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SCHOOL ORGANIZATION, HYGIENE, DISCIPLINE AND ETHICS.

DESIGNED ESPECIALLY FOR THE GUIDANCE OF TEACHERS IN THEIR PROFESSIONAL TRAINING, AND FOR USE BY EDUCATIONISTS GENERALLY.

BY

JOSEPH H. COWHAM,

LECTURER ON SCHOOL MANAGEMENT, WESTMINSTER TRAINING COLLEGE, S.W.

Author of 'The Principles of Oral Teaching and Mental Training,' 'Graphic Lessons in Physical and Astronomical Geography,' 'Mulhauser's Manual of Writing,' 'A New School Method,' &c.

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PREFACE.

THIS book contains the Author's lectures on the subjects of School Organization, Hygiene, Discipline, and Ethics given to the students of the Westminster Training College.

The matter is illustrated by a number of simple outline sketches, designed to assist in making the matter clear, and, at the same time, to help in its effective reproduction.

The newer aspects of school-work call for changes in School Organization, and it is hoped that the suggestions contained in the text will prove of real assistance to all who are interested in the progressive character of English Education.

Throughout the book it has been the aim of the Author to suggest methods of School Organization and Control in harmony with the 'Principles of Oral Teaching and Mental Training' established in a previous work.

Whilst the matter contained in the following pages is of peculiar interest to Students in Training, it is hoped that the work may prove of service to all engaged in tuition and in School Management.

JOS. H. COWHAM.

WESTMINSTER TRAINING COLLEGE.

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SCHOOL DISCIPLINE:

SCHOOL HYGIENE:

SCHOOL ORGANIZATION:

SCHOOL DISCIPLINE AND ETHICS.

Introductory.

THE effective control of the children constituting a school is an essential and paramount condition of all school work. Good discipline makes school life happy and school work successful; it not only secures the best conditions for intellectual progress in a school, but by reason of the habits of obedience and steady application which good discipline fosters, it does much to prepare its subjects for an honourable and useful career in after life. The assembling of large groups of children for class instruction in elementary day schools has created the necessity for the development of this power of complete control on the part of their teachers. School discipline appears in some cases to be a natural endowment; youthful teachers may be found who with but little effort wield successfully a good power of command over their classes; in most cases, however, the discipline which a teacher manifests is a growth, first exercised in imitation of a good model, and afterwards developed by wide experience. Next to the possession of knowledge, this skill in control is an essential condition of all successful teaching. To be a skilful disciplinarian is a necessary qualification for responsible employment on any school staff.

> 'Perfect discipline,' says Dr. Fitch, 'in a class or a school is an indispensable condition of successful teaching. It is necessary for the pupils, not only because by it they will learn in a given time twice as much and twice as easily; but because one of the things they come to school to acquire, over and above certain arts and accomplishments which are generally termed education, is the practice of obedience. The habit of subjugating one's own impulses, of constantly recognising the supremacy of law, and bringing our actions into harmony with it, is one of the first conditions of an orderly and well-disciplined life. He who does not at least acquire that at school has been under

instruction to little purpose, whatever progress he may have made in technical learning; and it is of no less consequence to the teacher. His own health, his temper, and his happiness suffer grievously if he cannot command perfect obedience. One may secure it by personal influence, and another by force, and it will be easy for us to see which is the better method of the two. But by some means or other it must be had; it is better to gain it by force than not at all. For without it the school is a place of torment to all concerned, and must always remain inefficient for every purpose which it professes to serve.'

General Conditions of Successful Discipline.

If we observe the working of a large school, distinguished for the excellence of its discipline, and try to set out the forces by which this discipline is secured and maintained, we shall find the effort is by no means a simple one; and further, if we visit a number of such schools, the effort becomes still more complicated, for the conditions of work will be found to change with every school, and the methods of control will be found to vary considerably with every teacher. There are, however, common conditions of successful discipline, which will be found to enter into the management of every school, and these are the conditions which it is our duty now to consider.

THE TEACHER.

1. The Good Disciplinarian.

There are teachers who, as soon as they appear before a class of children, are immediately and always recognised by their pupils as fitted for command:—a good presence, a bright and cheerful manner, an apt and ready power of presenting knowledge, an ability to maintain intellectual effort, a willingness to assist in weakness, a power to detect indifference, and an earnestness of purpose to do and to have done the work of the moment, together with a patience and perseverance which do not rest content until the work is satisfactorily accomplished—these are amongst the gifts with which the successful disciplinarian is endowed.

With these endowments manifestly in possession, the teacher will be careful not to obtrude unnecessarily the forces of discipline. Whilst he is acknowledged by his scholars to be their superior, he will show himself their fellow-worker and friend; he is their director, it is true—at the same time he will more frequently be their helper; he must always be their leader, and but rarely their commander.

2. The Weak Disciplinarian.

In strong contrast with the qualities just enumerated are those manifested by one who is unskilful in command. At the outset of a lesson he fails to gauge the inteliectual condition of his class, and in consequence weakens the attention of some of its members; he becomes irritated at their apparent indifference, and this feeling tends still further to alienate from himself the sympathy and help of his pupils; he tries to make up for want of skill by 'noisy demonstrations of authority'; the class follows the teacher's example, and in turn becomes noisy and disorderly; the thought and energy which should be expended in teaching is squandered in neglected entreaties or in unheeded commands; a few children are then withdrawn from the class for special correction, whilst the remainder either sink into sullen indifference or rise in open rebellion; and worst of all, the teacher loses confidence in his own power to teach and the scholars lose all regard for what they ought to learn.

3. The Teacher's Discipline pervades the entire school.

'What is the most important factor in a good school?' is the favourite question of one of our most experienced inspectors, and, without waiting for answer, he replies, '*the teacher.*' The head-teacher of a well-disciplined school exhibits a model of management, both in the control of his own classes, and in the teaching, in turn, of the classes of his subordinates. Example in this case is much better than precept, for in matters of school discipline, whilst the successful chief does not seek to destroy the individuality of his assistants and pupil teachers in the management of their classes, he takes care to add that of his own. Recognising the value of example, the head-master of a school, no matter how large, never entirely ceases to teach. He may have much of his time necessarily engaged in the superintend-

ence and direction of the whole establishment, but none of these engagements is so vital to the highest interests of the school as is the practice of actual teaching by the recognised chief of the school, whether the effects of his teaching be considered in relation to the progress of the pupils generally, or in relation to the teacher's power and influence over his subordinates.

4. The effects of skilful direction and oversight by the head-teacher upon the Discipline of his school.

No teacher who has a school sufficiently large for the employment of assistants and pupil teachers ought to have his entire time taken up in actual teaching. The planning-out of the school work, its periodical examination, the adjustment of staff and syllabus necessary to the harmonious and effective working of the school—all these are matters which demand the quiet thought and the mature judgment, which times of complete withdrawal from class responsibility alone can afford. The effect of such skilful oversight and direction should be manifest in every teacher being placed in the best conditions for quiet and successful work, and in every scholar receiving the instruction and stimulus necessary to progressive effort. Whilst the discipline of a scholar depends very much upon the general arrangements of the classes and their work, as set out by the principal teacher, the orderly working of the school will be influenced largely by the manner in which the subordinates carry the same spirit of order and precision into the minute details of class-teaching. The movements of the class, the tone of each teacher's voice, the disposal of materials, such as slates, books, &c.—these may all be so regulated as to conduce very largely to the quiet and orderly working of the school.

> The following mode of testing the discipline of a school, by one of Her Majesty's Inspectors, is worthy of note in this connection. Mr. Fearon writes :—'he' (*i.e.*, the inspector) 'will place himself in some place where he can, without unduly attracting the observation of the teachers and their classes, quietly watch what goes on; and thus he will proceed to note the school at work. In less than five minutes, if the teachers are prepared for his mode of procedure, the scholars will have forgotten his presence, and will be at work as cheerily and naturally as possible under their teacher. If the time-table shows that a change is at hand within a reasonable period, it is well that he

should continue so to watch, until the change is completed. There is no such tell-tale of the discipline, order, tone, and common sense of a school, as the change. Is it made quietly and quickly? Does every one seem to know his (or her) business, and do it in a simple but self-reliant manner? Are books and slates distributed or collected and put away without noise and confusion? Do the scholars leave the desks for the floor, or the floor for the desks, and are they grouped on the gallery for collective lessons, or broken up into classes for reading or arithmetic without any misunderstanding? And through it all, does the principal teacher keep his or her place, and control the school by a look, a gesture, or a quiet word? If so, there cannot be much amiss with the order of that school.'

5. The principal teacher must maintain and strengthen the authority of his subordinates.

In no part of his duty are there greater demands upon the principal teacher's discretion than in the way in which he uses his superior position to strengthen that of his assistants and pupil teachers. Public opinion requires that the supreme authority of the school, especially in the administration of corporal punishment, shall rest with the principal teacher. This is sound, no doubt, so long as much of the management and tuition of classes is in the hands of youthful teachers. When, however, assistants have reached the mature stage of certificated teachers, and many of them of considerable experience and standing, the requirement does not, with equal reason, hold. Every punishment should bear a just relation to the nature of the offence, and no one is so well able to judge of this as the class teacher; moreover, the association of any form of punishment with the administrator does not remain in the mind of the culprit as a pleasant memory, and the class teacher should bear some of this unpleasant association as a corrective to any tendency to undue severity. With a staff of adult teachers, the necessity for severe punishment should largely disappear. With younger and inexperienced teachers, the necessity for appeal to the authority of the principal teacher will continue. Young teachers cannot be too strongly impressed, however, with the notion that the fewer these appeals are, the better is their discipline, if successful. A word of commendation may well be given to any teacher in the presence of his fellows, who, whilst maintaining good discipline in his class, is able at the end of a given term to display a clean sheet so far as appeals to other

authority than his own are concerned. The authority of subordinates must be maintained in the presence of their pupils, and any evidences of weakness in control must be carefully indicated by the head teacher in private, as no amount of effort on the part of a young teacher to control his pupils will overcome the evil effects of an exposure of his faults before the class.

6. Qualities in the teacher which make for the good government of his school.

(*a*) *Justice.*

A school is a community which must be under the dominion of certain well-established and clearly understood rules or laws. Some of these may be drawn up and publicly exhibited in the school-room. In applying them, there must be unwavering uniformity. There must be no apparent favouritism; when rules are violated the consequences must inevitably follow, for children are very ready to discount their chances of detection.

The explanation of a rule is not at all times necessary. Sometimes, however, the effects of non-compliance may with advantage be pointed out. For example, a boy comes late, and thus fails to receive instruction in certain subjects, and as a consequence he falls behind in that subject when compared with the progress made by his school-fellows. The advantages of punctual and regular attendance may thus be enforced, and an effort to be punctual induced.

(*b*) *Firmness and precision in command.*

Orders must be obeyed implicitly and immediately. Any laxity tending to uncertainty in the application of the school rules must be a weakening of all control. In order to secure that commands are heard and understood, there should first be silence throughout the class, then the order given in a quiet but firm tone. A command bawled over the noise of an inattentive class is sure to be unheard by a few, and failure to obey on the part of some may be imputed by others to a disregard of the teacher's command. These may be entirely in error, but the effect is the same, so far as their respect for the teacher's firmness is concerned.

One of the great advantages of signals over verbal commands is in the fact that they are, to a certain extent, separated from the teacher's personality. They always appeal to the pupil's attention and obedience

in exactly the same form; they are less likely, therefore, to be misunderstood, and obedience to them tends to become habitual. They secure prompt obedience, with less strain upon the personal relationship existing between the teacher and his pupils.

(*c*) *Sympathy with children.*

Whilst the teacher must be just in applying impartially the school rules to those under his control, and firm in demanding instant obedience to the orders he gives, he must, at the same time, recognise the fact that he is dealing with child nature with all its weakness and inexperience. He must be mindful not to place his charge under conditions which would inevitably lead to failure. He must not expect a class of little ones, for example, to apply themselves to continuous work without the immediate direction of a teacher. He must be *patient* with the dull, and not *impatient* with the ignorant. There will always be some members of his class who need special treatment, either through mental weakness or bodily infirmity. 'He is a new scholar,' or 'he is short-sighted,' are explanations which children often give unsolicited when a new teacher takes charge of the class. These suggestions, coming from the children themselves, exhibit the kindliness of their feeling towards their fellows, and the teacher cannot, in these respects, afford to be less generous to his pupils than they are to one another.

(*d*) *Cheerfulness and activity.*

What teacher of any experience has not often found that when, either through bodily weakness or mental depression, he has lost his usual elasticity of spirit, the school becomes unusually difficult to manage? Enthusiasm, and a habit of looking at the best side of his work, together with an activity of mind and manner which anticipates difficulties, and which enables him cheerfully to meet them—these are qualities which are readily reflected by all with whom he comes in contact, and when these diffuse themselves throughout the whole school they render school work both easy and successful.

(*e*) *Tact in Management.*

Tact is a term of wide meaning. In school discipline, it is specially applied to the ability a teacher manifests in readily and successfully dealing with unforeseen difficulties. A thoughtless answer, for example, has disturbed the gravity of the class.

Shall the teacher join in the evident feeling of the class or administer a stern rebuke? He must immediately determine what character it is best for him to assume. Much will depend upon the nature of the thoughtless boy, and more upon the teacher's relations to the class. Should the boy be one whose credit usually stands well with his fellows, and who evidently did not answer foolishly by design, and one, further, who will not resent seriously a pleasant piece of raillery; and should the teacher be able quickly to bring back his class to the work of the lesson, then in such a case the teacher may safely become, for once, a sharer in the innocent fun. With a boy, however, who is generally stupid in reply, or one who is capable of indulging in a foolish answer by design, or with a teacher who is somewhat uncertain of the use his pupils may make of any liberty he may give, such a course would be most unwise. A stern reproof is, in this case, the only course which the teacher can with dignity adopt. Two opposite courses, therefore, lie before the teacher, and he who can take in the whole of the conditions at a glance, and at once act the wise part, manifests what we understand by tact in management.

Similar tests of tact occur during every lesson, and constantly throughout the day. Skill in dealing with such cases immediately they arise mainly depends upon a wide experience, a keen insight into child nature, a mind fertile in resource, a will sufficiently firm to enforce what the judgment suggests, and above all, a confidence on the part of the child in the teacher's wisdom—the outcome of past and oft-repeated trial.

(*f*) *To have good order the teacher must be orderly himself.*

'Everything in its place, and a place for everything' must be the orderly teacher's constant motto. It will enter into and regulate the entire surroundings of the teacher, the class, and the school.

Neatness of person, in teachers and children; orderly arrangement of papers, personal and official; the arrangement of children in symmetrical array in the desks, on the floor, or on the gallery; the storing of books, pens, and slates, and their orderly distribution; the disposal of apparatus—blackboards on the floor, the hanging of maps and pictures on the walls; the cloak room; the offices, and the general appearance of the school-room—these all combine to produce an accumulated effect which influences very powerfully the discipline of the school.

(*g*) *The teacher must be both a careful student, and a well-informed master of child nature.*

In the following chapter, dealing with the child in relation to school control, it will be shown that the pupil manifests activities which respond to a variety of natural stimuli; and further, that the stimulus to action varies with the age and development of the pupil. The feelings, or motives, which direct and regulate the action of children are subjects which no one who undertakes their control, either individually or in the mass, can afford to ignore. The gradual development of the nobler and higher motives to effort, and the weakening of the ignoble and lower ones, are amongst the most difficult and, at the same time, the most profitable aims of the teacher. It is true that in some rare cases a teacher may, by his overpowering personal influence, so stimulate effort that intellectual effects may be obtained, and a superficial display of control manifested, sufficient to satisfy a cursory test; but such control can never result in the development of a self-regulative character on the part of his pupils. The higher motives to action—sense of duty, sympathy with others, a love for knowledge, self-control—these higher motives to effort (which when exercised and rendered habitual form the combination of elements entering largely into what we term 'character'); these require for their development a thorough knowledge of child nature, a recognition of the laws to which that nature conforms at different stages of school life, and a variation in the methods of discipline in harmony with these recognised laws.

The changes which of late years have been introduced into the curriculum of professional study for certificate candidates are intended to place the knowledge of these laws at the disposal of teachers; and the changes which have been, still more recently, introduced into the elementary school course of instruction and examination, will, it is hoped, tend to the display of the higher forms of school discipline which this knowledge, on the part of the teacher, is capable of producing.

THE CHILD IN RELATION TO SCHOOL DISCIPLINE.

Introductory.

No one who recalls his own experiences, or who observes the life of a child at different stages of its career, can be ignorant of the great change which takes place in the nature of the stimulus to activity to which the child responds in infant and more advanced life respectively. In early infant life, the activity of the child is awakened and stimulated largely by an abundant flow of feeling. The child at this period of life is almost entirely under the external control of its parent or teacher; towards the end of school life, however, feelings become more and more repressed, and made subject to the child's intelligence and its moral sense; school activity is now largely directed by a knowledge of what the scholar's interests demand, the future requires, habit inclines to, and duty enjoins. This progress from external direction and stimulus to internal impulse has been gradual; the broad features of development can, however, be traced, and when traced they yield a valuable guide to the form of discipline best suited to the age of the child.

THE INFANT STAGE.

Experience in the control of infant schools abundantly testifies to the truth that activity is mainly under the direction of feeling. Activity is a universal trait of infant life. We wish that activity to be directed to intellectual and moral ends. How do we proceed?

(1) *The subjects of instruction are made attractive. Feelings are utilised.*

Watch the various exercises of any good infant school. The teacher does not depend upon the child's will for directing its own effort; the will is a quantity not yet in sufficient force to be made available, and in lieu of it, the teacher secures the particular form of activity she desires by an appeal to the child's feelings. For example, if an object is to be *observed*,

the intellectual process of perception is stimulated by making the object attractive, either by its brilliant colour, its bold shape, some striking contrast, or its novelty; any or all of these are sufficient to arouse the feeling and thus to direct the attention of the child. Again, suppose the lesson to be a language exercise; the topic selected is a childish experience in which the infant mind finds delight, such as, *e.g.*, 'the story of the lost doll.' Speech is thus exercised in connection with a topic which arouses a considerable accompaniment of feeling, and, so long as there is the association of aroused feeling, the control of the child is complete. *Moral control of feeling* in the infant school is aptly described by Currie, in the following words:—

> 'Activity is natural to the child in its moral character, just as we have seen it to be in its physical and mental. A child in the presence of kindness and affection exhibits a sympathy with it, or a return of it by something which he does; in the presence of pain it tries its little to relieve it. We must, therefore, provide it with the means of acting out its right feelings; and we must weaken by non-activity those of an opposite character. If we would, *e.g.*, cultivate kindness, let us show it kindness in our deeds, and it will return kind deeds; if reverence, let us habitually show it the example of reverence, and it will conform; if justice, honesty, truthfulness, we must arrange the little society so that in its daily intercourse it will have opportunities of seeing and of exemplifying them. If kindness, reverence, justice, honesty, truthfulness, never be *acted* before it, then, however much they may be spoken about, the child will have no sense of their obligation. It is only as acts that it can know them; in themselves they are abstract terms of which it can form no conception. So if we wish to root out improper feelings, or to prevent their growth, such as vanity or the love of praise, rivalry or the love of superiority, or the like, we withhold the praise or the ocular proof of superiority which minister to these feelings.' *

(*b*) *For steady control, all infant school exercises and lessons must be short and varied.*

The exercise of a feeling, such as wonder or surprise, cannot be long maintained in full flow; a change of effort is needed in order to keep signs of weariness from manifesting themselves. The signs, which show themselves naturally and without

* Early and Infant School Education.

restraint in an infant, are the vacant gaze, the diverted attention, the restless frame, etc. It is a happy phase of infant school life that so many different forms of school work and activity are being devised and introduced into the routine of our infant schools. A class of infant children may have become almost wearied with the effort of distinct articulation in a language exercise; it will, however, turn almost immediately with fresh and full energy to the exercise of clay modelling with the hands, or to the movements of musical drill with the feet, or to the examination of an object with either the eyes or hands.

