109	297
Session 1861-1862.....	41	10	58	68	39	52	91	90	110	200
Session 1862-1863.....	57	8	73	80	39	52	91	104	124	228
Session 1863-1864.....	56	7	67	74	34	49	83	97	116	213
Session 1864-1865.....	56	5	60	65	43	55	98	104	115	219
Session 1865-1866.....	43	2	73	75	39	57	96	84	130	214
Session 1866-1867.....	41	2	73	75	43	55	98	80	128	208
Session 1867-1868.....	35	5	57	62	47	73	122	89	130	219
Session 1868-1869.....	36	4	70	74	64	73	137	104	143	247
Session 1869-1870.....	46	7	69	76	82	80	162	135	149	284
Session 1870-1871.....	63	6	70	76	54	59	113	123	129	252
Session 1871-1873.....	51	13	94	107	32	56	88	46	150	246
Session 1872-1873.....	46	8	108	116	38	54	92	92	163	254
Session 1873-1874.....	43	6	106	112	43	56	99	92	162	254

DIPLOMAS granted to graduates of Normal Schools since their establishment.

Nature of diplomas granted.	Jacques-Cartier.	McGill.			Laval.			Number of male pupil teachers.	Number of female pupil teachers.	Grand total.
	Pupil teachers (male).	Pupil teachers (male).	Pupil teachers (female).	Total.	Pupil teachers (male).	Pupil teachers (female).	Total.			
Academies	42	18	26	44	42	.....	42	102	26	128
Model School.....	147	55	203	258	130	224	354	332	427	759
Elementary School.....	127	17	547	564	106	294	500	350	841	1091
Totals.....	316	90	776	866	278	518	796	684	1294	1978

The following table showing the results of the sittings of boards to examine candidates for primary school diplomas, gives occasion for the same remarks as in former years, and leaves it still to be desired that the examinations are not every where as strict as we have a right to expect them to be.

STATISTICAL Summary of boards of examiners for 1873.

BOARDS.	Number of days that Boards seat.		Average number of teachers examined each day.	Number of diplomas granted for academies, 1st class.		For academies, 2nd class.		For model schools, 1st class.		For model schools, 2nd class.		For elementary schools, 1st class.		For elementary schools, 2nd class.		Number of candidates admitted and nature of diplomas.			Grand total.	Number of rejected candidates.	
	Number of candidates examined.	Teachers.		School masters.	Teachers.	School masters.	Teachers.	School masters.	Teachers.	School masters.	Teachers.	School masters.	Teachers.	School masters.	Academies.	Model schools.	Elementary schools.				
Beauce.....	1	4	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bonaventure.....	1	3	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Charlevoix.....	3	7	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Chicoutimi.....	2	10	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gaspé.....	4	8	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kamouraska.....	4	26	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Montreal (Catholic).....	7	187	27	1	.....	.....	.....	9	9	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Montreal (Protestant).....	4	43	11	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ottawa.....	4	29	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Quebec (Catholic).....	4	95	24	4	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Quebec (Protestant).....	4	8	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Richmond (Catholic).....	4	24	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Richmond (Protestant).....	2	14	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Rimouski.....	4	21	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sherbrooke.....	4	31	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Stantead.....	4	35	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Three Rivers.....	4	60	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Waterloo & Sweetsburg (Catholic).....	3	6	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Waterloo & Sweetsburg (Protestant).....	3	48	16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	66	662	10	7	.....	.....	.....	11	18	.....	.....	6	20	330	20	190	7	37	560	604	58

In the following table of dissentient schools and their scholars, a visible increase will be noticed in the number of pupils who have frequented the catholic dissentient schools. This number amounts to 1509—in 1872 it was only 835.

TABLE of dissentient schools and their pupils.