(*c*) *For complete control, the teacher must be present, and counter attractions must be removed.*

The power to regulate present activity by the stimulus of some distant or deferred feeling does not belong to the infant period. It is an evidence of considerable growth of will to act, not under the stimulus of what is immediate and present, but so to suppress the present feelings that they lose effect, whilst those which are anticipated become supreme in control. For example, we must not expect a class of infants without a teacher, and with a street organ starting a familiar air, to continue quietly their exercise in drawing or the effort of book-reading without the slightest diversion of energy in harmony with the outside stimulus. Not only must the teacher be always present, but there must be the removal of all conditions which would lead to the distraction of attention during lessons. To this end classes should be separated as much as possible; a noisy lesson should be taken in a room apart from the rest of the school; and the babies should always have a room to themselves.

THE JUNIOR STAGE OF SCHOOL LIFE AND SCHOOL CONTROL.

Introductory.

We must not encourage children to be under the control of their feelings too long. It is wise to avail ourselves of these whilst they are almost the only forces at our disposal, *i.e.*, during the infant stage. Other forces, however, soon begin to manifest

themselves, and become available in school discipline. The second stage of child control, viz., the period, roughly stated, between 5 and 10 years of age, is characterised by a development of the will, so that the child becomes increasingly capable of acting from design, *i.e.*, in order to secure some desired effect—the effect being some hoped-for pleasure, such as the approbation of the parent or teacher, or a position in the class, or a reward. Action on the part of the child may also be designed, in order to avoid certain known penalties or uncomfortable feelings which are expected to follow such faults as inactivity, carelessness or neglect. There is a strong contrast between this second stage of control and that described under the infant stage. Then, the child's activity was seen to depend upon the feelings of the moment; now, it is seen to be stimulated by an anticipated feeling, which may be very different from that of the moment, as when, for instance, a boy at home works over and over again an example in arithmetic, in order that he may be certain of the pleasure of showing a correct answer to his teacher the following morning. The impulse of the moment to join his playmates in their outdoor games is no doubt strong; that immediate impulse, however, is repressed, and with patient effort the pupil works, it may be, until he is quite weary, the deferred pleasure being sufficient to stimulate him in overcoming the present feeling. With this change in the nature of the available stimulus to effort, there is placed at the teacher's disposal a new set of agencies for the control of the activities of the child. This is the period when approbation, rewards, prizes, marks, and emulation, form a natural stimulus to school work.

Forms of stimulus to activity available in the discipline of junior classes.

(a) Approbation is a natural and very legitimate incentive to child activity. It follows successful effort, and is very powerful where a high regard for the teacher exists. It should not be lavishly bestowed, for then it soon either loses its effect, or tends to foster a feeling of vanity.

The following statement upon the value of approbation and censure, as means of discipline during the junior stage of control, is taken from '*Some Thoughts on Education*,' by Locke. He says:—

'Children (earlier perhaps than we think) are very sensible of praise and commendation. They find a pleasure in being esteemed and valued, especially by their parents and those whom they depend on. If therefore the teacher commend them, when they do well; show a cold and neglectful countenance to them upon doing ill; it constantly observed, I doubt not but will of itself work more than threats or blows, which lose their force, when once grown common, and are of no use when shame does not attend them. But, to make the sense of esteem or disgrace sink the deeper, and be of more weight, other agreeable or disagreeable things should constantly accompany these different states: not as particular rewards and punishments of this or that particular action, but as necessarily belonging to, and constantly attending one, who by his carriage has brought himself into a state of disgrace or commendation. In this way the objects of their desires are made assisting to virtue; when a settled experience from the beginning teaches children, that the things they delight in, belong to, and are to be enjoyed by those only, who are in a state of reputation. If by these means you can come once to shame them out of their faults (for besides that, I would willingly have no punishment,) and make them in love with the pleasure of being well thought on, you may turn them as you please, and they will be in love with all the ways of virtue.

'Concerning reputation, I shall only remark this one thing more of it: that, though it be not the true principle and measure of virtue (for that is the knowledge of man's duty, and the satisfaction it is to obey his Maker, in following the dictates of that light God has given him, with the hopes of acceptation and reward), yet it is that which comes nearest to it; and being the testimony and applause that other people's reason, as it were, by a common consent, gives to virtuous and well ordered actions, it is the proper guide and encouragement of children, till they grow able to judge for themselves and to find what is right by their own reason.'

(*b*) *Marks and Prizes.*

These are tangible evidences of our approval of a pupil's work. They come at intervals, and may be graduated in value according to the nature and amount of the effort which they recognise. Their distribution is not without danger, on account of the great difficulty that exists in fairly gauging the effort they are intended to reward. A register of marks regularly and faithfully kept, the records of which are forwarded from time to time to the homes of the scholars, may tend to strengthen the continuous application of the pupil at this stage of school life. Such a record will almost certainly secure the co-operation of home and school in the pupil's work.

A REGISTER OF MARKS.

Name of Pupil.....

Date....wk...mo...yr... DAY OF WEEK	Punctual Attend-ance M.	A.	Home Work	Daily Lessons				Extra Marks	Lost Marks	TOTAL

Whilst marks may well be given for many lessons in which the class is left to independent effort, as, for example, the home lesson, it is not advisable to give marks for every lesson throughout the school day. The association of a mark with every effort of school work will not tend to prepare the pupil for that higher form of control which should be available in the upper classes of the school. Every day some lessons should be done entirely apart from the stimulus of an anticipated mark.

Special distinctions (the exhibition of a specimen of excellent work, such as a map, home lesson, &c.), **unexpected prizes, places of trust**—these are amongst the most effective of the teacher's marks of approval, and, at the same time, there is least in them of the nature of a bribe.

(*c*) *Position in the class—emulation.*

In large schools, where the members of each class are on fair competing terms on account of the sub-division of the school into many groups, competition may be resorted to as a stimulus to effort, with marked effect upon intellectual progress. In smaller schools, where inequalities in each group are more marked, this mode of inspiring effort is not so valuable. In both cases competition may be carried so far as to encourage the undesirable feelings of envy and rivalry. In small schools there is the further danger of causing the weaker children to lose heart, and thus of lessening their effort.

'Superior knowledge is dearly acquired at the price of a malevolent disposition. Rivalry is a feeling to be kept in the background. Children should be encouraged to excel rather for the sake of the attainment itself

than for that of taking down another. In other words, the scholar's prevailing motive should be worthy ambition, or desire to get on, rather than the distinctly anti-social impulse of rivalry. As Rousseau and others have pointed out, the teacher can further this result by his mode of apportioning praise, founding his estimate on a comparison between what the pupil *has been* and *what he is*, and not between what he is and what somebody else is not. In addition to this, the educator should seek to counteract the tendency to the indulgence of hostile sentiment in any form of competition by developing the social feelings, and more particularly sympathy with the sorrows of another. In this way the heat of contest will be tempered, and the delight of triumph dashed by regret at the humiliation of another; the selfish feeling of rivalry will pass into the more generous sentiment of emulation.'*

Whilst we allow full force to the opinion quoted above, and readily accept the suggestion that children should not always nor frequently view each other in the light of rivals, we should not hesitate to acknowledge merit any more than we should fear to censure fault. The following opinion on the subject of emulation will commend itself to practical educationists.

'If experience convinces children,' says Miss Edgeworth, 'that they must lose in proportion as their companions gain, either in fame or favour, they will necessarily dislike them as rivals; their hatred will be as vehement as their love of praise and affection is ardent. Exact justice will best prevent jealousy; each individual submits to justice, because each in turn feels the benefit of its protection. Some preceptors, with benevolent intentions, labour to preserve a perfect equality amongst their pupils, and from fear of exciting envy in those who are inferior, avoid uttering any encomiums upon superior talents and merit. This management seldom succeeds; the truth cannot be concealed; those who feel their own superiority make painful reflections upon the injustice done to them by the policy of their tutors; those who are sensible of their own inferiority are not comforted by the courtesy and humiliating forbearance with which they are treated. It is therefore best to speak the plain truth; to give to all their due share of affection and applause; at the same time, we should avoid blaming one child at the moment when we praise another; we should never put our pupils in contrast with one another, nor yet should we deceive them as to their respective excellences and defects.'

* Sully's 'Teacher's Handbook of Psychology.'

PUNISHMENTS AND SCHOOL CONTROL.

1. Introductory.

These expedients in school control have as their basis the feeling of discomfort, either bodily or mental, which accompanies their infliction. When certain lines of conduct, as, for example, inactivity, carelessness, and neglect, are seen to be followed by reproval, and when these lines of conduct being repeated are seen to bring with them, as a necessary consequence, some form of increased punishment, the child tends to act so as to avoid punishment and the discomfort it brings. Such designed action on the part of the child is an evidence of the growth of its will, as much as when its action is designed to secure approval, marks, prizes, or other forms of distinction. Punishments, therefore, come naturally under the same form of stimulus to activity as do rewards, &c. Whilst, however, both kinds of stimulus supply motive for child activity, they are not of equal value in school control. One is a recognition of merit and success, the other is a penalty for neglect and failure; one associates both teacher and pupil in a bright and hopeful regard, the other tends to weaken that bond of fellow-feeling between the teacher and the taught which is the main support of harmonious, lasting, and progressive control. The tone and the character of the control in any school might fairly be estimated, if only the proportion between these two forms of stimulus could be accurately gauged. In a well-disciplined school, approval, sympathy, regard, and happiness will be at a premium, whilst punishments, regrets, and tears will be at a heavy discount.

> 'It has been a question whether mankind are more governed by hope or by fear, by rewards or by punishments. . . . Hope excites the mind to exertion, fear represses activity. As a preventive from vice you may employ fear; to restrain the excesses of passion it is useful and necessary; but would you rouse the energies of virtue, you must inspire and invigorate the soul with hope. Courage, generosity, industry, perseverance, all the magic of talents, all the powers of genius, spring from hope.'

2. The progressive character of school punishments.

The aims of punishment are two-fold, viz., (1) to prevent the wrong doer from repeating his offence, and (2) to deter others

from similar faults. 'With this double view of restraining individuals by the recollection of past sufferings from future crime, and of teaching others by public examples to expect and to fear certain evils as the necessary consequences of certain actions hurtful to society, all wise laws are framed and all just punishments are inflicted.'

Recognising the two-fold aim of all punishment, as stated above, and remembering the different stages of child life that the school has to deal with, viz., the infant stage, when association of pleasurable or painful feeling must be direct and immediate, and the more advanced stage of school life, when the power of reflection and reason enables the pupil to anticipate the full consequences of his actions, it is evident that the character of our punishments must change with the age of our pupil, just as in a previous chapter the nature of our rewards were seen of necessity to change with the development of the child.

At *first* our punishments may be arbitrary; they must however be immediately connected with the offence, and be chiefly aimed at the reformation of the offender. During *later* school age punishments must bear a clear relation to the nature and extent of the offence; they may be delayed, though their certainty must be none the less on that account, and they may further be directed, not merely at the reformation of the offender, but also as an example for the warning of his fellows.

Unless there be this advance in the form which our punishments take at different periods of school life, *i.e.*, unless children, when they come to an age when they are capable of reflection and reason, are able to recognise the justice of the punishment we inflict, they will be likely to associate the pain they feel with the expenditure of our anger and not with their own wrongdoing, and thus we are in danger of becoming objects of their dislike. 'It is most important that the pain of punishment be not associated with the teacher, but with the fault which is the real cause of it.'

The progressive nature of our modes of control in the infant and advanced stages respectively is further indicated in the following paragraph taken from Locke's *Thoughts concerning Education.*

'Those therefore that intend ever to govern children, should begin it whilst they are very little; and look that they perfectly comply with

the will of their parents. Would you have your son obedient to you when past a child? Be sure then to establish the authority to the father as soon as he is capable of submission, and can understand in whose power he is. If you would have him stand in awe of you, imprint it in his infancy; and, as he approaches more to a man, admit him nearer to your familiarity; so shall you have him your obedient subject (as is fit) whilst he is a child, and your affectionate friend when he is a man. For methinks they mightily misplace the treatment due to their children, who are indulgent and familiar when they are little, but severe to them and keep them at a distance when they are grown up. For liberty and indulgence can do no good to children; their want of judgment makes them stand in need of restraint and discipline. And, on the contrary, imperiousness and severity is but an ill way of treating men, who have reason of their own to guide them.'

3. Kinds of Punishments.

(a) Punishment of consequences.

For many school offences there are punishments which are their natural consequences—for example, lateness is followed by detention; lessons carelessly done are done over again; and when a child is quarrelsome with, or talkative to, its neighbours it may be isolated; in a less immediate though not less effective manner, the natural punishment of speaking an untruth is loss of trust and confidence. Some faults, again, are best corrected by exercising their opposite virtues, as, for example, a slovenly boy may for a time be set to take charge of the neat arrangement of school apparatus; the tendency to restlessness and wandering during lessons is often best corrected by the pupil being kept fully occupied.

The 'discipline of consequences,' or of 'natural reaction,' is set forth by means of many illustrative examples in '*Education: Intellectual, Moral, and Physical*,' by Mr. Herbert Spencer.* He says, 'These few familiar instances will make clear to every one the distinction between those natural penalties which we contend are the truly efficient ones, and those artificial penalties commonly substituted for them. Before going on to exhibit the higher and subtler applications of the principle exemplified, let us note its many and great superiorities over the principle, or rather the empirical practice which prevails in most families. It generates *right conceptions of cause and effect*, which, by

* Published by Williams and Norgate, Covent Garden.

frequent and consistent experience, are eventually rendered definite and complete. Proper conduct in life is much better guaranteed when the good and evil consequences of actions are understood, than when they are merely believed on authority. A child who finds that disorderliness entails the trouble of putting things in order, or who misses a gratification from dilatoriness, or whose carelessness is followed by the want of some much-prized possession, not only suffers a keenly-felt consequence, but gains a knowledge of causation; both the one and the other being just like those which adult life will bring. Whereas a child who in such cases receives a reprimand, or some factitious penalty, not only experiences a consequence for which it often cares very little, but misses that instruction respecting *the essential natures of good and evil conduct* which it would else have gathered. It is a vice of the common system of artificial rewards and punishments, long since notified by the clear-sighted, that by substituting for the natural results of misbehaviour certain tasks or castigations, *it produces a radically wrong moral standard.* Having throughout infancy and boyhood always regarded parental or tutorial displeasure as the chief result of a forbidden action, the youth has gained an established association of ideas between such action and such displeasure as cause and effect. Hence, when parents and tutors have abdicated and their displeasure is not to be feared, the restraints on forbidden actions are in great measure removed; the true restraints, the natural reactions, having yet to be learnt by sad experience.' Summing up the advantages of moral training by means of a 'discipline of consequences,' Mr. Spencer further says:—

'(1) That it gives that rational knowledge of right and wrong conduct which results from personal experience of their good and bad consequences.

(2) That the child, suffering nothing more than the painful effects of its own wrong actions, must recognise more or less clearly the justice of penalties.

(3) That recognising the justice of the penalties, and receiving them through the working of things, rather than at the hands of an individual, its temper is less disturbed; while the parent fulfilling the comparatively passive duty of letting the natural penalties be felt, preserves a comparative equanimity.

(4) **That mutual exasperations being thus prevented, a much happier and more influential relation will exist between parent and child.'**

From this summary of the advantages which the philosopher urges in support of this mode of discipline, it will be seen that as a means of control the discipline of consequences finds its most suitable place, not during the infant stage, when the feeling of the moment is all powerful, when deferred or remote feelings cannot be anticipated, and when the power of reasoning has scarcely begun to manifest itself, but when, by a considerable development of both feeling and will and of the power of reasoning, the pupil is prepared to set aside present impulse and to substitute for it the stimulus of an anticipated feeling or effect. Speaking generally, and ignoring for the moment the few individual and special cases in which the discipline of consequences may, at an early age, have proved effective, it appears safest at first to follow Locke's advice, and guide children during their tender years by authority, and with little reference to their powers of reasoning, and gradually, as the years advance, to weaken the force of direct and personal control, by substituting for it the discipline of 'natural reactions.'

> 'It is clear,' says Dr. Crichton Browne, 'that the system of natural consequences cannot be solely trusted to. Misbehaviour is not always followed by disagreeable natural consequences that are capable of interpretation at that early age, and artificial penalties must be employed to establish the all-important association between pain and transgression, and to secure that submission which is of the essence of discipline. To wait for the teachings of natural consequences, would often be to permit the moral nature to run wild, and to entail much suffering which might have been spared by mild but timely punishment of human imposition.'

(b) Censure is intended to bring about an opposite condition of feeling to that following praise. The wish to avoid censure may be made almost, if not entirely, as powerful an incentive to diligence as the desire to gain praise; it should not, however, be frequently used as a motive to action, because, if repeated, (1) it soon becomes weakened in its effect, (2) there is danger of the child losing self-respect in the presence of his schoolfellows, and (3) it cannot be frequently indulged in without destroying the mutual regard which should exist between teacher and pupil.

Many teachers find the most effective form of censure to be a sharp reproving glance of the eye; this is a valuable mode of correction, because it does not interrupt the progress of the work of the class as a whole; it is effective as an individual reproof, and is a sufficient reminder in cases where only momentary inattention or neglect is manifest.

In cases where only some members of the class are deserving of censure, a word of approval to the rest is often effective in obtaining the desired result from all. A class may sometimes be rewarded for faithful work by being liberated for play, or for home, a few moments before the others. This treatment is generally effective in obtaining the diligence and order of the remaining groups; it is, furthermore, easy of application, and terminates the work of the day without those feelings of estrangement which accompany the extensive use of either censure or 'keeping in.'

(c) Loss of position; loss of marks.

This form of punishment depends for its value upon the estimate children put upon the place they occupy in the class. Children near the bottom feel that they have very little to lose, and yet they are the pupils who most need a stimulus to effort; on the other hand, those who are near the top of the class will rarely, or never, require this form of correction. Where a record of marks gained and lost during certain lessons and extending over a fortnight or a month is faithfully kept, and where this is taken into account along with the results of a class examination upon the work of the period, a condition of continuous and healthy stimulus is supplied, which, by taking advantage of the natural desire to excel, may prove in junior classes a sufficient spur to effort. It has been already stated that the best results arising from any record of progress and default follow when the record is submitted at intervals to the inspection of parents. Any delinquency is thus immediately detected; the causes may be readily traced, and by the co-operation of parents may be corrected before habits of carelessness and bad conduct are formed.

When the cause of failure has been clearly determined, no time should be lost in obtaining its removal. The scholar may need removing from some neighbour who is injuriously affecting him; or there may be health considerations for which allowance ought to be made; the work may be above the pupil's capacity; or, he may have

become indifferent. All or any of these circumstances call for enquiry and advice. The regular record of progress and default will form a ground-work for our enquiry and a reliable basis for our advice.

(d) Tasks.

When tasks consist of such exercises in school work as 'writing out lines,' 'learning by heart,' &c., and when these are given for every form of default, such tasks having no necessary connection with the nature of the offence, they may effect a temporary discomfort in the mind of the pupil, but they are liable to engender a dislike for the work thus reduced to the level of a punishment. Association with all forms of school work should be made as agreeable as possible, and it were better to leave the child without employment during the period of disgrace than to make a lesson serve as a task. There may be occasions when it is most fitting that school work should be done when the pupil is under temporary disgrace, as, for example, when lessons have been neglected or carelessly done; the just punishment then is to repeat the effort until a satisfactory result is produced; again, time wasted may be atoned for by an extra lesson; but copying should not be punished with lines to be written out, and a manifestation of sullenness of disposition should not be followed by lines to be learnt.

(e) Corporal Punishment.

Corporal punishment is a means of inflicting immediate discomfort upon an offender with frequently the least expenditure of thought and effort on the part of those who use it. It is the immediate effect which corporal punishment secures with but little effort that constitutes one of the main dangers of its use. There are certain school offences which may possibly be best corrected by the administration of corporal punishment, and with some children the home influence has been such that for a time no other form of punishment appears to be effective; at the same time, the use of the rod should be reserved for very rare occasions and only as a last resort. Locke says, 'There is one, and but one fault for which I think children should be beaten, and that is obstinacy or rebellion, and in this, too, I would have it ordered so if it can be, that the shame of the whipping and not the pain should be the greatest part of it. This, *i.e.*, the shame of it, I confess requires something more

than setting children a task and whipping them without any more ado if it be not done or done to our fancy. This requires care, attention, observation, and a nice study of children's tempers, and weighing their fault well before we come to this sort of punishment. But is not this better than always to have the rod in hand as the only instrument of government, and by frequent use of it on all occasions misapply and render inefficacious this last and woeful remedy where there is need of it? For what else can be expected when it is promiscuously used upon every little slip? When a mistake in concordance, or a wrong position in verse, shall have the severity of the lash in a well-tempered and industrious lad as surely as a wilful crime in an obstinate and perverse offender, how can such a way of correction be expected to do good on the mind, and set that right which is the only thing to be looked after; and, when set right, brings all the rest that you can desire along with it.'

Dr. Fitch makes the following suggestions on the use of corporal punishment in schools:—

'(1) Never inflict corporal chastisement for intellectual faults, for stupidity or ignorance. Reserve it exclusively for vices, for something morally degrading.

(2) Never inflict it whilst under the influence of heat or passion.

(3) Never permit an assistant or an elder scholar to inflict it in any circumstances.

(4) Do not let any instrument of punishment be included as part of the school furniture and as an object of familiar sight, or flourished about as a symbol of authority.

(5) Do not strike with the hand.' *

4. The Law and Corporal Punishment.

Experience generally leans to the position that whilst the power to administer corporal punishment should remain with the teacher, that power should be but rarely exercised.

The following statements by judicial authorities will serve to guide the teacher in cases where he finds the administration of this form of punishment to be absolutely necessary.

* Lectures on Teaching.

Magistrate's Statement.

'The principle of school punishment is this:—It is the duty of the parent to train and instruct his child, and to enforce obedience to his authority. In support of that authority, he has the moral and legal right to apply such discipline as may be necessary to ensure conformity. That discipline includes corporal punishment, and the English law permits the parental authority to be transferred to the master of any school to whom the parent entrusts the duty of training and instructing the child. But whether that power be used by parents or masters, it must be within reasonable and moderate bounds. Now the process of bringing the scholars of any school into prompt conformity with its work and rules may, no doubt, be in general effected by close supervision, praise, rewards, reasoning, persuasion, awakening of conscience, and other influences. But in all schools there are some rebellious, or vicious, or idle, or dogged natures to control. Boy-nature is not uncommonly very provoking. Characters of this kind must in some way or other be rapidly tamed and brought into harmony with the school work, otherwise they will infect and injure the whole school. Undoubtedly the better and higher influences ought to be tried as far as time and the peace and welfare of the school will permit, but schoolmasters cannot persuade, reason, coax, and advise for ever. If boys will not listen to the voice of reason, persuasion or remonstrance, what can be done? Recourse *must* be had to punishment of some kind. Undoubtedly beating is a coarse and rough substitute for those finer influences to which I alluded; yet it must, I fear, be retained as an auxiliary to discipline, and an antidote to habitual idleness. But the law lays down two limitations to this punishment, and common sense prescribes a third. The law says:—

'1. That punishment by beating must be reasonable with reference to the age and offence of the scholar, and the instrument and quantity of the infliction.

'2. That parental power be limited to masters of schools under whom the parent places his boy. I do not think that it can be held to extend to monitors and pupil-teachers.

'3. Common sense and humanity suggest that corporal punishment should never be inflicted immediately after the offence.

'The reason is obvious. If a scholar has violated the school rule by some misconduct, the teacher is very likely to view it more seriously at the moment than he would next morning, and to err in proportioning the immediate punishment to it. In short, I contend that corporal punishment should be rarely used, should be reasonable in quality and quantity, and should be inflicted by a full master, and only after a lapse of some time. I will only add that in my humble opinion blows or boxes on the ear are not proper and lawful punishments. Corporal punishment, I contend, ought to be reduced to a

minimum, used as a last resource, and then away with the instrument of pain. The reign of fear should be as short, and the reign of kindness as long as possible. The relation between teacher and taught can never be what it ought to be while the chief motive power in school work is fear.'

Lord Chief Justice Cockburn's Statement.

'By the law of England a parent or schoolmaster, who for his purpose represents the parent, and has parental authority delegated to him, may, for the purpose of correcting what is evil in the child, inflict moderate and reasonable punishments, always, however, with this condition, that it is moderate and reasonable. If it be administered for the gratification of passion or of rage, or if it be immoderate and excessive in its nature and degree, or if it be protracted beyond the child's power of endurance, or inflicted with an instrument unfitted for the purpose and calculated to produce danger to life and limb, in all such cases the punishment is excessive, the violence is unlawful.' *

5. Medical Testimony.

'Corporal punishment is to be condemned, (1) because it degrades the sufferer and diminishes his self-respect, which is so powerful an agent in all moral reformation; (2) because, however equitably it may be doled out, it affects very differently different tempers, and is felt most acutely by those least deserving of punishment; (3) because it creates a feeling of estrangement from the authority by whom it is inflicted, stirs up not infrequently malign feelings, and shuts the door against gentler but more potent influences; (4) because it is apt, when tolerated, to be abused. (5) The most conclusive argument against corporal punishment, however, is that it is quite unnecessary. Many schools, large and small, are conducted most successfully without any resort to it, and the day cannot be far distant when in all schools in this country it will pass in desuetude. Of course every argument used against corporal punishment in its accredited forms and inflicted by the recognised emblems of scholastic discipline, applies with tenfold force against irregular modes of its infliction. Blows with rattans and rulers, and boxing of the ears, ought scarcely to require to be condemned, but unhappily cases present themselves from time to time in hospitals and police courts, exemplifying the dire consequences which occasionally follow

* Gladman.

these kinds of chastisement, and proving that they are still in vogue. Rupture of the tympanum, concussion or insidious disease of the brain, has resulted from boxing the ears, and incurable injuries, deformities, and disorder from sudden blows given punitively to children.' *

6. Instructions to H.M. Inspectors of Schools.

'My Lords regret to receive frequent complaints of the excessive use of corporal punishment in schools, and of its occasional infliction by assistants and pupil teachers and even by managers. The subject is one on which your own observation is necessarily incomplete, since children are not likely to be punished in your presence on the day of inspection. But you will not fail in your intercourse with teachers and managers to impress upon them that the more thoroughly a teacher is qualified for his position by skill, character and personal influence, the less necessary it is for him to resort to corporal chastisement at all. When, however, the necessity arises the punishment should be administered by the head teacher; and an entry of the fact should be made in the log-book.'

7. The time and place of punishment, and the person administering it.

The infliction of personal chastisement is of such importance and has so many bearings that it behoves the teacher to consider carefully when, where, and by whom it shall be administered. Only certificated teachers with a full sense of their responsibility, and competent to rule without recourse to the rod except in extreme cases, should administer corporal punishment in any form; on no account should pupil teachers, or others not of ripe experience, be permitted to use it as a means of discipline. A boy deserving personal chastisement should be removed either to the teacher's private room or a class-room. The imagination of children is such, that the punishment will not lose any of its effects as a deterrent by being inflicted out of the children's sight. They are very likely to have their sympathies aroused for the suffering offender if the punishment be conducted before them; and there is, furthermore, always the danger that the offender may indulge in

* Dr. Crichton Browne in *Book of Health*. Cassell.

bravado, and thus necessitate a greater punishment than his original offence deserves. As a preventative of any display of anger on the part of the one administering this form of punishment, it is a safe plan to allow time for feelings to subside; only, therefore, in very obstinate cases, where the effect of delay might be disastrous to the discipline of the school, should this extreme form of punishment be administered immediately upon after the offence.

The frequent administration of personal chastisement may be considered as evidence of weakness or failure in applying the higher modes of school control. It is a debasing form of chastisement, and yields no satisfaction to either of the parties concerned. The teacher who, with a large school under perfect control, can look back upon a week, or it may be upon week after week and month after month, without having had recourse to this form of penalty, has gained a most valuable ascendency over the minds and in the hearts of his pupils. He has learned the art of thorough self-control, and is imparting the same dignifying power to both his subordinates and his pupils; and no teacher can provide either with a power which will be of greater service to them throughout the whole of school life, and in the wider intercourse which awaits them in the life outside.

THE THIRD AND HIGHEST STAGE OF SCHOOL DISCIPLINE.

Introductory.

It has been stated in previous chapters that at first a child's power of application is almost entirely controlled by forces outside itself; it can be attracted to a keen observation of an object by the beauty of its colouring, or by the strangeness of its shape; the feelings of the moment are overpowering, and these may be utilised for purposes of intellectual activity and moral control. Gradually, however, there is developed an ability to repress the feelings of the moment, and activity becomes more and more placed under the stimulus of the pleasure or pain which follows, respectively, either the successful performance of effort or its neglect. This is the period of school life when the adventitious aid of marks, rewards, prizes, approbation, and censure,

or other forms of punishment, is most naturally of avail. We cannot, however, always be rewarding and censuring. The full preparation for life beyond the school requires that the stimulus, which at first was almost entirely from without, shall develop in the latest days of school life so as to spring from within.

The following are the forces which should become available for control in the later days of school life. (1) **Sympathy,** an inward motive prompting us to act with full regard for the feelings of others. (2) **Duty,** which requires that we comprehend our proper relationship to others, and that we possess the power to regulate our actions according to certain ascertained principles of conduct. (3) **Conscience,** which very early in life manifests itself, and is the development of a feeling of unrest or content following our actions when these are respectively wrong or right. (4) **Habit,** a result of repeatedly acting in a given direction, by which action we develop a facility in certain lines of conduct, and a decided bias towards their repetition. (5) Finally, **Self-control,** which sums up the united effects of all the preceding forces.

To act so as to have due regard for others, and according to the dictates of duty and an awakened conscience, and, further, to act in this way repeatedly, so that such action becomes habitual, is to manifest the force of self-control, which the best school discipline should aim at developing. Actions regulated in harmony with the sum of conditions of conduct thus stated, constitute what we understand by **character.** The forces of control enumerated above are so important in their effects during the advanced stage of school discipline, that it may be well for us to consider each in fuller detail.

(a) Sympathy.

The teacher desires the progress of his pupils. He shares in their toil, is delighted when they succeed, and manifests uneasiness when they fail. Sympathy brings to the pupil who succeeds a double pleasure ; there is the delight which he feels at his own success, and the pleasure which he experiences because his teacher is satisfied. There will always be some scholars who give satisfaction in every class, and whilst the teacher is careful to acknowledge effort, even when it does not bring success, he will do well to acknowledge real ability wherever it is manifest. This will have a powerful influence over the entire

class, for all are or should be of nearly equal attainments, and what one scholar is able to do, another ought not to find very difficult to accomplish. To gain the teacher's approval should be the ambition of all, and this not so much for the pleasure which successful effort yields the scholar, as the delight it manifestly gives the teacher.

> 'Study is not always a delight, especially at the outset. Here is the teacher's opportunity. The closer he comes to the learner in kindly appreciation of his special difficulties, the more he will call forth childish gratitude. The severity of the tutor and the disciplinarian may well be mitigated, on occasion, by active participation in childish pursuits.
>
> 'In these ways, by proving himself the child's friend, the teacher may in time win a responsive sympathy and a habit of consideration from the learner. The securing of this sympathy of the child is of the first consequence to success in teaching' *

The sympathy, intellectual and moral, by which a group of children stimulate one another.

There is a form of sympathy largely available in class teaching at all stages of school work which must not be confounded with that described above. '*Sympathy of Numbers*' is thus described by Mr. Stow, who claimed for it a high place in both intellectual and moral training. 'The power of "Sympathy of Numbers," intellectually and morally, although hitherto overlooked by writers on education, is yet a practical principle of the highest importance. Example, indeed, is more powerful than precept; but *sympathy* is more powerful than either, or both combined; and when example, precept, and sympathy combine, as in boys of the same age, an influence is in operation in opposition to which the example and precept of parents and guardians are rendered almost powerless. In conducting an intellectual lesson with half-a-dozen children in a class of different ages like a family, the questioning must all be individual; whereas with a gallery of 70 of nearly the same attainment (and the nearer the better), the questioning, and development, and training may be conducted collectively; whatever answers are brought out by the teacher from one or more of the children can be made the possession of all, so that every one may learn what any one knows—thus diffusing knowledge more widely and causing the variety of natural talents and dispositions to operate favourably on all. A similar effect takes place in the moral development of dispositions and habits in the play-ground, some particular instances of which should be noticed by the teacher on the return of the children to the school gallery, and when again the sympathy of numbers operates favourably in applauding the good deed

* Sully—'The Teacher's Psychology.'

or condemning the misdemeanour. There is a power, therefore, in numbers not experienced in individual teaching ; and the playground and the gallery, conjoined under proper management and superintendence, afford *the most perfect sympathy.*'

Intellectual sympathy of the teacher with his class.

In addition to sympathy with their teacher, which children should be expected to develop in their school-work, and that intellectual and moral condition which has been termed 'sympathy of numbers,' and which is seen from the above sketch to be a feeling which children naturally possess towards those of their own age and attainments, there is a third form which sympathy takes in all successful oral and class teaching. It is the power which the teacher of little children has of placing himself upon the intellectual level of those whom he or she teaches. Unless this intellectual sympathy with young children be present, there must necessarily follow a waste of effort on the part of the teacher and a weakening of attention on the part of the class. It is as fatal to continued effort of the scholars when the teacher presents material beneath their capacity as when he provides matter above their intellectual grasp. How is the teacher to find the middle course? Evidently, and only, by a thorough knowledge of his class, a skilful preparation of his lesson, and above all, by the ready power of gauging the thought and knowledge of the class as these reveal themselves in the replies and other statements of individual children.

(b) Duty.

To act from a fully developed sense of duty requires a wide knowledge and lengthened experience. Such action on the part of our pupils supposes a power to grasp the obligations they are under to others, especially their parents, teachers, and fellow scholars ; it further requires that our pupils keep in view the effect of every act upon their own present condition and future prospects, and finally that they act as responsible beings in the Divine sight, knowing that they will be held accountable for everything they 'say or do.' It is not needful in a consideration of duty as it relates to school control (especially that of the day school, where children are under the influence of their homes during much of each day) to enlarge upon duty to parents. It will be sufficient if we limit the enquiry to school work and life.

(1) *The pupil's sense of duty to himself.*

This is a feeling which depends upon the pupil's ability to anticipate the future. His prospects in life depend largely upon the use made of present opportunities. This sense of duty may be fostered by the success which he sees others in the school have attained. A record of all who have gained distinction may with profit be kept and special mention be made of those who have obtained honourable position. Moral worth should at all times be acknowledged equally with intellectual ability. The teacher may with advantage seize the opportunity when granting testimonials for situations, and when scholars who have done well leave school, to show publicly the advantages of steady faithful work throughout the entire school career, and may draw special attention to the double advantage which follows such conduct, viz.—(1) The development of a good character; (2) The good-will and help of teachers and friends. There is, further, the sense of inward satisfaction which accompanies right conduct, and which, as an abiding possession, every scholar should be encouraged to gain.

(2) *The pupil's sense of duty to others.*

Parents and teachers can do much to promote this form of duty by mutual counsel and action. The parent should impress the respect their children owe to their teacher, and the teacher may in turn emphasize with advantage the obligation children are under to their parents. The value of both lines of action will largely depend upon the regard in which children hold both parents and teachers. Some parents complain that their children are more regardful of their teacher than of themselves; the truth in such cases as these is, that the teachers are more deserving of regard than are the parents. In some districts the teacher's moral training is immensely hindered, if not entirely negatived, by the direct opposition of parents who do not hide their dislike of the school and all connected with it. This is, however, only a passing phase of elementary school experience. When the value of education becomes more universally recognised, this obstacle to the higher training of children will disappear. It is to the more stimulating influences of their homes that the high value placed upon education by the youth of Scotland and Switzerland is mainly due. Upon the importance of the co-operation of parents and teachers in school work, the following extract is selected from Miss Edgeworth's *Practical Education*.

'Besides bestowing some attention upon early education, parents who send their children to school may much assist the teacher by judicious conduct towards children when at home. Mistaken parental fondness delights to make the period of time which children spend at home as striking a contrast as possible with that which they pass at school. Even if parents do not join in representing a schoolmaster as a tyrant, they are by no means displeased to observe that he is not the friend or favourite of their children. They put themselves in mean competition with him for their affections, instead of co-operating with him in all his views for their advantage. . . . The success of any plan of education must depend upon the concurrence of every person and every circumstance for years together to the same point.'

(3) *Duty to God.*

Instruction in this, the highest form of human duty, should follow the plan which Divine Wisdom has ordained for the instruction of mankind in His Will. Examples of life acting out the Divine Will should be read as they are found in the Bible, accompanied by such explanations as may be necessary to make their meaning clear to the child mind. Of especial value in teaching the child its duty to God, will be the real life of teachers and parents as these present examples of conduct regulated by the Divine Will. A complete knowledge of the words and meaning of the Commandments, together with the fuller interpretation which these received by the teaching in the 'Sermon on the Mount,' should, as a birthright, be in the possession of every child.

HABITS: THEIR FORMATION, AND PLACE IN SCHOOL DISCIPLINE.

1. Introductory.

Every kind of mental or physical operation—thinking, feeling, and acting—tends to become easy by practice. In addition to this facility in any or all of these exercises there is a tendency or bias set up by repeated effort, so that we become inclined to think, feel, and act as before. The facility gained in any exercise, together with the tendency or bias to repeat the effort, both being the result of frequent practice, forms what we understand by habit.