Names of schools inspectors.	Protestant dissentient schools.	Number of pupils	Catholic dissentient schools.	Number of pupils.
Alexander Wm. J.....	16	475	7	251
Archambault J. N. A.....	2	52		
Beland P. F.....	1	22		
Boivin S.....				
Caron M.....	18	452		
Carrier Ed.....	3	133		
Crépeault J.....				
Delage J. B.....	4	80		
Dorval A. D.....	10	285		
Fothergill M.....	2	80		
Germain C.....	6	165		
Grondin L.....	15	547		
Hubbard H.....	7	164		
Hubert P.....	3	146		
Juneau F. E.....	4	163		
Laplante L. M.....				
Lucier L.....	4	155	1	53
McGrath B.....	20	924		
McLaughlin J.....	24	592		
Martin V.....	1	25		
Painchaud F. B. F.....	1	24		
Tremblay T.....	6	174		
Rouleau Chs.....	2	65		
Stenson M.....			13	365
Tanguay G.....	1	26		
Thompson W.....	5	196		
Thompson G.....	9	490	13	640
Valade F. X.....	22	724		
	186			

The table showing the working of the Savings Bank offers nothing of particular interest. We can only regret as usual, that the great body of teachers evince so much apathy with respect to a superannuation fund established solely for the purpose of assuring to its members some means of support in the event of retirement or long sickness.

TEACHERS SAVINGS BANK.

YEARS.	Number of teachers who have subscribed every year.	Number of pensioners each year.	Pension tax for each year of teaching.	Total pensioners paid.
1857.....	130	63	\$ cts. 4 00	886 90
1858.....	71	91	4 00	2211 74
1859.....	18	128	4 00	3115 36
1860.....	9	130	3 00	2821 57
1861.....	9	190	3 00	3603 58
1862.....	10	164	1 75	2522 00
1863.....	13	171	2 25	3237 00
1864.....	2	170	1 75	2727 00
1865.....	11	160	1 75	2787 00
1866.....	13	173	1 75	2784 00
1867.....	15	176	1 75	3036 00
1868.....	10	161	2 50	4590 00
1869.....	9	173	2 50	4677 00
1870.....	5	174	2 50	4700 00
1871.....	13	162	2 50	4865 00
1872.....	7	176	2 50	5100 00
1873.....	8	177	2 50	5127 00

GÉDEON OUMET,
Minister of Public Instruction.

MISCELLANY.

School discipline—"Boys are miniature men." Of course the way to discipline them is to emulate the way in which it is best secured among men—that is, in the Army and Navy.

Obedience in battle which makes men march to death, for a "cause," which they understand little, and care for less,—obedience in great things is secured by the of habit obedience in small things; I mean, in daily drill.

Thus, oderly ways of behaving in class produce perhaps the habit of obedience. The habit of obeying such orders as "Class it!" "Class rise!" "Seats!" "Boys leave the room" &c., insensibly produce discipline. But an-unpractised teacher must feel his way in such things and introduce such things by degrees.

How else may we emulate Military Discipline? First let us note that as jokes are unknown to the parade-ground and quarter deck, so we should never

JOKE IN SCHOOL

Shorten the hours of work to five at least, but let work be work and never joke in school. A joke relieves the domnie-killing tedium of school. A joke often explains a thing as nothing else can. A joke is a lubricator whereby facts glide into the memory. But jokes are death to discipline.

The master cracks a good joke. How can he punish some willing pupil for essaying a bad one in repartee, which the class is sure to appreciate much better.

"Full well they laughed, with counterfeited glee,
"At all his jokes, for many a joke had he."

Full often the class laughs at some pointless whispered gibe about the master, under cover of laughing at the excellent jest by which he fondly hoped to gain admiration and good will. The two very best disciplinarians we have ever known in Canada,

never joked in school. In school they never unbent. Out of school familiar and pleasant enough, for its very rareness their kindly work was amusingly over-appreciated.

Similarly all undignified expressions and the calling boys by their nick-names or even Christian names, may be eschewed by the Teacher, just as they are unknown to the Officer.

Again we may infer that those who would govern should be of very few words. Even the hen that sits silent on an addled egg has a reputation for wisdom.

Speak low. To speak low to boys and then to take one of them (to scold or punish many together has little effect or none) severely to task, for not obeying at once, works like magic.