2. How habits are formed.

It may be well to notice, first, some of the conditions under which one of the most important of school habits is formed. For example, in the case of attention the parent or teacher stimulates effort on the part of the child by either making the object of attention attractive, or by offering a word of encouragement or warning. In this way a start is made. The natural condition of child life is one of constant change; its mind flits from one object to another, and the first effort of continuous attention results therefore in bringing the natural wandering of the child mind for a time under control.

Two conditions of effort are now apparent. These are—(1) The holding in abeyance a natural inclination to constant diversion of mind, and (2) the endeavour to maintain effort continuously in one direction. The two conditions are opposed to one another, and success will only be maintained by the introduction of a third condition, viz., that we continue the effort of attention only so long as we are able to overcome the natural tendency to wander. After scoring one success we may afterwards hope to exceed the limit of the first effort because of the natural bias of the mind to act again, under the same conditions, in the same way. Care, however, is necessary, so far as it is possible to judge, that we do not exceed the combined force of first effort plus natural bias. With a group of children this precaution could be exercised so far as the greater portion of the little community is concerned, because all are not constituted alike, and on the first manifestation of inattention in the class, the teacher should take the hint, and, by immediately changing the lesson, save the remainder from following the example of the weakest. In this way the attention may be gradually strengthened, and progress towards the formation of a habit of attention made. Care, however, must again be taken that the exercise is a progressive one and not uncertain in its effects; for nothing is so likely to delay the development of the habit of attention as frequent lapses into indifference and inattention during the time when the effort of attention is being exercised.

We are now in a position to briefly review the methods by which a skilful teacher aims at the formation of a habit of attention, viz.:—

(1) **There is the teacher's stimulus, sometimes termed the *initiative impulse,* as *e.g.*, a request, an attractive object, &c.**

(2) **There is the child's effort in response, (*a*) to attend, (*b*) to check inclination to wander.**

(3) **There is the short exercise of attention so that the inclination to wander (*b*) is not allowed to overcome the effort to attend (*a*).**

(4) **There is the natural bias to act again as before, under the same conditions, together with facility to act—the effect of repetition—the two resulting in an increasing power of attention, and ultimately in the formation of the habit of attention.**

Instinct *versus* Habit. From the above sketch it is manifest that habits are the result of effort ; they are acquisitions and demand exercise before they are formed ; they are most effective for the purposes of control in the more advanced school period and after leaving school ; if, however, we watch the infant in whom habit has as yet no force, we cannot fail to observe that the child has certain natural powers or endowments, such as : (1) *Activity*, arising out of the pleasure which accompanies the exercise of its various powers. (2) *Curiosity*, based upon the pleasure it feels in using its intellectual powers (mainly the senses at first). (3) *The feeling of pleasure*, resulting from harmonious movements as in marching and other physical exercises, from seeing objects beautiful in form and in colour, and from singing and music. These natural endowments are termed **Instincts.**

Whilst these instincts contrast strongly with habits in that they are natural, that they belong to the infant period as well as the more advanced stage, and that they stimulate to effort rather than result from effort, yet they form a very important element in the formation of habit. Hence these instincts should not be repressed but directed—activity controlled becomes diligence, and curiosity properly guided develops into a habit of careful observation and, it may be, into scientific investigation.

3. Some habits necessary for successful control.

(*a*) *The habit of Obedience.*

This habit is of the first importance in successful school control. School work increases in value as obedience becomes more complete and habitual. The habit of obedience is formed under the same conditions as those indicated in forming the habit of attention; for example, a boy is introduced into a class where obedience is the rule. In imitation of his schoolfellows he at once promptly follows the directions of his teacher. The stimulus to obey is not, in this case, completely associated with the teacher ; it is derived more from the tendency to follow

the example of the other members of the class. Good order in this way becomes productive of order. Accompanying this effort of obedience is the repression of the tendency to act independently either of the teacher or fellow pupils, or, briefly, the tendency to disobey. By repeated acts of obedience, the tendency to associate the orders of the teacher with instant effort to do what is told is developed, so that, in time, the pupil's action becomes associated with the teacher's order rather than with the mere example of other members of the class, and, in the end, the boy, instead of following the example of other members of the class, may become the most prompt to follow the order of the teacher, and being the first to obey, he sets an example to the rest.

> In forming the habit of obedience, as in the case of attention, it is most important that we estimate carefully the extent of the power possessed by the learner. Our demands must not exceed the capabilities of the pupil. To leave a number of comparatively new boys without oversight might be the occasion of a display of disobedience, and a very few exhibitions of this nature would very seriously weaken the habit we wish to develop. **The formation of the habit of obedience is most easy when, on account of a regard for the teacher, there is a feeling of pleasure associated with the immediate performance of his wishes and commands.**

Value of drill movements.

The habit of obedience is perfect when there is no hesitation in following the command, *i.e.*, when there is no manifestation of the smallest trace of opposition. The action thus becomes mechanical. As tending to accelerate the formation of this perfect habit of obedience, signals and drill movements are of great service. The following are some of the advantages following their use:—

1. Signals, such as the sound of a whistle, the tap on a bell, the words 'one,' 'two,' &c., are short, and the association between the signal and the action may be made instantaneous and complete.
2. There is no room for hesitation in interpreting the command. When a mechanical association is sought to be formed, hesitation or delay arising from any cause tends to weaken the association.
3. The personal element, so far as the teacher is concerned, is removed. The signal is obeyed; the teacher's order is not thought of.

It should be noted that drill movements are of value in securing prompt obedience up to a certain limit. They should not be multiplied so as to take the place almost entirely of direct and individual appeal. With the older children, class drill is not so effective as with junior classes. The drill of the upper classes should develop into exercises demanding thought and requiring the skilful use of the important physical organs; such exercises are provided by the movements in 'military drill.'

Value of School Rules.

The usages of the school are best learned by actual practice. The exhibition of conduct and work as seen in the exercises of the different classes in the school will be far more potent in influencing the behaviour and effort of individual scholars than the multiplication of rules. It may, however, be of service, for the guidance of new scholars, that a few of the most general and important rules of the school be placed in a prominent position in the school-room. They should not refer so much to matters relating to work and behaviour in classes under the entire direction of a responsible teacher, as to those matters of attendance, home lessons, and general appearance and behaviour in which the influence of parents, or others, might on occasion clash with that of the teacher. The rules should be few, should be thoroughly understood, and should be rigidly kept, otherwise they tend to the weakening of control.

'Let your rules to your son be as few as is possible, and rather fewer than more than seem absolutely necessary. For if you burden him with many rules, one of these two things must necessarily follow; that either he must be very often punished, which will be of ill consequence, by making punishment too frequent and familiar; or else you must let the transgressions of some of your rules go unpunished, whereby they will of course grow contemptible, and your authority become cheap to him. Make but few laws, but see they be well observed, when once made. Few years require but few laws; and as his age increases, when one rule is well established, you may add another.'

The degree of direct obedience should vary with the age of the pupil.

In the infant stage commands must be frequent. During lessons the child must be kept in the presence of the teacher. Periods of self-directed effort at this stage mean efforts of that

wandering kind which, whilst they may serve for a pastime, do not conduce to the formation of habits of obedience and diligence. As the pupil advances, there should be opportunity afforded—slight, it may be, at first—for the exercise of independent effort. There should be less of direct command, and as the power of reflection is strengthened and the knowledge of principles of conduct become known, obedience should be rendered to what reason dictates and duty requires, rather than to what the teacher enjoins.

'To determine what degree of obedience it is just to require from children, we must always consider what degree of reason they possess; whenever we can use reason, we should never use force; it is only whilst children are too young to comprehend reason that we should expect from them implicit submission. The means which have been pointed out for teaching the habit of obedience must not be depended upon for teaching anything more than the mere habit. When children begin to reason they do not act merely from habit; they will not be obedient at this age unless their understanding is convinced that it is for their advantage to be so. Wherever we can explain the reason for any of our requests, we should attempt it; but whenever these cannot be fully explained, it is better not to give a partial explanation, it will be best to say steadily, 'You cannot understand this now; you will perhaps understand it some time hence.' Whenever we tell children that we forbid them to do such and such a thing for any particular reason, we must take care that the reason assigned is adequate, and that it will in all cases hold good. Our pupils should distinctly perceive that we wish to make them happy, and every instance in which they discover that obedience has really made them happier will be more in our favour than all the lectures we can preach. We may observe that the spirit of contradiction, which sometimes creeps out in young people the moment they are able to act for themselves, arises frequently from slight causes in their early education. Children who have experienced that submission to the will of others has constantly made them unhappy, will necessarily, by reasoning inversely, imagine that felicity consists in following their own free will.'

Hints upon giving Commands.

1. *They should be in brief form.*—'I want every boy in the class to show his book' should be contracted into '**Books**, show!'
2. *They should be such as tend to secure the simultaneous movement of the entire class.*—In the first of the orders given above, a few of the children would take some time to comprehend the command; a sharp bright lad would most likely know what was required before the order

was completed, and his book would be shown immediately; others, near, would follow his example, whilst some would require a second appeal before carrying out the order. In the brief form of the order the first word would be sufficient to indicate the nature of the command. And at the sound of the word 'show' (which would not be given until all were seen to be ready) the books would be presented simultaneously throughout the class.

3. *They should be preceded by a call to attention.*—If the class is engaged in a noisy exercise, as in draft reading, it will be necessary to command silence by some signal recognised for that purpose. Immediately quiet is obtained, give the command. No excuse should now be allowed for failure to obey; if, however, the order is given when the attention of the class is concentrated upon their work it is very likely that some member would not hear the command, and, hence, would have a very good reason to offer for non-obedience.
4. *Commands should not be repeated.*—If this be done at all it will soon become necessary. Children readily learn to presume upon the slightest sign of weakness. If the preceding hint be observed there will be no excuse for non-compliance with commands, and none should be allowed.
5. *A command should not be associated with a warning or threat.*—These put the obedience to command in the choice of the scholar, and the teacher having named the punishment must carry it out, but the offence has been greatly increased by the act of the scholar in refusing to obey. The scholar therefore receives the punishment for some trifling neglect, whereas he deserves punishment for deliberate disobedience.
6. *Commands should be necessary.*—The multiplication of commands is a great source of weakness; a word of commendation given to a scholar, or a hint suggestive of improvement to the entire class, will be found often to stimulate to effort in the required direction more effectively than the command for all to stop work, followed by other commands of a fault-finding nature. It is a healthy procedure in school tactics to have regard for good work and conduct rather than to have a constant tendency to spy out and expose every little fault.

(*b*) *The habit of Diligence*

The habit of steady effort is one which every teacher who desires the success of his school must seek to develop. The brightest and happiest schools are those in which every scholar throughout the entire day has work allotted him to do. Nothing tends more to disorder in a school, and to the occurrence of conflicts between pupils and teachers, than intervals of inactivity and idleness. A well-arranged time table providing a healthy variety and a regular succession of lessons;

a sufficient and competent staff to stimulate and direct the activity of the scholars; and the whole school under the superintendence and example of an enthusiastic teacher—these are the conditions most favourable for the development of the habit of diligence. Besides the stimulus supplied by the control and example of both teachers and fellow scholars, it will be necessary to take care that application be not too prolonged, otherwise indifference may manifest itself, and the habit of application, in this way, become weakened.

Steady and continuous work throughout the year will have a powerful effect upon the formation of the habit of diligence. Fitful work, such as that done under the stress of an impending examination, followed by a re-action in the direction of loose and indifferent effort, must necessarily weaken, if it does not indefinitely delay, the formation of this habit. Similarly, with individual scholars, there are some who will need constant attention on account of the tendency to the intermission of periods of great effort with periods of lassitude and indifference.

'After all,' says Dr. Fitch in *Lectures on Teaching*, 'the great safeguard for good and happy discipline in a school is to fill the time with work. If a child is to have an interval of leisure, let it be in the play-room or ground, where relaxation is permissible and even noise is not a sin. But let him have no intervals of leisure in school. There, and in school-time, where play is not permitted, let work be systematically prescribed. You will, of course, take care that the work is duly varied, that it does not put too great a strain on one set of muscles, or on one set of faculties; you will see that light mechanical work alternates duly with serious intellectual application. But work of some kind—work which is duly superintended, and which cannot be evaded—should be provided for every minute of the school-day. "Let every child have," said Joseph Lancaster, "at all times something to do, and a motive for doing it."'

(c) *The habit of Self-Control.*

A school may manifest in its quiet demeanour the habit of obedience almost to perfection. Every scholar in it may move and act with the utmost regard for the teacher's command, and the school may as a whole appear very quiet and orderly; there may be in addition to this quiet order a creditable amount of diligence manifested and a satisfactory amount of work accomplished, and yet not a sufficient development of the power of self-control. Obedience may be obtained at the

expense of life and energy ; a listless community, a dull school, is one of the saddest of sights. We may control too much ; diligence is secured, it is true, but less as the result of the pupil's independent effort than on account of the constant stimulus to exercise exerted by the teacher. Do we wish to find the amount of independent effort possessed by a class ? The home work will furnish a fair test. Leave the class now and then for an interval of self-directed work. This is a severe trial, and we must not at first presume too far on the ability of the class to satisfy us. One weak scholar may spoil the experiment, and failure is the one experience we must try to avoid.

It is generally acknowledged that the results of school teaching are of greatest worth when with the acquisition of knowledge there is the development of intellectual power and the strengthening and growth of the higher motives to action (sympathy, duty, reason, and conscience). At first the child is controlled by its teacher, and is almost entirely dependent upon the stimulus of the teacher's presence and active co-operation. In a less degree it acts from imitation of, and in sympathy with, its fellow pupils. This 'sympathy of numbers' is powerful whilst the mere imitative impulse is strong, *i.e.*, in early school days. In later years this power continues to act, but with gradually weakening force, until, in adult life, action is considered weak which has no other reason than the fact that others act in a certain direction.

'Whilst the direct and personal influence of the teacher over his pupils can never be too strong ; at the same time, a teacher whose power over his scholars is great can best afford to cultivate a spirit of self-reliance in his pupils. His scholars need to practise this form of control if it is to be developed, and opportunities should be given for its exercise. At first, such exercises (following the rules for the formation of habits generally) should be short, so as not to risk an exposure of the pupil to failure ; gradually, however, they may be increased in number, and each may be lengthened in time, until the power of self-directed effort becomes strong and habitual.'*

(*d*) *Habits of Neatness and Order.*

There are schools in which the mental activity of the school is well developed, the diligence of the scholars is abundantly apparent, and their power of independent effort is clearly

* 'Principles of Oral Teaching and Mental Training' (Cowham).

manifest; at the same time, the whole of this educational result is discounted by a want of neatness and order in the scholars' presentation of themselves and their work. The want of neatness is apparent in the arrangement of the school apparatus, in the litter distributed about the room, in the disposal of their books by each scholar, in the style in which their work is displayed on paper, and in the personal appearance of each pupil. When once the habits of disorder enumerated above have been allowed to develop, it will be found difficult to displace them by habits of neatness and order. By an example of neatness a teacher can do much to stimulate orderly habits in his pupils. Example is much more powerful than precept in obtaining the desired result. The school should provide receptacles for the collection of waste paper, and for the custody of school books and other appliances. The distribution of ink is often the cause of considerable untidiness in the appearance of the floor and the desks. Trays for the collection, and a small closet for the filling, of ink-wells, will prevent this untidiness.

With the stimulus of the teacher's constant example and the encouragement given by the provision of receptacles for the custody of school apparatus, there may be added certain rules of neatness and order. Compliance with these rules should be encouraged by some sign of approval given to the class for special distinction in neatness of appearance and for order in their work. The exhibition of a neatly-worked home lesson, a copy book, or an examination paper, will do much to stimulate neat working throughout an entire class. The habit of neatness will require constant vigilance on the part of the teacher, and nowhere more than in the school where most of the available effort of the children is utilized in intellectual work; at the same time, it should be remembered that by a neat and orderly presentation of themselves and their work, both scholars and teachers are best able to secure the fullest advantage from their labour.

(*e*) *The habit of Punctuality* has a marked effect upon the orderly work of a school. Beyond, however, the effect of this habit upon school discipline is the beneficial influence which it exerts upon individual character. Punctuality has been termed 'the soul of business.' The habit should be formed in early life, and to this end the following means may be adopted:—

1. Make the time of school meeting distinctly known.
2. All the teachers engaged at the opening of the school should be present a few minutes before time.
3. Mark in the registers all who are present at the opening of the school. This may be done in a distinctive way ; by red ink marks, for example.
4. If many fail to be punctual, show what they have lost in school work, and also the inconvenience to their school-fellows, who must again be taken over the work the late ones have missed.
5. As the late attendance of scholars is frequently due to the action of parents, inform them of their duty and the loss which arises from its neglect.
6. For a repetition of lateness the scholar may be caused to make up the lost time.
7. Sometimes reward early coming by early going.
8. When sufficient data have been collected, point out to the classes collectively the association of regular and punctual attendance with progress in school work. The older children may be able to understand that a similar association will exist between punctuality and their success in after life ; hence the value of forming the habit whilst at school.

HABITS OF CONDUCT WHICH AFFECT THE TONE OF THE SCHOOL.

1. Introductory.

The habits of attention, obedience, diligence, neatness, punctuality, and self-control already noticed are necessary (1) to the successful intellectual progress of our pupils, and (2) to their power of displaying their acquisitions in the most effective manner both in and out of school. There are however still higher forces in school control which may be fostered, and which, when developed, constitute what has been termed the 'tone' of a school.

To meet the highest requirements of school discipline, the Code demands 'that all reasonable care be taken in the ordinary management of the school to bring up the children in habits of good manners and language, and also to impress upon them the importance of consideration and respect for others, and of honour and truthfulness in word and act.'

The process of training by which the above features of school life and control may be fostered and developed follows that already indicated in the formation of habits generally.

(1) There must be the example of the teacher combined with direct teaching on such topics as truthfulness, honour, good manners and language; added to this there will be the example which the advanced scholars, who have profited by their course of training, set their junior school fellows, this example becoming, in time, the most powerful of influences for good upon the tone of the whole school.

(2) Beyond the stimulus afforded by the examples set by both teachers and elder scholars and the lessons of the teachers, there must be the practice of these virtues by the scholars themselves. Every opportunity should be seized for encouraging the practice of good manners, of consideration for one another, and of honour and truthfulness in word and deed, and every violation of these virtues should be severely censured.

(3) We must, further, be very careful never (so far as our judgment serves) to subject our pupils to conditions in which they would very probably fail to maintain their honour or truthfulness.

With these principles to guide us, we may hope to foster and develop the higher forces of conduct during the stay of children in our schools, so that these may continue with them as goodness in an habitual and hence abiding form, guiding them to useful and faithful service in all the relationships of after life.

2. Truthfulness.

In our training of children we cannot be too careful in the methods we devise for strengthening the virtue of truthfulness. We may do much by persistent effort to develop in the minds of scholars a high regard for truth; on the other hand, we may by trifling mistakes do equally as much towards weakening their estimate of the value of truthfulness. The following are some of the methods by which we may strengthen this virtue:—

(*a*) *The teacher's example.*—Of course the teacher will not willingly speak nor act a deliberate falsehood; at the same time, we must remember that children cannot distinguish between the grosser and more refined forms of deception and untruth. If we promise something and forget to keep our promise, children who have not forgotten the promise will not be profoundly

impressed with the necessity of always keeping strictly to their word. The observation of the time-table, the marking of registers, the careful checking of the daily attendance, are matters of every-day occurrence, which, in time, produce an accumulated effect on the children's regard for accuracy. The management of examinations and of days of display, in which the work of each pupil is brought to view in order to please parents and visitors, may be made occasions for practical lessons in truthfulness or otherwise.