TENNYSON'S PRETTY LINE

"Her low firm voice and gentle government."

should give Dominic the hint required. "Like master, like man." A loud voice in the master insensibly makes every voice and noise in the school louder. If the master speaks low the whispers of a pupil may be detected. It gives him a *reserve* of power, for when he does speak loud it startles and overawes from mere novelty.

Dress well and get the scholars to dress neatly. I know of two masters, whose power of discipline was a "minus quantity," who kept order for some time owing to the imposing faultlessness of their dress. A college gown is not without influence. Teachers should, more than other professional men, "starve the belly to feed the back."

A great aid to discipline is to induce the Trustees to get the room put into excellent order and seeing that the boys keep it so. The out-buildings should be made of unplanned lumber so as to check the disease of scribbling on walls which has haunted boys ever since they went to school at Herculaneum and Pompeii. Ink stains can be washed off the tops of brown ash desks well varnished, and from oiled brown ash they can be sand-papered out and leave no trace behind.

AS TO DESKS,

arrange the scholars at them so as to separate those likely to be congenial in chattering and tricks. To move a chatterbox's seat to one among older uncongenial boys will sometimes make him silent as Progne. Perfect silence can perhaps hardly be secured in our Academies with ease to the master, but a near approach to it should be aimed at.

It is hard to see how emulation can be secured without making the scholars take places in class and marking down the places, giving the last pupil, "one" good mark, the next to the last "two," and so on. This will help to check irregularity of attendance, that bane of Canadian teachers. A good English school would never dream of getting on without "taking places." Or nine marks (to save ever having to enter two digits in one column) may be given for good conduct or each "perfect lesson" each day, and marks taken off for each offence or mistake. We know of one school kept in order by the simple monthly publication of such marks.

BOYS ARE STRICTEST CONSERVATIVES.

On making the new rule in school a teacher might carefully explain its advantage or necessity. When made, he must of course hold to it rigidly, right or wrong. If it does not work he may as well frankly say so and give it up.

As to punishments, the less the better, so long as order is secured. See that the boys get plenty of hard exercise in field, garden, or gymnasium, and they will be much less restless in school. Much better than keeping in is the reward of letting boys go at 3 p. m. in lieu of 4, for good behaviour and when they have done an ample extent of work—which they will do with this stimulus. In six thousand years the world seems to have got as hardened to the threat of punishment as a merchant tailor boy's hand used to be to the cane, and the main incentive to good action seems to be the hope of sure reward,

HERE AND "THERE,"

as Plato expresses it. To summarise. Talk very little. Speak low. Joke never. Never unbend from a scholarly dignity of manner and parlance. Arrange scholars and school so as to promote order. Dress and never joke.

Education at the Centennial Exhibition.—The Centennial Commission, in preparation for the great Exposition at Philadelphia next year, has adopted the following classification of educational matter to be exhibited there. We trust it may early become the inquiry of every teacher and school board that may read it. What can we do to aid in the adequate representation

of the resources and results of the public instruction of the country? The Exposition will be a gigantic object lesson for and to all nations; and the best elements of our civilisation should have an embodiment at least equal, in variety and interest, to that which represents our material affairs.

DEPARTMENT III.—EDUCATION AND SCIENCE.

Educational Systems, Methods and Libraries.

Class 300.—Elementary instruction: Infant school and kindergarten arrangements, furniture, appliances, and modes of training.

Public Schools: Graded schools, buildings, and grounds, equipments, courses of study, methods of instruction, text-books, apparatus including maps, charts, globes, etc.: pupils' work, including drawing and penmanship; provision for physical training.

Class 301.—Higher education: Academies and high schools, colleges and universities—buildings and grounds; libraries, museums of zoology, botany, mineralogy, art, and archaeology; apparatus for illustration and research; mathematical, physical, chemical, and astronomical courses of study; text books, catalogues, libraries, and gymnasiums.

Class 302.—Professional schools: Theology, law medicine, and surgery, dentistry, pharmacy, mining, engineering, agriculture, and mechanical arts, art and design, military schools, naval schools, normal schools, commercial schools, music—buildings, text books, libraries, apparatus, methods, and other accessories for professional schools.

Class 303.—Institutions for instruction of the blind, the deaf and dumb, and the feeble minded.

Class 3 4.—Education reports and statistics; National Bureau of Education; state, city, and town systems; college, university, and professional systems.

Class 305.—Libraries: History, reports, statistics, and catalogues.

Class 306.—School and text-books, dictionaries, encyclopedias, gazetteers, directories, index volumes, bibliographies, catalogues, almanacs, special treatises, general and miscellaneous literature, newspapers, technical and special newspapers and journals, illustrated papers, periodical literature.

A Word for our Spoken English English Grammar is taught in our schools, and, ostensibly, that the pupils may learn to use good English, or, as the old grammars have it, "to speak and write the English language correctly."

Whether the means thus used will, or can compass the end proposed, we do not intend to consider here, although the question is one of no slight importance. We do propose, however, to put in a plea in behalf of the first, and, in some respects, major object set forth in the old formula,—learning to *speak* the English language correctly.

Good English is, of course, good English, whether spoken or written. But, certainly, spoken English comes naturally first in the order of art, and, and some accounts, is no less first in the order of importance. However this may be taken by our readers, we shall venture to affirm that a fine-speaking English scholar is a rarer and more perfect specimen of culture than a fine writer. To all the other excellences,—excellences which are common to both,—he must add one that belongs to the spoken tongue alone, one that depends on a finished culture of both the ear and voice,—a pure and perfect *pronunciation*.

Now there are special difficulties hedging about the work of acquiring a pure pronunciation. The finest sounds can rarely be set forth by phonetic signs or typical words, for the signs must be interpreted by words, and the words are sure to be interpreted by the local use. The living teacher is, besides, often both unconscious of his own errors in pronunciation, and, from the want of a fine ear, incapable of detecting the true sound when it is represented to him. Hence, numerous and gross errors not only pervade the popular speech, but are present in the daily utterances of the school room, ever corrupting the vocal body of our spoken English.

Now, we are moved to ask, whether this matter of pronunciation should not received a more complete and positive attention in the school-room? It is enough to give heed to it only as it happens to be associated with oral spelling and reading? Ought it not to take its place in a *specific daily exercise*? Ought not that large body of words, currently mispronounced, amounting to some three thousand or more, to be taken up *seriatim*, and be made a careful study by both teachers and pupils? The substitution of written for oral spelling tends to prevent practiced pronunciation on the part of the pupil; and

reading can only bring the pronunciation of these word into the field of practice, and then only to their partial obscuration by other maters. Besides, the mis-pronunciation of word becomes an unconscious habit, and his hence a more inveterate evil than even false spelling. It can only be rooted out be a most definite and decisive practice. Why not have pronouncia-tion distinctly and regularly taught?

Teachers and their responsibilities.—Teachers are persons on whom rests the blame or praise of the schools and to them all power should belong. If a teacher is not capable of managing her class, the remedy is not to set a superior officer to manage her, but to dismiss her and put a competent teacher in her place. The relation of teachers to superintendent or committee or principal is not the relation of rank and file to a colonel or general, or of railroad employes to president and directors. It is rather that of clergyman to the parish officers, or of a representatives to his contituents, or of an editor to his subscribers. The teacher is a servant hired by the community through the committee; but a servant serving through his intellect, a servant to whose judgment much must be left, who is responsible for results, but who is not to be dictated to as to methods, who is to be consulted, who may be advise who can be dismissed, but who is never to be ordered. No amount of machinery no interference of outside authority can help a poor teacher or do anything but hinder a good one. Of one of the best public schools that ever came into the range of my vision, the committee is like clay in the hands of the potter. They do everything that the teachers tell them to do and nothing that the teacher them to do, and there is no unsoundness in them.—*Gail Hamilton.*