(*b*) *The example of fellow-pupils.*—Where a school manifests amongst its elder scholars a high regard for truth—where the cowardly act of lying is frowned upon, and where the truthful word, spoken, it may be, at some personal loss, is followed by approval, the stimulus to truthfulness is most effective.

(*c*) *The practice of truthfulness on the part of the pupil.*—Here it is not intended that special lessons in the practice of truthfulness should be devised, and children subjected to success and failure in the same fashion that they work a sum according to a certain rule in arithmetic. The practice should rather form a part of every school exercise ; as, for example, their knowledge of language at first is limited, they do not use words in their exact meaning. Children can, without any reflection upon their truthfulness, be taught the exact meaning of the term they employ, and thus, in an indirect way, be impressed with the value of exact expression. Then, again, some children exaggerate without any intention to deceive ; they are led by an imagination not as yet fully under control. The correction which follows will be a lesson to them to practise truthfulness of statement in future. School exercises, such as those of marking their own mistakes in dictation, and correcting the errors they have made in arithmetic, should in the upper classes be entrusted to the pupils themselves. There will be circumstances when on account of some fault or mistake the temptation to hide the error may be great. Truthfulness under these conditions may receive a word of commendation.

(*d*) *The correction of faults, deception and falsehood.*—Notwithstanding all the skill with which experience and careful effort may invest a teacher's method, there will be found children who, either on account of their timid nature, or from the training received outside school, yield to the slightest temptation to deceive. In each case it will most likely be found

that some fault has been committed and is now discovered, and in order to evade the punishment of the original offence, resort is made to deception and possibly to actual falsehood. The first precaution necessary in school control, so far as the scholar is concerned who is not suspected of falsehood by reason of previous fault, is that the teacher be quite sure of the fault with which the scholar is charged. It is far better to give a general warning to the whole class and trust to that for the desired effect, than to make an individual charge without being perfectly sure of the ground. Should, however, the pupil, known to be guilty, deny the offence, it becomes necessary to act promptly for three reasons, viz., (1) to accompany the falsehood with some form of punishment, (2) to stop its recurrence and thus to prevent the formation of a habit of lying, and (3) to deter the other children who may be in the secret from indulging in a similar offence. Suppose the case not one deserving the severest treatment on account of frequent repetition, the teacher then may state the whole circumstances, the punishment which the original offence entailed, and now show the additional offence, how serious it is, what its consequences must be so far as the scholar's credit is concerned. The teacher will gather guidance in the kind of punishment the act should receive, from the manner in which the scholar receives his reproof; with some, the nature and full enormity of their offence would dawn upon them whilst the teacher is speaking, their regret would manifest itself at once, and the punishment of their own feelings would be sufficient; with others, it might be necessary to isolate them from the class until after dismissal; then, by means of a private review of the circumstances, the scholar might be led to the same condition of mind as in the first case; it might, however, be necessary to call in the help of the parents; they know the weakness of the boy; the fact that what they already know is now found out and is followed by the displeasure of the teacher, may impress the scholar with the serious nature of his fault and may be followed by true contrition.

(*e*) *Children must not be exposed to almost certain failure.*—If faults are punished too severely, there may be engendered in this way such a dread of being found out, that in order to escape the punishment following discovery a timid child is sorely tempted to say what is untrue. Sometimes the trouble

required to thoroughly sift a case of suspected untruth, and to deal with it when discovered, is such that cases are ignored or passed lightly over, and a premium is thus put upon falsehood. It is weakening to a child's truthfulness to suspect him constantly of untruth. The child's reputation for uprightness is the chief stimulus to his truthfulness, and if this reputation be destroyed the stimulus to tell the truth is thereby weakened.

(*f*) *Fear begets falsehood; trust encourages truthfulness.*—The community which is ruled by fear soon becomes proficient in cunning and deceit. This is perhaps most manifest in the hesitation which children show in their replies to questions. The reply is not determined so much by the pupils' knowledge as by the way the answer is likely to be received and dealt with by the questioner. Amongst the negro slaves but few could be found whose word could be relied upon, and the same is true of the oppressed in all communities. Wherever fear is the governing motive in school control there is certain to be developed a disposition to deceive, and, in time, the habit of lying. Where children are treated with kindness, justice, and firmness, they may be trusted; and when they see that this trust brings with it a gradual loosening of the restraints which were necessarily imposed before, they will strive to maintain and to increase the confidence reposed in them. 'By degrees, after your pupil has taught you to depend upon him, your confidence will prevent the necessity of any examination into his conduct. This is the just and delightful reward of integrity; children know how to feel and understand it thoroughly; they feel the pride of being trusted, the honour of having a character for integrity; nor can it be too strongly impressed upon their minds that this character must be preserved, as it was obtained, by their own conduct. If one link in the chain of confidence be broken the whole is destroyed.' In this way reason and utility confirm and strengthen the habit of truthfulness.

Summary of conditions of discipline conducive to truthfulness.

We are now able to review the progressive treatment to which children should be subject, in order to foster and develop

in them a truthful spirit. The stages of treatment may be briefly summarized under the words *(a)* **Examples** and their **imitation**, *(b)* **Correction** and **encouragement**, *(c)* **Habit**, *(d)* **Reason**.

1. Examples of truthfulness in word and deed for their imitation. This is the treatment of their early years. The examples of those of nearly the same age are most effective. Hence the necessity for the careful selection of the companions of early childhood.
2. Errors to be firmly but not too severely treated. Fear in young minds being the chief cause of deceit, encourage a manly acknowledgment of a fault, and avoid the appearance of suspicion.
3. Let truthfulness, when practised under trying conditions, be generously acknowledged; and, as the habit of truthfulness becomes strengthened, reward by the removal of restraint.
4. Truthfulness, finally, when it is seen to be followed by trust, and to be essential for responsible employment and for position in society, becomes subject to reason.

3. Copying.

This is a form of deception which may be rapidly developed in a school, and when developed becomes very difficult to correct. Suitable precautions must be taken to prevent it. The stimulus arising from examinations, from the taking of places and the awarding of prizes, may be so great as to lead the ambitious child to present information as its own which has been copied from another. With young children it is best to provide means for completely preventing the practice. This can be done by placing the children who are engaged in the same work sufficiently apart. If that cannot be arranged, every alternate child only might be required to do the same work. Gradually, however, the scholars should be trained to do the same work together without any fear arising as to their integrity. In the middle and upper classes, the public opinion of the school, if on the side of truthfulness and honesty, will very materially help in securing faithful work. The self-interest of the pupil may be invoked in order to correct the evil of copying; for, by taking the results of work done by another, the pupil himself loses the benefits which the exercise, honestly attempted, would have secured for him; the teacher is disturbed in his estimate of

the pupil's ability; and the scholar's position becomes a fictitious one, and copying becomes necessary in order to maintain it.

Copying in Arithmetic.

The Arithmetic lesson offers the greatest temptation to copying. The sight of a single figure may save considerable effort during the working of a sum, and the comparison of answers at the end of the exercise has special attractions. The practice of comparing either during the progress of the working or at the end should be completely stopped for two reasons: (*a*) because it is morally wrong to show the work of another as though it were one's own, and (*b*) because the intellectual training which the working of the rules of arithmetic affords is weakened if not entirely lost when at a critical point in the process the scholar is allowed to take the reasoning of another instead of using his own powers of thought. Similarly, if the scholar at the end of the exercise is allowed to compare his result with that of another, and opportunity is further afforded for correcting any error, there will arise in time a carelessness in the whole exercise. The rules will be guessed rather than reasoned, and the working of the rules will be slipshod instead of exact.

4. Honour and consideration.

A boy's honour is considered a 'late product of moral training,' and consideration for others cannot be expected before the feeling of sympathy has manifested itself. That school discipline, however, should not be held complete which does not aim at developing a sense of honour and at cultivating a regard for the rights and feelings of others. The blush of shame should follow the mean act, and a feeling of delight should accompany the kindly deed. It should be remembered that some of the methods of school control tend to the development of the opposite quality, viz., that of selfishness. The competition for prizes and places tends to strengthen the regard for self, and in order to counteract this selfish tendency opportunities should be found for the manifestation of a generous regard for others. Helping a fellow-pupil over a difficulty in school-work; generous behaviour to playmates during the play hour; being solicitous for the good name of the school; the formation

clubs for associated games; a small contribution to some public charity—these are some of the means which may be suggested for the direct practice and promotion of the generous sentiments. To the training by direct experience, which the incidents of school life afford, there may be added many valuable moral lessons derived from a study of history and the current events of every-day life.

Whilst the training indicated above must necessarily be delayed until somewhat advanced school life, the scholar nevertheless should have, from the time of his entry into school, the examples of both consideration and honourable conduct constantly before him.* Afterwards, when he has passed the mere imitative stage, he may be encouraged to practise acts of kindness such as those enumerated above; and he must, furthermore, be reproved for any acts of meanness until, finally, when he sees the pleasure which his honourable conduct affords others, and feels the inward satisfaction which accompanies the kindly consideration of their feelings and wishes, he acts towards others partly from generous impulse, but mainly from a sense of duty and the force of reason.

CHARACTER.

1. Introduction.

The question of character naturally follows that of the formation of habits. Moral character is briefly described as made up of 'a bundle of habits.' In the preceding short review of the formation of the more important habits in school work, it has been indicated that action is at first, *i.e.*, in infancy and early childhood, mainly *imitative*. Examples of the kind of effort we wish to be followed by the child are constantly being exhibited by parents, school-fellows and teachers. To example there is added *precept*, the teaching during the early stages being based upon incidents of ordinary life and experience, in addition to those stored up in biography and history both Biblical and secular. Besides examples and precepts presented by teachers and others, there must be 'the *doing* by the child.' We may instruct merely by our example and by our precepts, but to educate morally, *i.e.*, to stimulate and develop the moral forces of the child, there must be added to instruction the actual exercise of its moral powers. The child must not only hear of the obedience, the diligence, the

* See also 'Record of Virtues,' p. 61.

truthfulness and the honour of others; it must be exercised in these forms of conduct, and possibly must be corrected for opposite lines of conduct. Then, with the exercise, there is gradually developed *habit*, or the tendency to act under given conditions uniformly in the same way. These habits multiply and ultimately form a large factor in our character; but the full development of character demands a further stage of effort. Our conscience, sense of duty, and reason form an ultimate court of appeal, and it will sometimes happen that duty will be opposed to habit, and then character is manifest in the power to subordinate the force of habit to the sense of reason and duty. In brief, what we mean by character in school life and work is, that the pupil has been so trained to act that he can be depended upon uniformly to act according to what is right and reasonable.

2. Ordinary school routine and the development of character.

The formation of moral character so far as school influences are concerned does not necessarily depend either entirely or mainly upon a special set of lessons designed for that end. The whole course of study and the entire round of duties in a well-ordered school afford abundant exercise for the practice and development of those habits which go largely to make up a good moral character. The incidental and every-day lessons in diligence, in honour, and truthfulness, imparted as they are at the happy moments when some school experience in class or playground has prepared the minds of the pupils to receive them, are of more value for training than are the moral truths which some distant facts, related or read, illustrate and teach. It is not within our province to enquire into the connection between religious teaching and moral training. Without in any way discounting the valuable and important effects of direct religious instruction, the experience of most teachers will confirm the opinion that the minds of their pupils are most open to the reception and acceptance of moral truth when some event or experience arising in the ordinary course of the day's work affords the fitting moment for the seed of truth being sown. Nor is the giving of this instruction forbidden. The teacher is enjoined by express direction in the Code 'to use all reasonable care in the ordinary management of the

school, to bring up the children in habits of good manners and language, of cheerful obedience to duty, of consideration and respect for others, and of honour and truthfulness in word and act.'

> Inspectors are also told 'that it will be possible for you to form an estimate of the tone of the school, the behaviour of the scholars, their cleanliness and obedience, their honesty under examination, and the degree of interest they show in their work. It will not be difficult for you to judge whether the ordinary discipline of the school is prompt and exact, and is yet maintained without harshness and without noisy demonstration of authority. The condition of the school furniture and premises will also be considered, and the higher grant for discipline and organization should not be recommended unless you are satisfied that the school is a place for the formation of right habits, as well as a place of instruction.'

3. Influence of the teacher and the public opinion of the school upon character.

The teacher's individuality, and his character in the fullest acceptation of the term, have much to do directly with the character of each pupil in the school. We have seen that with young children the natural force of imitation is almost overpowering, and further that throughout the entire range of school-life this power continues to have effect 'As is the teacher so is the school' is a maxim which applies as much to the power the teacher possesses for impressing his own moral qualities as to the ability he manifests for inspiring with his own intellectual force. The utmost impartiality; the strictest integrity; an open, frank and generous dealing with children; being patient and persevering without being weak or irritable; combining the docility and humility of the child with the firmness and rectitude of the righteous man—these are moral qualities which children will strive to copy, and when a fair proportion of the school community is found manifesting them a force of public opinion is developed which far outweighs the individual influence of the teacher. Children readily imitate each other, and when the weight of public opinion and of school activity is in the direction of what is right the influence for good becomes well nigh irresistible. The value of a high standard of moral character in those who are in daily contact

with the vast masses of English children cannot be too strongly urged, and the responsibility which rests upon teachers cannot be too fully recognized by them. The phrase 'an army of light' was the utterance of a statesman; that that light be shed so as to guide the children of our land into paths of moral rectitude as well as along those of intellectual advance is the crowning endeavour of every loyal teacher.

4. Over-control and character.

It has been already shown* that we may over-control in intellectual training. If the learner is always being directed in his studies, he does not sufficiently develop the power of independent intellectual effort. In the *Instructions to Her Majesty's Inspectors*, the importance of encouraging self-help is recognised, as shown by the following extract:—'The home task is found to have a very valuable effect in helping the progress of the scholar, and in encouraging the habit of application.' The rule which holds in intellectual effort is also effective in moral training. The scholar's power of self-control as to conduct should have opportunities for exercise. These opportunities need to be carefully adjusted to that strength of self-control which the pupil possesses; and it is in the adjustment of opportunity to power that the experience and judgment of the teacher will chiefly manifest themselves. With very young pupils the control of the teacher must be direct and continuous, but with the senior scholars conduct should gradually become freed from continuous control, and periods of effort completely independent of supervision should be permitted. Submission and obedience are excellent traits in school conduct, and without them school work would be unbearable and progress impossible; at the same time, submission and obedience, which, at first, are given in response to the commands of the teacher, should gradually be rendered to the dictates of duty and reason. 'It is a common and fatal error, says Prof. Sully, 'to regard obedience to personal authority as an end in itself. The ingredient in childish obedience which constitutes it a moral exercise is the dim apprehension of the reasonableness of what is laid down. And the ultimate end of moral discipline is to strengthen this feeling,

* 'The Principles of Oral Teaching and Mental Training.' (Cowham.)

and so transfer the sentiment of submission from a person to a law which that person represents and embodies.'

If, then, we continue the direct and personal control of teacher over pupil too long, we are in danger of weakening the character of the child. The effects of his own conduct should be experienced by the pupil, the sense of responsibility created in such experiences having a very high value in moral training. Here, as has already been explained in intellectual effort, that which the pupil is led to discover for himself is most effective. If, on the other hand, the pupil develops a power of self-control before his teacher is either able or willing to recognise its existence, there is some danger of a spirit of rebellion manifesting itself. Any manifestation of *self-will* is most unfortunate, inasmuch as the true course of development in control should be from a state of dependence on the part of the pupil toward one of mutual confidence and esteem between both pupil and teacher.

5. Self-control and character.

The control of the pupil's actions throughout the entire school day is necessarily very closely connected with the teacher's direct power of management and discipline. He is apt to pride himself upon the effect which his presence secures, and to be not altogether displeased with the contrast in behaviour which its withdrawal produces. The teacher has no doubt accomplished very much when he has gained complete control over the various activities of his pupils. This he must do; it is essential to progress. He may, however, do more; he may gradually transfer the seat of control from himself, as the sole centre, to each of his pupils. When self-control is thus spread from centre to centre, the entire controlling force of the school becomes much more effective for discipline; the demands upon the teacher's energy are vastly lightened, and the school, which may not, at first sight, appear so wonderfully exact and harmonious in its discipline, will upon closer knowledge be recognized as a powerful means of developing intellectual force and of inculcating moral strength. The value of this higher discipline in the formation of character is generously acknowledged and clearly stated in the following extracts from the Blue Book:—

'If, in a locality a master be placed who is really devoted to his work, who feels teaching and training to be his proper destiny, who succeeds in gaining the affections of his pupils, who softens them by kindness, moulds them by a friendly sympathy with their wants, instils the knowledge of *things* rather than *words*, and awakens wholesome sentiments in the minds of the entire mass, such a school is assuredly accomplishing a great work in connection with the mental and moral improvement of the community. I feel it important, therefore, to state that this consideration has always been one element in the judgment I have been called to exercise upon the efficiency of different institutions, and I would here record my belief that many schools by no means taking the highest intellectual standing, if tried by such a test, will be found amongst the best in their aggregate effect on the population around them.

'To keep such an end as this strictly in view demands, I am aware, considerable self-denial and self-restraint on the part of the teacher. There is almost always a tendency to aim at something that will *tell* upon an outward observer, and many parents unfortunately encourage, and almost necessitate, a course of this kind by their looking rather at what their children *can do* than considering what they *are becoming* in their moral principles and mental habits. It is impossible therefore to impress upon parents too strongly the more solid purposes of education in reference to the future life of their children, or to imbue the schoolmaster too deeply with the sentiment that he is not merely preparing boys to pass an examination on certain subjects, but training a pliant mass of human thought, feeling, emotion, impulse, and moral purpose for the great and uncertain future. This is the best antidote to the disappointment he experiences when his best scholars leave him just as they are doing him credit, and when he has, like Penelope, to renew a task which seems ever completing and yet never completed.'

SOME COMMON SCHOOL FAULTS AND THEIR TREATMENT.

1. Lateness.*

This is a fault which is very common, and which, if not corrected, has a tendency to increase. The mode of correction will depend upon the cause of the offence. The fault may arise from indifference either of parents or of scholars; if of

* See also Punctuality, p. 42.

the parents, a request from the teacher will often be sufficient; if of the scholar, he should at first be censured in the hope that the temporary loss of his teacher's esteem will be sufficient to overcome the slight pleasure he may derive from loitering on the way to school. If many scholars are involved in the offence the censure of the teacher might very well take the form of a lesson on unpunctuality, showing (1) the loss in school work; (2) the disgrace; (3) the effect of a habit of unpunctuality upon the scholar's business prospects. A repetition of the offence might be corrected by causing the time lost to be taken from playtime or made up after school time. Persistent lateness amounting to obstinacy and defiance would need severer treatment. If the attendance be delayed beyond the time for marking the registers the attention of the school attendance authorities would be directed to the matter, and if it became necessary that the stimulus of personal chastisement should be inflicted it would be better to leave the infliction with the parents, whose loss and inconvenience are greatest, than that it should be associated with the school.