Clever People.—Is it a good thing to be clever? One would think not, judging by the manner in which many talented people are treated. In point of fact, the usage to which these are sometimes subjected is of such a character that they may readily be excused if they occasionally devoutly wish that they were stupid. Their less brilliant neighbours are continually trying to pick holes in their coats, with the view of showing the world that they are not deserving of such high praise as the world seems disposed to award them. Critics who will graciously permit persons of a common-place character to escape the lash of censure, pounce upon a man who is popularly supposed to be above the average in point of intellectual attainments and savagely flagellate him to the extent of their power. At one time they endeavour to prove that he is a rank impostor; at another time they hint that he is a dangerous character, who is doing more harm than good in the world; and, in exceptional cases, when he outrages their selfish prejudices, they go so far as to cast a doubt upon his sanity. The individual who has made a fortune by grinding the life out of his employes and constantly getting the better of those who have had business transactions with him, will inform you, with unctuous self-satisfaction, that certain clever people are lacking in the most important of all things, viz., common sense. The person who never reads anything but the most unwholesome columns of a daily newspaper, will sneer at the productions of master minds and declare that the same are mischievous rubbish. And so it is with a large portion of mankind. Unless a man has the talent of amassing money—even though he possesses ten others which are of a higher and purer character—even though he has painted pictures, written books, made scientific investigations, and formulated systems of philosophy which represent more actual brain-work and integrity of purpose than a hundred fortunes—society deems itself at liberty to make light of him and to sneer at him if it feels disposed to do so. When it does condescend to recognize his claims, it often does so in a manner which may well inspire him with the most profound disgust. In nine cases out of ten, people exalt him—when they do so—because they wish to be exalted themselves. They would like it to be understood that they are on terms of intimacy with this man of genius, that they have been graciously pleased to patronize that other person of talent. No doubt, indeed, there are enterprising beings who would keep a recognized man of talent about their premises, just as they keep prize cattle, if the expenditure of money would enable them to do so. At the same time nine-tenths of those who sound the praises of their clever friends—or, rather, those whom they are pleased to say are their friends—are very careful to point out that the said friends are peculiar, and eccentric, and so on, as if the "strange" creatures" could do the work which they are doing, if they were continually pausing in their labours to see that they were not outraging any of the laws to which the plutocracy pay a slavish deference. Then when a man of hability comes to grief, there is a wagging of heads and a time of rejoicing. Stupid people gloat over the fact that he has not been able to look after himself; and the chances are that they begin to think themselves quite clever upon the score of his solitary failure in a matter which is, in their eyes, of

paramount importance, but to which he has devoted little attention.—*Liberal Review.*

Ventilation and Warming.—The two methods of artificial ventilation, are commonly known as that of *propulsion* and *extraction*. In this country, where both warmth and ventilation are to be combined, it is a most considerable difficulty, although the simple ventilation of a room where warmth is not required is comparatively easy, although this is no easy matter from the peculiar architectural character of some buildings.

Where an open fire-place is used constantly it is found to be the most easy and desirable means of ventilation, especially if you have other modes of heating as well. The heat being too small for this latitude, we must have the addition of a stove, hot water, steam, or hot air; but supposing the season of the year being such that a fire-place is sufficient, it acts in this wise. The heat is obtained by radiation from the incandescent fire also by reflection from the different parts of the grate, while ventilation is carried on by the constant current of heated air rushing up the chimney. Even when no fire is made the chimney acts as a very efficient ventilating shaft. When the doors and windows are closed, the air finds its way through every chink and opening, if no special inlet is provided. So that the very plan of stuffing double windows is defeating the very object we wish to obtain. But where this is the case, the opened fire-place is found to establish fair ventilation, by a double current in the chimney, one up or out, and one in or downward. But unless the fire-place is made in the most approved style, the amount of fuel that may be consumed unnecessarily is wilful waste, and the temperature not equable. It is established that the per centage of heat that passes up the chimney is about the seven-eighths of the whole amount generated, along with from 6 to 20 thousand cubic feet of air per hour. Thus it is evident that a single chimney will give an efficient ventilating shaft for a room containing from 3 to 6 or more persons. But unfortunately by far the greatest portion of the fuel is wasted. So, as 5 heating medium for Canada's winter, it would be useless.