> On the principle that 'prevention is better than cure,' the weight of the school opinion, as a whole, may be obtained on the side of punctuality. Teachers should all be present before the time; the register may be marked to show all who are prompt in their attendance, and some badge be given the class or division which keeps the highest average for punctuality. These are some of the methods which may be devised to overcome the tendency to lateness. It will be found that all such tactics as these become less effective the oftener they are repeated, and hence the necessity for sometimes changing the mode of stimulating to punctual attendance.

2. Truancy.

Lateness is a modified form of truancy, and when neglected is liable to develop into it. A truant does not as a rule develop his character all at once, and precautions should be taken for the discovery of any one absent without permission. Generally, the scholars who are likely to develop into truants are very few, and are well known to every class teacher. In the case of any suspected absence without leave it is well to communicate with the parents either personally or by post. It is not well to send other children after suspected truants; the less the school as a whole knows about them the better. The certainty of discovery is perhaps the most powerful deterrent from

truancy. Having made provision for finding out the fault the next step is to attempt a cure. This will depend upon the reason for the offence. If a distaste to the school is the reason it is scarcely likely that any punishment which the school may inflict would lessen the distaste, and the parents may be advised to try another school. If the cause be the counter attractions of the street, the field, or the wood, then the pleasure arising from the indulgence in these counter attractions should be discounted by the penalty which such indulgence inevitably brings—deprivations at home, loss of credit at school; and if continued to obstinacy, some form of personal chastisement might be rendered necessary. This is not, however, the business of the teacher. His work is mainly to render his school as attractive as possible, and with this his responsibility ends. The offence is not against his authority but against that of the parents; still, after making school life and work agreeable, he might with no loss of dignity, and with some gain of good-will, join the parents in any well-considered plan for reclaiming the offender. Amongst the highest rewards of effort which the teacher treasures in his memory is the recollection that the seed he has sown has not only borne fruit on the fertile soil of willing and obedient hearts, but that by diligent and timely hand he has been able to cultivate the ungenerous soil of the rebellious, and thus has been the means of restoring such to the brotherhood of the wise and good.

3. Rudeness.

This is a fault which children frequently indulge in towards one another. Boys are especially prone to tyrannise over their weaker brethren. The play-ground is the place where this vice mainly manifests itself, and here it should be corrected. In order to do this with most effect the teacher must spend some of the play-time with his pupils. There are teachers who have found the play-ground the means of cultivating kindly social relationships between themselves and their pupils, and these, in turn, have had the happiest effect upon the work of the school-room. If the teacher only appears in the play-ground to correct or censure his pupils, his presence will repel; but if he can at times unbend and enter into the games of his scholars so as to give them an increased value, he will find that corrections for rudeness will be few, and those he may find necessary to make,

such as depriving the offender of further share in the game, will, with very little effort, be most effective. It is not sufficient to correct the fault of rude or rough conduct; the example of kindly behaviour should receive a word of commendation, and thus be made the object of imitation and desire by others, and the teacher should himself take care to exhibit a model of consideration both in word and deed. It is in the practice of kindness to others that the art of kindly and courteous behaviour is best learned and confirmed.

'Begin betimes,' says Locke, 'to observe your son's temper; and that, when he is under least restraint, in his play, and, as he thinks, out of your sight. See what are his prominent passions and prevailing inclinations; whether he be fierce or mild, bold or bashful, compassionate or cruel, open or reserved. For as these are different in him, so are your methods to be different, and your authority must hence take measures to apply itself different ways to him. These native propensities are not to be cured by rules, or a direct contest, especially those of them which are of the humbler and meaner sort, which proceed from fear and lowness of spirit, though with art they may be much mended and turned to good purpose.'

4. Stubbornness and Obstinacy.

These are faults which require the greatest skill in management. They arise frequently from an inherited disposition, and through practice, both by the subject himself and by those about him, have become intensified and confirmed. In the management of the school community these faults, wherever they manifest themselves, must be conquered. The first appearance of the vice in a scholar may be treated in the following way—Allow the pupil to be isolated; he must not be allowed to share in either the work or play of his fellows until amends for the fault have been made. He has most probably dared to show his spirit before the class, and to deal summarily with him would in all probability provide the very conditions which in his present temper he would seize to make a further display of his fault. Time to cool, and especially the opportunity which this time would afford for him to observe the opposite quality of obedience in his school-fellows, would most likely have the effect of producing a sense of shame and regret for his behaviour. The fact that his conduct does not secure a companion to share his disgrace would be the most potent element in producing in him a desire to join his school-fellows

again in their willingness to do the teacher's bidding. The teacher meanwhile takes careful notice of the refractory pupil's changing moods; he must judge carefully as to the condition of his mind, and as to the time when it will be safe to repeat the command. If a first offence, then full compliance may be expected in the course of an hour; but whether one or two hours elapse compliance must be complete, and that in the presence of the scholars before whom the offence was committed. The danger of a repetition of the offence will depend mainly upon the regard in which the teacher's will is held by the school as a whole. These faults, in his children, are most frequent when the teacher first takes charge of a school. After his control has become well established over the school, the teacher will find that faults of stubbornness and obstinacy become exceedingly rare, and with the aid of a good public opinion throughout the school he may treat the offence with surprise, but with the utmost coolness. Danger and difficulty arise in fact mainly from the teacher being taken off his guard at the unexpected display, and in his unwisely attempting to deal completely with the case too hastily.

'But whenever **obstinacy,** which is an open defiance, appears, *that* cannot be winked at, or neglected,' says Locke, 'but must, in the first instance, be subdued and mastered; only care must be had, that we mistake not, and we must be sure it is obstinacy and nothing else. Nor is that hastily to be interpreted obstinacy or wilfulness which is the natural product of their age or temper. In such miscarriages they are to be assisted and helped towards an amendment, as weak people under a natural infirmity. Faults of frailty, as they should never be neglected, or let pass without minding, so, unless the *will* mix with them, they should never be exaggerated or very sharply reproved, but with a gentle hand set right, as time and age permit. By this means children will come to see what 'tis in any miscarriage that is chiefly offensive, and so learn to avoid it. This will encourage them to keep their *wills* right; which is the great business, when they find that it preserves them from any great displeasure, and that in all their other failings they meet with the kind concern and help, rather than the anger and passionate reproaches of their tutor and parents. *But that your words may always carry weight and authority with them, if it shall happen, upon any occasion, that you bid him leave off doing any of his childish things, you must be sure to carry your point, and not let him have the mastery.*'

The faults of copying, falsehood, inattention, disobedience, and disorder, have already been dealt with. There are other school offences which may arise. The mode of treating the more serious offences detailed above, viz., obstinacy, inattention, and rudeness, will suggest the manner in which other faults may be dealt with when they arise.

5. School discipline should aim at removing all occasions for faulty conduct.

Whilst it is necessary, so long as faults arise, that they be corrected, the chief aim of school discipline should be to fill up the whole school time with well-directed effort, to instil a desire and love for work, and to create a sympathy with all that is right and good so that the tendency to faulty conduct shall be reduced to a minimum. It requires very little tact to govern a community whilst 'in a state of siege,' and, similarly, the school stimulated to effort mainly by the correction of faults, though the effort awakened be considerable, is nevertheless under very unskilful treatment. The fewer the offences and the punishments the better the discipline, granted that at the same time there is a good amount of intellectual activity aroused and moral control developed. 'If,' says one, 'the sentiments of fear are habitual in the scholars' minds, it is not expected that a kindly and cheerful subordination should be depicted in their countenance, but rather a sullen apathy. It is painful to contemplate the moral result of circumstances so unfavourable called into operation at so early a period of life and strengthened in their influence by a daily repetition. To exercise an easy moral ascendency in a school is, in fact, *an art* not to be acquired without study, or practised without the exercise of judgment and self-denial.' This quotation from the *Blue Book* of 1845 might very well close here, but the following remarks are so stimulating and encouraging to the teacher who is striving to secure the highest form of control without recourse to the weakening stimulus of fear and of punishments, that they are reproduced under the impression that the opinions expressed are as applicable to-day as when they were written nearly fifty years ago. The Inspector says:—

'Many instances are present to my mind in which these qualities have been strikingly exemplified. I can recall to my recollection men whose patient self-dedication has appeared

to me not unequal to the duty they have undertaken, or unworthy of it. In the relation which has grown up between them and the children entrusted to their charge I have recognised a parental confidence and affection. I have marked the cheerful attention with which the instructions of the master are listened to, and the pleasure with which the expression of his approbation is received; and when his hand has rested on the head of some hopeful scholar, and the familiar household name and cheerful smile exchanged between them have borne testimony to their mutual good-will—this simple action, replacing a whole page of official enquiries, has not escaped my observation or been without my sympathy.'

A Record of Virtues.—In addition to the removal of all occasions for faulty conduct, the following plan of recording virtuous action may be adopted in schools.* The suggested exercises in composition have the effect of directing the pupils' attention to virtuous action in the most practical manner. The plan as stated below should be printed on the cover of each scholar's exercise book.

(1.) Each scholar is requested to enter in a note-book in his or her own words a brief description of *acts* observed in the *home*, the *street*, the *school*, or the *play-ground*, or gathered from *books* or *newspapers*, illustrative of:—

(*a*) Truthfulness.
(*b*) Honesty.
(*c*) Obedience.
(*d*) Courage.
(*e*) Love of Duty.
(*f*) Presence of Mind.
(*g*) Kindness.
(*h*) Forgiveness.
(*i*) Self-denial.
(*j*) Regard for others.
or, (*k*) Politeness.

(2.) Records will be selected and read out on Friday in each week.

(3.) Scholars are requested to show their record once a week to their Parents.

(Signed)

Head Master.

* Mr. Elderkin, of the Model Practising School, Westminster, suggested the idea. He has adopted the plan with the most pleasing results.

SCHOOL ETHICS.

(*AN APPENDIX TO SCHOOL DISCIPLINE.*)

Introductory.—Ethical or moral training has long held a high position in English educational systems. It is universally acknowledged that to train physical and intellectual power, whilst the moral nature is unprovided for, is unwise. Such a course of action is analogous to that of a ship owner who obtains the services of an experienced architect to plan his vessel, who buys the best materials for its structure, and who fits the ship with the best of modern appliances, but who neglects to supply a proper rudder and steering gear. Such a ship would almost inevitably meet with disaster in the first gale. In like manner physical force and intellectual ability become unmanageable and fail to secure the highest ends of existence without the directing force of a well ordered moral character. The subject of 'School Ethics' is briefly set forth in the following extract from the 'Education Code':—

> 'To meet the requirements respecting discipline, the Managers and Teachers will be expected to satisfy the inspector that all reasonable care is taken, in the ordinary management of the school, to bring up the children in habits of punctuality, of good manners and language, of cleanliness and neatness, and also to impress upon the children the importance of cheerful obedience to duty, of consideration and respect for others, and of honour and truthfulness in word and deed.'

The above extract sets out in general terms the aim and scope ot 'School Ethics.' Before entering into fuller details of the subject, it may be well to state the relationship which Ethics bears to other branches of study familiar to the student of school work and discipline.

Ethics and Psychology.—Psychology enquires into the nature and order of mental phenomena. These phenomena it classifies under (1) Feeling, (2) Knowing, (3) Willing. It is possible to trace the connections between these different classss of phenomena. For example, the infant scholar does readily that which is pleasant. A marked feature in the infant school is the accompaniment of pleasure with the various forms of child activity. This pleasurable accompaniment (Feeling) stimulates the little fingers and eyes to activity (Willing), and through the activity of hand and eye, thus stimulated, the child's knowledge is increased. So far the consideration is a psychological one, and, with an infant for example, it is not possible to carry enquiry much further. A second example, however, will enable us to do so. A boy, on a country ramble, spies a beautiful dragon fly

(Intellect or Knowing). Impelled by the sight of the creature's dazzling beauty, and by the pleasure such an object will yield when it occupies a central position in his 'collection' (Feeling), he rushes, cap in hand, after the object (Willing). So far, again, we have psychological conditions. There is, up to this point, no enquiry as to whether the action is right or wrong. The boy, however, pauses in the chase; he is considering for a moment the creature's life and happiness. Perhaps a feeling of remorse for having once before killed a similar object is remembered. The boy decides that it is not right thus to deprive the creature of the life it seems so much to enjoy. 'I owe,' the boy mentally says, 'to this beautiful creature, that it should be permitted to enjoy its summer day.' The boy, having admired, suppresses his impulse and passes on. The idea of what is good—good for him and good for others—determines action in this case, and not mere knowledge and feeling. The complete analysis of the boy's action brings clearly into view the various psychological states. These have been already mentioned. In addition, however, to the purely psychological considerations is another which is termed ethical. What is this? How does this ethical condition differ from those termed psychological?

In reply, it may be said that the psychological conditions lead up to, anticipate as it were, the action; whilst the ethical condition takes account of the end, the result of the act. During the repression of impulse, the boy is picturing the effect of his action, if accomplished. The dividing line between the psychological and ethical state is at that point where impulse is repressed and where reflection begins. It may be further said that so long as the boy is only conscious of his own feeling, the process is mainly psychological, but, when the feelings of another (even though, as in this case, the other is an inferior creature) are considered, and when, as a result of this consideration, the feelings of another creature are respected, the question assumes a moral or ethical tone. A still deeper tone to action is assumed when the youth reflects that this beautiful object is, like himself, one of the Almighty's creatures, inhabiting for a season the same world as himself, and fulfilling its mission. An impulsive act, on the boy's part, deprives it of all opportunity to do what a wise Creator wills. Reflection in this direction rises above the ethical into the religious region.

Ethics and Logic.—The relationship between Ethics and Logic is not so close as that between Ethics and Psychology. An analogy may be drawn between them and may serve a useful purpose. Logic has to do with thinking, Ethics has to do with acting (Conduct). Logic aims at consistency of thought,—given certain premisses the conclusion follows, and, if the reasoning be correct or valid, only this conclusion can possibly follow. Similarly, Ethics aims at consistency, but not of thought, as in Logic. The rules, which the study of Ethics formulates, seek to bring conduct into harmony with what is right and good. Both Logic and Ethics provide rules—the former to guide thought, the latter to guide action.*

* For this reason both are termed 'Normative Sciences.'

There is, of course, a deeper connection than that mentioned above, but it has more to do with adult than with school life. As thought precedes and determines much that the adult does, it becomes evident that a person trained to think logically will, on this account, be better able to act with judgment and reflection—that is with due regard to the consequences of his action, *i.e.*, morally.

Ethics and Education.—There have been many attempts to define the term 'education.' Without trying to formulate a strictly logical definition of the word, it may be well to state generally what is understood when the term is used. A little child is in possession of certain powers. These powers or faculties—physical, intellectual, and moral—develop by use. The teacher should so exercise the child's powers of body, mind and spirit, that these powers, fully and harmoniously developed, become, in time, the possession of the scholar, to be used by him to his own satisfaction and for the good of others. Now just as the Laws of Hygiene and of Physiology are of service in the effort to develop a healthy body, and as the principles of psychology afford guidance for the proper exercise of the mental powers, so the rules of Ethics yield assistance in the wise development of the Moral Nature. The teacher will carefully note that his work is mainly to take the powers which already exist in the child, and, by processes of stimulus and restraint (stimulating, this is, what tends for healthy growth, and restraining all that tends for evil), aid the scholar to attain to the highest nobility of his nature. Now character is that part of the child's nature which is noblest. Ethics is particularly concerned with the building up of character. Hence, so far as ethical rules are available for guidance in the development of character, it becomes evident that these rules ought to have a foremost position in any educational system.

Ethics and Politics.—Politics have for their object the well-being of the community. To this end institutions are established, and political ethics are therefore specially interested in the inquiry into the character of such institutions—whether, that is, their existence is for the good of the community or otherwise, or whether they need modification in order to make them more effective agents for the general good. Between the individual and the state there is action and re-action. An individual finds the opportunity for developing the higher moral qualities in his connection with others, *i.e.*, as a member of the state, especially if that state be one in which considerable liberty of action is granted to the individual. On the other hand the state progresses morally only in proportion to the moral development of the individuals composing it.

Applied to school life, a scholar is a member of a community. The common life of the school affords an opportunity for the scholar to develop the higher moral qualities. The school again, its general tone and charater, re-act upon the character of the scholar.

Region of Ethical Enquiry—Conduct.

A scholar's actions are matters of ethical enquiry, that is, they may be judged, morally, to be right or wrong, good or bad. All activity, however, does not come within the range of ethical enquiry. Dr. Adler* very aptly distinguishes between actions which are moral and others which are non-moral. He says we do right to eat because by eating we are able to fulfil the necessary duties of life, but whether we eat this or that is not of moral account. The activity of little children, equally with that of slaves, so long as they cannot do other than obey, must not be judged morally. Such activity is non-moral. This contention must not, however, be pushed too far. A child very properly 'does what it is told.' We commend its obedience. So long as its want of knowledge and its inexperience are such that it cannot be trusted to act alone, the child ought to obey. The moral quality of the child's action is in its obedience, and not in the separate acts themselves. The parent or teacher is the moral agent. Full moral quality accompanies the scholar's action, when that action is self-willed. A time comes in the history of every scholar when self-will should manifest itself, and all sound and healthy moral training provides a carefully arranged and progressive series of self-willed activities. Training which does not provide for progressive exercises in self-activity is morally defective. We conclude, therefore, that activity which is voluntarily and designedly self-willed, this is, activity which is properly termed 'conduct,' is the form of activity upon which a moral judgment may be given.

A Scholar's motives are also matters of ethical enquiry. Motives relate to the state of mind which induces action. Conduct in the ordinary sense applies to the outer act, but in order to fully gauge the goodness or otherwise of an action, a deeper enquiry is necessary. A complete analysis of all that induces action would lead us into the vexed questions relating to desires, intentions, and motives. A scholar may be the subject of many desires—he may desire a rest during lessons, at the same time he desires to secure the approval of his teacher and also to gain knowledge. There is for the moment a conflict between these desires. The first desire is suppressed, he continues his task. The motive, in this case, agrees only with some of his desires. It will be well to restrict the use of the term motive to that state of mind which induces action. Whilst there may be conflict of desire, there is but one motive, viz., that which is recognised as the moving force in every action. Hence there cannot be a conflict of motive.

The term good (or bad) is not properly applied to a scholar's 'wants' or his 'desires,' but to his 'motives.' As a rule, it is much easier to apply the term 'good' to the act which forms the outer expression of the will than to the motive which prompts action. The latter is difficult to determine, and, because of this, an inexperienced teacher, incapable of

* Moral Training of Children.

tracing action back to motive, is sometimes deceived, and hence unsound moral judgments are passed. If the teacher take account merely of the outer action of his pupils, he must sometimes be in danger of judging unfairly. It is much safer to compare a scholar's present action with that of the same scholar in the past, than to compare scholar with scholar in the mass. Another difficulty in determining motive arises from the influence which children, in the same class, exercise over one another. It will frequently be found that a pupil does what the others do from a mere imitative tendency, or from fellow sympathy. It is well, at times, to require exercises which demand a certain amount of individuality. A scholar entirely unaccustomed to act on his own initiative and responsibility must not be expected to develop a sufficiently self-reliant and manly character.