You may very easily heat and ventilate at the same time by hot air, water, or steam; but by all these modes you must have inlets for fresh air and outlets for the foul, vitiated atmosphere. All the air passes through or round the heating apparatus, and from thence it is distributed to the rooms in the building, the foul air being carried out by flues, as fast as it can reach the top of the house or ceiling. If you do not have fresh air constantly supplied from without, you are sure to cause the air of the house to become so dry and vitiated that injury is certain to follow. The natural moisture must also be kept up causing the air to pass over water basins. This remedies the evil partially.

Large buildings, such as hospitals, asylums and prisons, can be efficiently warm by hot water pipes; air passing through the coils of pipe before entering the rooms and wards. The vitiated air is extracted by means of pipe in the extraction line or shaft. This shaft may also be heated by the furnace in the ground flat and branch flues leading into the main. This is admirable adapted for prisons.

All large mines nearly are ventilated in this way by extraction. A furnace is placed at the bottom of the up shaft, the air is drawn down another shaft, and made to traverse the various galleries. In this way as many as 2,000 cubic feet of air per head per hour can be supplied.—*Public Health Magazine.*

THE JOURNAL OF EDUCATION.

(FOR THE PROVINCE OF QUEBEC.)

The Journal of Education,—published under the direction of the Hon. the Minister of Public Instruction, and Edited by H. H. MILES, Esq., LL. D., D. C. L., and G. W. COLFER, Esq.,—offers an advantageous medium for advertising on matters appertaining exclusively to Education or the Arts and Sciences.

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All communications relating to the *Journal* to be addressed to the editors.

ABSTRACT FOR THE MONTH OF OCTOBER, 1875.

OF TRI-HOURLY METEOROLOGICAL OBSERVATIONS TAKEN AT MCGILL COLLEGE OBSERVATORY. HEIGHT ABOVE SEA LEVEL, 187 FEET.

Day.	THERMOMETER.				BAROMETER.				† Mean Pressure of Vapour.	‡ Mean Relative Humidity.	WIND.		SKY CLOUDED IN TENTHS			• Rain and Snow Melted.	Day.	
	Mean.	Max.	Min.	Range.	Mean.	‡ Max.	‡ Min.	Range.			General direction	Mean Velocity in m. p. hour.	Mean.	Max.	Min.			
Sunday	1	40.51	48.9	36.7	12.2	29.6905	29.798	29.611	.187	.2037	81.0	W.	10.2	7.5	10	0	Inapp.	1
	2	40.82	49.2	34.8	14.4	30.0580	30.285	29.844	.441	.1906	75.1	W.	11.4	2.7	10	0	Inapp.	2
	3			56.0	36.8	19.2						S. W.	9.9				0.02	3 Sunday
Sunday	4	49.90	55.5	42.9	12.6	29.9884	30.061	29.934	.127	.3203	89.0	W.	11.2	10.0	10	10	0.18	4
	5	37.35	44.2	33.7	10.5	30.1747	30.341	30.075	.260	.1929	86.2	N. E.	12.2	9.0	10	2	0.13	5
	6	38.20	46.6	31.2	15.4	30.2204	30.355	29.984	.371	.2019	86.2	N. E.	12.7	8.7	10	0	Inapp.	6
	7	47.41	50.2	41.2	9.0	29.9357	29.992	29.847	.145	.2602	79.1	W.	14.9	7.2	10	0	0.38	7
	8	41.89	47.2	35.1	12.1	29.9434	30.048	29.882	.166	.2380	89.1	W.	5.8	8.3	10	0	Inapp.	8
	9	42.09	45.8	37.8	8.0	30.1682	30.243	30.072	.171	.2169	81.2	N. E.	4.7	7.9	10	?		9
	10		50.6	39.2	11.5								12.8				0.11	10 Sunday
	11	41.36	46.9	36.2	10.7	29.8867	30.122	29.684	.438	.2100	79.4	W.	15.7	7.9	10	1	0.07	11
	12	35.72	40.0	31.8	8.2	30.2349	30.332	30.147	.185	.1420	67.9	W.	7.0	6.9	10	0	0	12
	13	34.45	42.9	26.9	16.0	30.3652	30.408	30.328	.080	.1446	73.1	S. W.	8.0	4.5	10	0	0	13
Sunday	14	42.44	52.8	30.7	22.1	30.1653	30.326	29.965	.361	.1932	71.4	S.	12.6	8.4	1	0	0	14
	15	49.30	57.5	39.7	17.8	29.7495	29.944	29.568	.376	.2729	77.5	S. E.	14.1	4.7	10	0	0	15
	16	48.87	51.8	42.7	9.1	29.5444	29.596	29.404	.192	.3222	93.0	N. E.	8.7	10.0	10	10	0.28	16
	17		40.0	33.9	6.1							W.	19.2				1.17	17 Sunday
	18	35.52	37.5	33.8	3.7	30.0044	30.144	29.917	.227	.1814	87.2	S. E.	8.6	10.0	10	10	6.06	18
	19	38.19	45.5	34.7	10.8	30.2172	30.273	30.175	.098	.1885	82.0	S. W.	7.5	8.6	10	3	0	19
	20	45.26	51.8	36.8	15.0	29.9364	30.132	29.751	.381	.2364	78.0	S. W.	18.2	8.0	10	2	0.07	20
	21	48.30	58.0	39.3	18.7	29.7984	29.873	29.714	.259	.2604	76.6	N. W.	13.9	7.1	10	1	Inapp.	21
Sunday	22	40.64	46.5	33.9	12.6	30.0091	30.063	29.929	.134	.1835	72.2	E.	6.4	2.1	9	0	0	22
	23	42.11	52.5	34.8	17.7	29.8118	29.903	29.759	.144	.2172	80.0	N. E.	7.4	1.1	5	0	0	23
	24		50.4	32.9	17.5							N. E.	4.9				0	24 Sunday
	25	39.37	42.5	33.4	9.1	29.9195	30.095	29.766	.329	.2003	82.0	N.	8.3	5.2	10	0	0	25
	26	35.06	45.0	30.0	15.0	29.9156	30.146	29.600	.546	.1780	84.7	E.	12.2	7.5	10	0	0.51	26
Sunday	27	42.22	45.5	37.8	7.7	29.5640	29.744	29.486	.258	.2217	81.8	S. W.	15.5	7.7	10	3	0.20	27
	28	34.47	39.3	32.0	7.3	30.0442	30.120	29.851	.269	.1487	74.5	N. W.	11.3	8.0	10	3	0	28
	29	31.14	34.5	27.2	7.3	30.0947	30.136	30.044	.092	.1372	78.2	N. E.	13.5	8.4	10	2	Inapp.	29
	30	40.22	48.7	30.5	18.2	29.7075	29.973	29.541	.432	.2175	86.0	E.	16.5	10.0	10	10	0.91	30
	31		42.8	28.6	14.5							W.	15.2				0.65	31 Sunday
Means	40.877	47.31	34.73	12.54	29.9671				.2108	80.5		11.31	6.90					

* Barometer readings reduced to sea-level and temperature of 32° Fahr. † Pressure of vapor in inches of mercury. ‡ Humidity, relative saturation, 100.

Mean temperature of month, 40.88. Mean of maxima and minima temperature, 41.0. Greatest heat was on the 21st, 58.0; greatest cold was on the 13th, 26.9,—giving a range of temperature for the month of 31.1 degrees. Greatest range of the thermometer in one day was 22.1, on the 14th; least range was 3.7 on the 18th. Mean range for the month was 12.54 degrees. Mean height of the barometer for the month was 29.9671. Highest reading was 30.408, on the 13th; lowest was 29.404, on the 16th, giving a range of 1.004 inches. Mean elastic force of vapor in the atmosphere was equal to .2108 inches of mercury. Mean relative humidity, 80.5. Maximum relative humidity was 99 on the 30th, during rain and cloudy weather after rain. Minimum relative humidity was 52 on the 12th, during cloudy weather. Mean velocity of the wind was 11.31 miles per hour. Maximum velocity was 28 miles per hour on the 30th. Mean of sky clouded, in tenths, 6.9. Rain fell on 20 days. Total rainfall, 4.74. Slight shower of snow on the 5th; and of hail on the 6th and 26th.