Distinction between 'right' and 'good' Conduct.—Conduct is described as either (1) right or wrong, or (2) good or bad. The terms 'right' and 'good' are not quite synonymous. Right is applied to conduct which is according to rule or law. It is the rule of the school that pupils be in time, that they be diligent during the school hours, &c. Obedience to these and similar rules results in action which is properly termed 'right.' The goodness or otherwise of conduct depends upon the quality of the motive. It has been shown that motive is the idea of some aim, object or end, which, when pictured to the agent, induces him to activity. He acts in order that the end may be gained. In this case, it is not so much the teacher's presence, nor the stimulus of his commands, nor is it the mere obedience to school rule which moves to action. These are external forces, whilst the motive is a force acting from within, and hence directly personal. A scholar is industrious during lessons. Why? In reply, his industry may not be in response to rule or command so much as from an inward regard for knowledge or for the power and position which the possession of knowledge secures. The term 'good' is applied to the self-directed (motived) activity by which the knowledge is gained.

> It becomes at onee evident that the action termed 'good' is the one containing the most of voluntary effort; and this voluntary effort is that which is most properly dignified as moral. At the same time, it is well known that only during the later years of school life can frequent appeals be made to the higher forms of inducement. Much of early school effort must necessarily be subject to the personal presence and direct command of the teacher. The more direct the command and presence of the teacher, however, the less valuable is the scholar's action from a moral point of view. Moral training, to be sound, must be progressive. Little learners should be required *to do what is right*. As they pass through the various stages of school life, there should be manifested, more and more, the power *to be good*.

BRIEF REVIEW OF ETHICAL THEORIES IN THE LIGHT OF SCHOOL EXPERIENCES.

Introductory.—We have already reviewed, in brief outline, the scope of ethical enquiry, and seen that it is mainly concerned with conduct, and concerned in determining whether conduct is right or wrong, good or bad. In order to obtain guidance from ethics in the difficult task of 'impressing upon the children the importance of cheerful obedience to duty,' and in the not less difficult task of bringing up children so that they acquire worthy habits and develop a good character, it may be well, at this stage, to briefly examine some of the chief ethical theories in the light of school experiences.

(1.)—*Does conduct result in the happiness of the agent?* The test of conduct suggested by this question need only be mentioned to be dismissed. It is a theory of selfishness. Could a place be imagined where everyone is utterly selfish, happiness itself could not exist there. Still, it is not wrong to be happy. In school life (especially that in Infant Schools) the accompaniment of pleasure with school work is most helpful. The error, here, is in making happiness of self the highest and only good. Teaching experience proves abundantly that self-gratification is antagonistic to moral growth. Indolence and indifference—the most common evidences of this self-love—are enemies against which the teacher wages a constant warfare.

(2.)—*Does conduct tend to increase the happiness of others as well as myself?* This, with some, is the moral test to which conduct is submitted. Self-sacrifice, the seeking of the good of others, and benevolence are the prominent forms of action which, according to this theory, right conduct assumes. Referring again to school experiences, there comes a period when self-sacrifice and the seeking of the good of others find a place in the life of the scholar. As teachers, we do well to allow our scholars, at times, to help each other. Whenever a scholar manifests a desire to assist his less clever neighbour, let the scholar be commended rather than reproved. Such mutual help must be regulated, however, otherwise the less clever pupils might be insufficiently stimulated to effort. The discipline of some schools tends to keep children apart. This is especially seen in schools where marks, place-taking, and prizes are too frequent. Whilst emulation, in its place, is a healthy stimulus, it should not be so universally applied that scholars, in the same class, are perpetually struggling for mastery. A wise admixture of emulation and mutual help should be made, otherwise a warped moral growth may result. Speaking generally, the conduct which is stimulated by the desire to be mutually helpful may be looked upon with approval; there are, however, higher moral tests of conduct than that of mutual advantage, and these higher tests we now proceed to examine.

(3.)—*The third form of ethical theory* differs materially from those already noticed. The latter test the value of conduct by its results. Does this line of action promote my happiness; does it further the common good? These are the questions which, when answered, are held by some to yield the test of conduct. This third ethical theory does not regard results. These may, or may not, tend to the happiness either of the individual or the community. The question is not one of results or of ends of action. It is rather a question respecting the person acting. The person acting says, 'Does this line of conduct satisfy my conscience? Is that inward voice of mine at ease whilst I act in this way, or is there a feeling of unrest and remorse accompanying and following each act? Does my moral sense, or my intuitive power of passing judgment upon action, approve or disapprove of this line of conduct? Is the action right or wrong in itself, irrespective of either the happiness of myself or of others, or of my own feelings?' These are the questions, which, when answered, yield the third test of conduct.

Revision.—In school experience it will not be difficult to find examples of each grade of test enumerated above. A boy speaks the truth; you ask, 'Why do you speak truthfully?' One boy will say, 'I know I shall lose the trust of my parents, my teacher, and my school-fellows if I am not truthful. This trust I must have if I am to make my way. Hence I speak the truth'—a purely personal aim. A second says, 'I wish to please my parents, and to uphold the credit of my class; the school and home would be places of misery without mutual trust; for the welfare of others as well as my own I speak the truth'—the aim in this case is not purely personal; it regards the good of others, and is therefore an advance upon that of the first boy. A third says, 'I speak the truth because it is right. I do not think of the result of my action at all. I should have lost my self-respect if I had spoken otherwise. A lie would fill me with shame and remorse.' This third test of conduct is the one every teacher may hope to see his pupils apply. No one knows, however, better than he, how frequently appeals to the lower criteria of conduct are his only recourse. His aim, however, should be to secure appeals to the higher tests of conduct. He will not lead his scholars to do this, if, in correcting their faults, he is content to bring them constantly to the lower tribunal.

The Christian Standard of Morality.—In many continental schools and in the common schools of the United States, moral instruction is entirely based on 'the principles of ethics.' Teachers of our schools are not debarred from appealing to religious sanctions. The Bible and its message may be appealed to for guidance in moral training. The Christian teacher has very little to learn from modern ethical science. The highest and noblest principles of ethics seek expression in Biblical utterances. 'Whatsoever ye would that men should do to you,' &c. 'Love thy neighbour as thy self.' 'Fear God and keep His commandments.' 'Whatsoever things are true, whatsoever things are honest, whatsoever things are just, whatsoever things are pure, whatsoever

things are lovely, whatsoever things are of good report ; . . . . . think on these things.' The teaching which is based upon utterances like these (especially when given by one whose whole spirit and life expound them) will be most effective. This is not the place to discuss the value of religious teaching. The subject is introduced, thus briefly, in order to show that Christian morality embraces all that is good in ethical science. It does not neglect the happiness of the individual either here or hereafter ; it enjoins upon its followers that they seek the good and well-being of their fellows ; and it enthrones conscience, as the voice of God, upon a seat of judgment, before which no one is allowed to escape.

(4.)—*There is a fourth form of ethical theory* that may be noticed very briefly. The Christian teacher holds before himself and his class the life and teaching of his divine Master. Here is his ideal. Towards this he is constantly aiming, and for this he is content, if need be, to suffer. The consistent Christian is one who adjusts his conduct to the Christian standard. In Ethics, we have already seen that the aim is consistency—consistency, that is, with self ; not, however, with the ordinary every-day self, but with that higher and nobler self that sometimes, in his best moments, the agent seems to be on the point of realising. This better, nobler self becomes the ethical ideal. Conduct which does not tend towards the realisation of this ideal is made matter for moral judgment. Apply this to school work and life. The school-boy is always aiming at something which, as yet, he is not. He longs for the time when he shall reach the highest class, when he shall leave school, when he shall become a man. He is buoyed along by the hope of becoming something higher and nobler than he is. Then, again, the school is constantly presenting ideals of conduct. The religious instruction abounds with these; they are embodied in the Commandments the scholar is taught to remember and obey; there is, furthermore, the pattern of life exhibited by teachers and elder scholars ; and there are examples of noble life and effort presented through the teaching of history, both sacred and secular. Finally, there is the school ideal, its character as a whole, represented by what is sometimes termed ' school tone,' public opinion of schools, etc.

To repeat what has just been said with additions from school experience. The discipline of home and school—especially that part concerned in the distribution of approbation and censure—rewards and punishments, results in the scholar mentally setting up standards of conduct. To these standards he naturally submits for judgment both his own actions and those of others. The school example and discipline encourage the formation, in the scholar's mind, of ideals of conduct. An ideal self, and an ideal school community thus tend, naturally, to become developed in the minds of the scholars ; and these tend to influence the actions of the children, both now and hereafter. Here comes into view a most important effect of school life. Some one has said, ' we are what we hope to be.' The ideal (that is, the self each scholar sets before himself to become), what shall it be ? Shall it be a lofty or an ignoble one ? —

Schools differ very much in the ideal they place before their scholars. The school in which discipline is lax, in which the scholars become adepts in deceit, and in which low cunning is developed; the school where authority is mainly enforced by the rod, where results are obtained at any cost, and where scholars are bribed to effort; in such schools, the ideals are low and the results of training must be morally disastrous. In strong contrast with the above, are the schools in which the ideals are high. There is the pattern set by the teacher, whose lofty moral character is constantly exhibited in the presence of his highly imitative community; there is the trustful dispositions (like that of Dr. Arnold, of whom his scholars are reported to have said, 'it is a shame to tell him a lie, he always believes one'); and there is the firm yet considerate hand controlling everything for the scholar's welfare—consideration being especially exhibited towards moral infirmity, exhibiting highest tact in lessening the obvious weaknesses of the scholars for fear these pupils lose heart, and thus fail to realise the best there is in them to become. When such influences as these are at work the school ideal tends to become a high one.

Review and Summary.—Sufficient has been already stated to show that various systems of Ethics* have successfully been developed. Each system, in its own way, has attempted to establish a standard to which conduct might be brought in order that a moral judgment could be passed upon it. Further, it has also been shown that each system possesses elements of truth that may be accepted, and, lastly, it has been stated that the Christian Teacher, who bases his instruction on the Divine Will as revealed in the Bible, need neither hope to have the light within him increased, nor fear to have his faith dimmed by a simple course of ethical enquiry. If asked to state, briefly, the principle which Ethics provides (so far as the subject has been considered) for the regulation of conduct, the reader might reply somewhat as follows:—'Seek to conduct yourself so that your own powers (physical, mental, and moral) are provided with the most suitable conditions for exercise and development; at the same time, seeing that you are able to secure the fullest development of each of these powers only by becoming a social being, *i.e.*, in a community; so conduct yourself that others may thereby be aided in the full development of their capabilities.'

If this general statement were reiterated day by day, it would not be of great service in the every-day attempt to direct conduct aright. We need the principle to be stated in much greater detail, even for adult guidance, and when we come to deal with children, there is especial need to simplify and expand the statement. Hence the necessity for the teacher to consider such practical matters as duty, virtue, moral rules, commandments, obligations, punishments, etc.

DUTIES.

Introductory.—To say that 'duty is what is due, or what we owe to others,' does not make the meaning of the term very clear. We get nearer the true meaning of duty (as that term is applied to the moral

*Technical terms have been omitted from the above brief account of Ethical Theories. Egoistic Hedonism (the happiness of self) has been applied to the first mentioned theory; Universal Hedonism or Utilitarianism to the second; Intuitionalism to the third; and the Theory of Perfection to the fourth.

discipline of school life) if we compare 'right actions' with 'dutiful actions.' A boy comes to school by train, by tram, or on his cycle; one day he walks, and another he runs to school. Each and all of these modes of acting may be termed 'right.' His *duty* is to be in school at nine o'clock. The boy is under obligation to his parents, to himself, to his teacher, and to his school-fellows to be present at the appointed time. Dutiful action is that which is done after account has been taken of the rights of others. Ethical enquiry, in school life, relates to the duties which a scholar owes to himself, his parents, his teacher, and his fellow-pupils. Religious duties are those which the scholar owes his Maker. Omitting all reference to religious duties, and confining attention to those which may be termed ethical, we find duties which have special reference to childhood, others to youth, and others, again, to manhood. Whilst some of the duties do not belong to school life, it will be necessary to keep in view the fact that the discharge of the duties at school should gradually prepare for the discharge of the more complex duties of business and civic life. Bearing this progression of duties and their inter-relationship in mind, we may proceed to review a selection of the more important duties of childhood both in the home and school.*

Duties of Home prior to School Duties.—The paramount duty of the child in the home is to honour, reverence, and obey its parents. It has already been stated, that, so long as the child is obedient to parental command, and, that, so long as it does this or that in imitation of the pattern of others, there is little of moral worth in its action. There is, however, the gradual formation of habits to act in certain ways, and hence the merely imitative or obedient forms of home activity tend to beget a bias towards certain forms of conduct. The value of this bias for good moral effect depends upon the moral character of the life in the home. The presentation of fairy tales, fables, and stories, together with the social games of the Kindergarten, should assist the moral training of the home.

> It will not be necessary to enter very fully into details of conduct in the home. The child ought, during this period, to be led to imitate actions of kindness, to tell the truth, and to become orderly in its habits, and clean in its person and attire. It should be trained to curb its temper, and especially should it be corrected for any outbursts of anger shown, either by action or speech, towards its little companions or domestic pets. For purposes of school discipline, it is very necessary that the teacher take into account the home discipline of his scholars. To the child who has lived his first five or six years in a

* Virtues are sometimes confounded with duties. The common notion of virtue is, that it extends beyond dutiful action. A scholar is attentive during lessons; this is duty, not virtue. Benevolence is a virtue, but a person who relieves distress by paying his poor-rate is not virtuous on this account. He does his duty. The habitual choice of right is another meaning given to the term virtue. Now the habitual choice of right denotes a 'good character.' Virtue is mainly concerned with what a person is; duty with what he *does*. †;

† *Mackenzie—'Manual of Ethics.'*

home with few restraints (and those, perhaps, of the lower order), the discipline of school will most probably prove, at first, very irksome. Special treatment may be required before the rebel nature is brought into harmony with the order and rule of the school.

Duties pertaining to the School.—It has already been stated that the duties of one period should prepare for those of the next. At the same time, the duties performed during a preceding stage should be kept in view when imposing the new duties of the succeeding stage. It should also be noted that progress demands that the duties in each succeeding stage should be less and less the result of mere outward imitative effort, and more and more the result of inward reflection. Thus the duties of each school period may be made to assume a higher moral meaning. In order to illustrate what is meant by this advance in ethical training, it may be well to select a duty such as 'truthfulness,' and work out a fairly complete view of the course to follow.

(1.)—*Truthfulness,* during the school age, should be practised, not as a result of precept and example, and not as a result of a certain amount of practice by which it has become habitual, so much as from its necessity for the well-being of the community of which the scholar is a member. It should be shown that it is mainly by means of this trustful regard that the school can exist as a mutually helpful community. A school in which mutual trust and regard are wanting must fail even to achieve intellectual progress. Still more disastrously must such a school fail to secure moral progress. Thus, from the standpoint of 'common interest,' a love of truth and trustfulness should be engendered. At this stage, therefore, there is a threefold force at work inducing the scholar to truthfulness, viz.—(1), the imitation of truthful examples; (2), the habit of truthfulness resulting from frequent practice, and (3), the necessity of mutual trust in order that school life and work may be successfully promoted. Along with this threefold advance and re-inforced by them is a fourth force which makes for truthfulness. How soon the little learner shows by outward expression that he has lost a certain amount of self-respect by speaking or acting deceitfully it may be difficult to determine. It is however undoubtedly true that the observant teacher is able, very early in the life of his scholar, to detect the shame and remorse accompanying this loss of self-respect. Without referring here to the great assistance which the religious teacher finds from an appeal to religious sanctions—that lying is an offence against God, and will be punished by His severest displeasure, the moral teacher can summon the fourfold forces enumerated above, viz., an appeal to conscience, to the common interests of the school, to the scholar's habit of life, and to the pattern of parents and teachers.

The following question may be asked at this stage, viz., Which of the various moral forces above enumerated should be brought to bear upon a particular ease? In reply, it may be stated that with a scholar trained to have a high regard for parents and teachers, the reference to their example and to their grief at finding the scholar fail would be

successful; with another scholar, whose intellectual power is well developed, an appeal to the general well-being of himself and the school community might have good effect; with a third, a reference to what is expected of him on account of his past conduct, *i.e.*, from his recognised character, would prevail; whilst to all, alike, an appeal should be made to their own sense of what they feel to be right. What must be done if all these courses of action fail is a question that would carry the enquiry into the region of school punishments. That subject must be left for the present.

(2.)—*Diligence in the pursuit of Knowledge.*—Next to the trust and fellow sympathy which habitual truthfulness engenders in a school we may place the duty of a diligent pursuit of knowledge. The successive stages observed whilst dealing with the duty of truthfulness may be followed in the enforcement of this duty. The stages are: (1) *The force of example.* The class-teacher knows how to make full use of this. His own pattern of diligence will be infectious. There is, furthermore, the example of the diligent class. This 'sympathy of numbers' is a potent force. (2) *The commands* of the teacher and his approval of diligent conduct together with his correction of indifferent behaviour tend to set up standards of diligence to which the scholars, in time, mentally appeal when judging their own actions. (3) The practice of diligence, thus commenced, tends to the formation of *a diligent habit.* With every effort (so long as the teacher wisely abstain from continuing the effort until wearinesss ensues) the habit is strengthened and the contrary tendency to fritter away the time in indifference becomes weaker.* (4) *Diligence for the sake of others* appears in later school life. It has been shown that the diligent pursuit of knowledge on the part of each scholar affects the diligence of the entire class. On the other hand, an indifferent scholar becomes a centre of evil influence. The credit of the class and that of the school may be urged on behalf of the diligent pursuit of knowledge. The value of this stimulus to effort depends largely upon the intellectual force of the scholars. If capable of a simple form of reasoning, they will argue thus:—'The advance of the class and of the school depends upon that of each scholar. Hence, as one member of the class and school, it is my duty to be diligent in my studies.' (5) *Lastly, diligence from a feeling of self-respect* should be developed. If the scholars be asked to point out those who appear to be wanting in self-respect, they will readily select the lazy, the indolent, and those who are willing to allow others to work so long as they are provided for. They will then see that an important means of preserving self-respect is to be industrious. Every scholar should be encouraged to look forward to the time when he will cease to be dependent. To be self-reliant and independent are necessary conditions of freedom and self-respect. But independence follows diligence. Hence, first diligence, then independence and self-respect.

*See 'Habits,' p. 34.

(3.)—***The Duty of Considerateness.***—It has been frequently stated that school-boys of to-day are lacking in the duty of considerate conduct. If this be so, it may be largely accounted for in three ways, viz. (*a*) the early age at which many boys leave school and earn sufficient for a livelihood, (*b*) the lack of all civic and national restraints in the forms of compulsory attendance at continuation schools, military service, etc., and (*c*) the too exclusively intellectual training which has for a quarter of a century characterised the teaching in schools. With respect to the latter cause, it should be remembered that the seeds sown in one generation bear fruit in the next. The ill effects of an unequally balanced school training may thus make themselves, for a few years, increasingly evident. Whilst, thus, it may be urged that a school training which is too exclusively intellectual leaves the higher nature (that is the moral) enfeebled, we must be careful not to rush into the opposite extreme and endeavour to develop the moral nature at the expense of the intellectual. These two aspects of human development act and re-act upon one another.

> Let us take, for purposes of illustration, the development of considerateness, that is, of kindliness in word and act. The awakening of this duty depends primarily upon the existence of the non-personal feeling of 'sympathy.' But this feeling is vastly promoted by the imaginative effort of being able 'to put one-self in the place of another.' A complete analysis of a kindly (say charitable) deed exhibits a conjoint mental and moral form of activity. There is 'Will' in the act itself—something is done, and done designedly; there is furthermore the exercise of 'Imagination' in the effort to realise the condition of the distressed one; and there is also the 'Feeling' of sympathy accompanying the imaginative effort. All these forms of activity—will, intellect, and feeling, combine, and in their conjoint presentation yield a psychological account of the act. But this account is not complete. We must enquire into the motive which prompted the charitable act. The act may have been done in order to get rid of the presence of distress, or on the ground of some such moral maxim as the following, viz., that to relieve distress adds to the general happiness; or, the benevolent act may have been recognised as right—the conscience of the charitable one would have filled him with remorse had he not so acted, or, lastly, to do a kindly act is to be true to the agent's ideal of life. In this way we may reach the ethical bases of the kindly act. At the same time, we see how intimately such acts are connected with psychological conditions. The above analysis shows clearly that the aim of teaching should be to secure a well-balanced educational result—the intellect and the moral nature being equally cultivated.

We may now return to the special conditions by which a kindly disposition may be fostered.

(*a*)—***The kindly treatment of the child*** by parents, teachers and fellow pupils. These examples of kindly action are of high value during the early periods of training. To examples in the home and school there may be added the recital of instances of generous action. Children might be encouraged to note any such deeds which come under their own observation

(not necessarily in the school) during the week. A record should be made in the form of a composition exercise. In this way children may be led to take an interest in such deeds, and, once their active interest is aroused, their sympathy on the side of such action will be developed.*

(*b*)—*The practice of kindly action by the scholars.*—Such action should be noticed with approval, and contrary action with disapproval. Competitions in school work, in moderation, form, no doubt, a valuable stimulus to effort. Similar striving will furthermore be a necessary condition of success after school life. When practised, however, in excess—when, that is, this form of stimulus enters into every lesson—it may tend to weaken considerate conduct. To gain intellectural alertness at the expense of kindly disposition must surely be an undesirable result. The practice of kindly deeds develops the most favourable conditions for their repetition; repeated action tends to crystallise into habit; and, in this way, to form the character. Thus action and character affect one another. Between them there is action and re-action. Every deed repeated tends to build up character, whilst character, at the same time, determines to a large extent what, under any given set of circumstances, shall be done.

(*c*)—*Consideration and common interests.* Scholars differ very much in the esteem in which they are held by their fellow pupils. The boy who manifests little or no consideration for his fellow scholars is soon left to himself, whilst another who is ready to help with kindly deeds and words becomes surrounded with friends. The happiness of the school, like that of the family, depends largely upon mutual consideration. The play-ground affords the best opportunity for the natural and spontaneous exhibition of kindly deeds. All such action should be commended, and the opposite form of conduct reproved, specially should the over-bearing and too masterful disposition be checked. The play-ground should be in reality, what Mr. Stow termed it, viz., the 'uncovered school.' To this end it should not be left without oversight. The teachers, especially the younger members of the teaching staff, may join in the games with great advantage to themselves and scholars. They may thus show how to bear either victory or defeat, and, at the same time, may teach the scholars how to behave towards each other when similarly placed. The outward forms (conventional rules) of good behaviour have their value. The power of association is such that the outward act may become a means of strengthening the inward feeling. The polite manner should not be neglected because sometimes it may have been assumed in order to conceal the true character.

(*d*)—*Considerate conduct and the development of character towards a higher ideal.* It has already been stated that a well balanced character is most naturally developed by the aid of society. A solitary existence naturally tends to the development of selfishness.

* See 'Record of virtue,' page 61.

Society acts upon the child, and the child influences society. Moralists and philanthropists find that if they wish to influence to the utmost those who live in the midst of crowded alleys, they must take up an abode in their midst. Hence such settlements as those in the East-end of London. Children are more readily affected by their environment than are adults. The school affords an opportunity of presenting an ideal of good manners. Teachers, visitors, inspectors, and managers may bring into view of the scholars some of the brightness and kindliness with which their own lives are blest every time they enter the school. The introduction of musical and other forms of drill, visits to museums and art galleries, excursions into the country, &c., provide additional opportunities for cultivating considerate conduct and kindly dispositions.

Other Duties.—It is not necessary to discuss the entire range of school duties. They all yield to nearly the same treatment. A good exercise may be made if the reader will take a duty like 'cleanliness,' and show how it may be best impressed on the children. Another exercise, equally valuable, would be to show how the duty of 'courage' might be enforced, and contrast courage with 'foolhardiness' and 'fortitude.'

Habits and Character.—These have been fully discussed in preceding pages (33-35, 'School Discipline').

Common School Faults.—These are enumerated and their treatment detailed on pp. 55-61 under 'School Discipline.'

School Punishments.—The subject of Punishments is fully considered under 'School Discipline,' pp. 17—28. Amongst ethical writers, the subject has been exhaustively treated by Bentham, Locke, and Spencer. The views of Locke and Spencer have already been noted, pp. 18 and 20. In addition to what has been there stated, the following principles for the administration of punishment, formulated by Bentham, should be noted: —

(1.)—The punishment should bear some proportion to the offence.
For example, the censure for a first offence of lateness should not be the same as for habitual late coming

(2.)—The punishment should outweigh any advantage arising out of the offence.
A boy who has played the truant in order to enjoy a morning's slide on the ice will risk a mild scolding for the pleasure accompanying the repetition of the offence.

(3.)—Should never be greater than what is needed to correct the offence.
If a look will correct, do not use words; if a word be sufficient, do not employ tasks; if a task suffice, do not resort to severer punishments.

(4.)—The punishment should be capable of adjustment to the condition of the offender.

For example, to a nervous, timid, weakly child, and to a hardened offender ; to boys and to girls, etc. The private administration of punishment admits best of adjustment to the nature of the offence, as well as to the disposition of the offender.

Inter-action between moral, physical, and intellectual activity.—The three forms of activity here enumerated are commonly considered separately. They are not, however, distinct from each other in actual life. Physical training has its moral effects. A boy who seems almost incapable of responding with anything like enthusiasm to an intellectual stimulus during, say, a lesson on English grammar, will sometimes exhibit remarkable diligence and earnestness in the manual training class. Here is the opportunity for developing these and other valuable moral qualities. When these qualities are aroused (so that the benefits of earnest effort are realised in the workshop), they may be transferred to the study of subjects in the ordinary curriculum of the school. Again, there are certain moral qualities which are dependent upon intellectual advance. When dealing with the development of the duty of 'considerateness,' it was shown to arise from an ability to imagine the condition of another. The ability to choose between two contending lines of conduct—between the truthful and the evasive reply, between the honest and dishonest act, and between a kind and unkindly deed, calls into play an effort of judgment and the power of reflection. Here the higher moral effect is dependent upon the development of the intellectual powers of imagination and judgment. Thus it may be shown, that, whilst, for purposes of enquiry, it is wise to consider each form of activity as distinct from the others, in reality they do not exist as separate and distinct activities.

Moral Training in connection with ordinary school lessons.—From what has been advanced in the above paragraph, it becomes evident that no school lesson is without its moral accompaniment. By reading, and the study of grammar, the scholar learns to use language with precision of meaning. Arithmetic, perhaps more than any other school subject, demands truthful effort. Evasion and slip-shod treatment are here directly associated with error. Success follows rigid adherence to truth. The study of science requires exact observation and careful statement. When endeavouring to account for observed phenomena, the learner is called upon to choose between conflicting theories, and that one which most completely explains the phenomena is provisionally accepted—an intellectual attitude of mind which will frequently be demanded in the scholar's dealings with his fellows. History is of especial value for moral training. The lives of great men are here reviewed, their actions are criticised, and moral standards are erected. Throughout the entire range of school work the moral qualities of diligence, neatness, and obedience to rule, together with the truthful, kindly treatment of their school-fellows, may be daily promoted.

SCHOOL HYGIENE.

THE conditions necessary for healthy work in a school building may be arranged under the following divisions—(1) ventilation and warming, (2) drainage, (3) distribution of school work, including necessary periods for rest, for change of work, and for physical exercises and recreation, (4) the treatment of school accidents and diseases.

SCHOOL VENTILATION AND WARMING.

1. Introduction.

Very little difficulty need be experienced during the warm and sunny days of summer in maintaining the purity of the air in a school-room. With sash windows which can be opened either by lifting up the lower half or by lowering the upper one, and with doors, the opening of which does not cause an unpleasant and dangerous draught, ventilation is both simple and effective. It is during the winter months and the chilly days of early spring that difficulty exists in the matter of warming the school and at the same time of keeping the air pure.

2. Necessity for frequently changing the air.

The air in its normal condition is composed of 79 vols. of nitrogen and nearly 21 vols. of oxygen in every 100 vols., with slight traces of carbonic acid gas, aqueous vapour, and ammonia. After breathing, the air has undergone a remarkable change, having parted with nearly 5 per cent. of its oxygen and gained, in lieu of the oxygen, almost as much CO_2, together with much moisture and some organic impurities. The CO_2 is the most important impurity to consider, for when the proportion, which in pure air is ·04 per cent., is increased to ·06 per cent. the air becomes rather close, and when the

CO_2 is further increased the air loses much of its vitalizing power; bright and pleasant work becomes then impossible, and head-ache with a sense of weariness soon ensues. In order to understand fully the reason of these changes, the following account of the process of respiration should be carefully studied:—

Process of Respiration.—The chest cavity or thorax is a closed compartment in the upper part of the trunk of the body. This cavity is capable of enlargement and contraction by means of the movement of the ribs in the front and sides of the air chamber, together with that of the diaphragm at its base. When the chest is enlarged, air enters through the mouth and nostrils, passes through the larger air passages termed the *wind pipe* and *bronchial tubes*, and finally enters the little *air cells* which make up a large portion of the lungs.

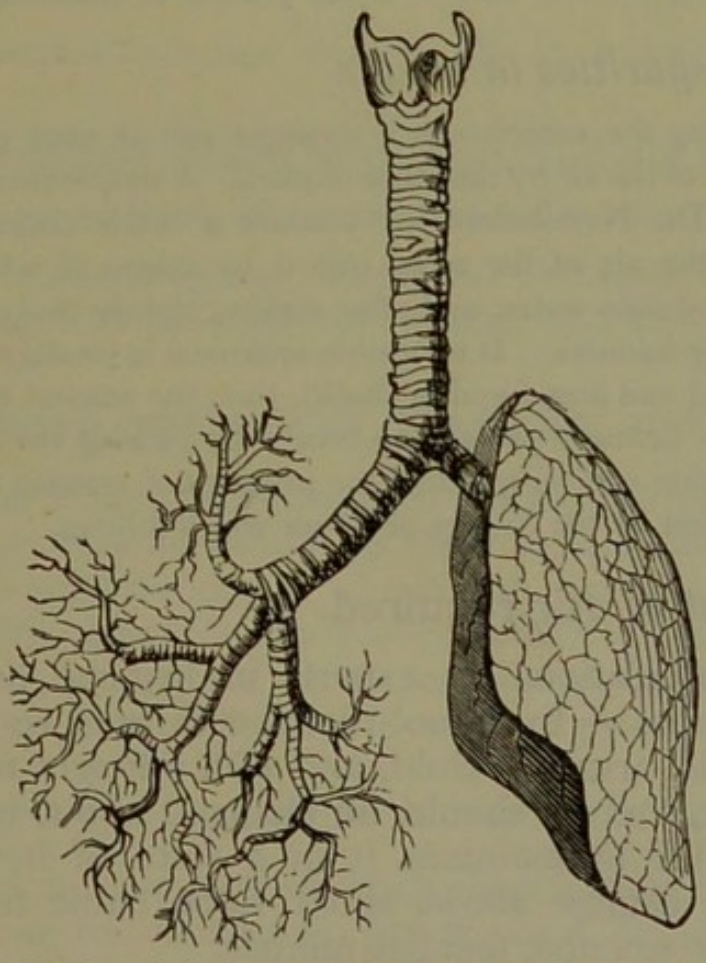


Diagram showing wind-pipe and bronchial tubes dividing into smaller passages and air-cells.

With each respiration, the pure air enters and mixes with the air already in the air cells, and with each expiration some of this mixture is expelled. The air in the little cells is in close contact with the impure blood in the network of pulmonary capillaries surrounding them,

and the change in the air inspired takes place in the following way :— Through the thin membrane of the air cells oxygen is supplied from the air to the blood, and, at the same time, carbonic acid gas enters the air in the air cells. In this process of respiration, therefore, the expired air is rendered impure by the admission of CO_2, moisture and other organic impurities, whilst the impure *venous* or carbonated blood is purified and changed into *arterial* or oxygenated blood.

From this brief sketch we see how necessary are the following directions in school work, viz. :—(1) that the air we breathe should be as pure as possible ; (2) that we should quickly get rid of the impure air after it has been breathed ; (3) that we should induce our scholars, by well constructed desks and benches, by drill, and by careful directions on the posture of the body, to expand their chests, and thus fit their respiratory organs for the most efficient discharge of their work ; and (4) that at times exercise, in the form of vigorous play, should be encouraged, so as to accelerate the process of breathing.

Tests for impurities in the air.

Upon entering the schoolroom a stranger can at once pronounce upon the 'closeness' of the air by the sense of smell. A simple chemical test is thus described by Dr. Newsholme.*—'Procure a bottle containing 10½ fluid ounces, blow the air of the room into it by means of a bellows, pour in half-an-ounce of lime water, and after corking tightly shake the bottle well for two or three minutes. If no visible milkiness is produced (by the union of carbonic acid and lime forming chalk), then the amount of carbonic acid in the room is below 6 parts in 10,000.' By passing the air of the room through a solution of Condy's fluid the presence of organic impurities may be made manifest by the change of colour which follows.

3. Amount of Air required.

Careful calculations by experts in hygiene bring out the following results :—In school-rooms with from 10 to 15 square feet superficial area per child, and with a height not exceeding 12 to 14 feet, the air should be changed about ten times per hour, in order to maintain it in a state of healthy purity. This rate of change allows about 1,800 cubic feet per child each hour, or 30 cubic feet per minute.

It is found that very lofty rooms do not conduce to air purity unless the rooms are well ventilated near the ceiling, as the foul air collects in the upper regions and then by cooling descends, rendering the lower layers impure.

* *School Hygiene*, p. 23.

4. Methods of Ventilation.

The method of summer ventilation by means of open windows and doors dependent chiefly on the existence of natural air currents or winds, is termed *Natural Ventilation*. The methods of propelling air into a building or mine by machinery, and of withdrawing (aspirating) it at or near the roof by mechanical aspirators is clearly *Artificial Ventilation*. The various devices, however, for directing the course of the incoming current, and the ventilating effects following the warming a room—methods and effects which are about to be described and illustrated, are classed by both Dr. Corfield and Dr. Newsholme amongst 'Natural' ventilators.

A satisfactory system of ventilation should accomplish the following results:—

1. A frequent change of the air in a building, without draughts.

2. This change should be constant and not fitful.

3. The air entering the room should be pure.

4. The air passing out should be the impure air caused by breathing, and by processes of burning and lighting.

5. Combined methods of Warming and Ventilating.

Whenever the outer air reaches a temperature of about 50° Fahr., it becomes necessary, in order to maintain the temperature of the school-room at about 60° Fahr., and to prevent cold draughts dangerous to health, either to have recourse to a fire in an open grate or a close stove, or to warm the air entering the room by passing it over hot pipes.

The open grate—its value for warmth and ventilation.

The open fire, on account of its cheerful aspect, its agreeable warmth, and its ventilating power, is a favourite agent for warming and purifying the air in a room; for schools with accommodation up to 500 children, it may be considered economical. For larger schools, and especially in cases where a caretaker is employed and constantly in attendance, the open fire may with advantage give place to some form of 'warming apparatus.'

Disadvantages of the open fire.—(1) a great waste of heat, as very much escapes up the chimney; (2) unequal warmth, the distant regions remaining comparatively cold; (3) cold draughts for the feet; (4) the need of frequent attention, and an untidy appearance of hearth; and (5) the danger of young children catching fire.

It is estimated that an open fire withdraws about 20,000 cubic feet of air up the chimney per hour. Unfortunately this air is not necessarily impure, for the tendency must be to take the air which has forced its way under doorways, along the lower regions of the room, thus leaving the middle layers of air stagnant and impure. In order therefore to increase the warming power of the open grate, and to cause a change in the middle and upper layers of air, various modifications of the open fire have been adopted. Added to these, for purposes of more perfect ventilation, are certain devices for the admission of fresh pure air into the middle or lower portion of the room, and the exit of foul air near the ceiling.

Modifications of the open fire, designed to secure greater warmth together with the circulation of fresh warmed air.

In order to utilise the heat at the back, the sides, and the bottom of the grate, a hollow chamber B, lined with fire brick or fire clay, is arranged as shown in the adjoining fig. This chamber receives the fresh air direct from the outside at K; the fresh air is warmed in the chamber and then passes into the room from a grating C, immediately above the mantel-shelf E. Grates made on the principle just described have received various names, according to slight modifications in their structure. They are called the Galton, Manchester, Boyd, Pierce or Longden grates.

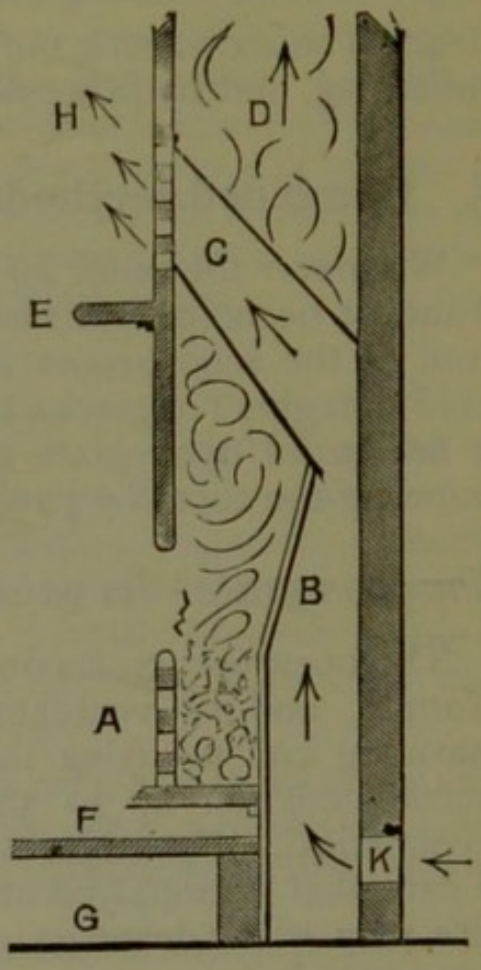


Diagram of a Manchester Grate.

Unless the current of warmed air is a powerful one, there is great danger of the current passing directly from over the mantel-shelf into the chimney. The grating should not be opened until the walls of the air chamber have become thoroughly warmed. A strong current of pure air is then induced as soon as the grating is opened. At first this warm and pure air ascends, then it gradually cools and descends ; finally, if no disturbing draughts obstruct, it becomes an indraught of breathed impure air passing up the chimney.

Supplementary appliances for the admission of pure, and the exit of impure, air.

(1) Tobin Shafts.

By this means air is directed upwards when entering the room, and afterwards descends slowly without causing a draught. A, in the fig. below, illustrates both the construction and working of this appliance.

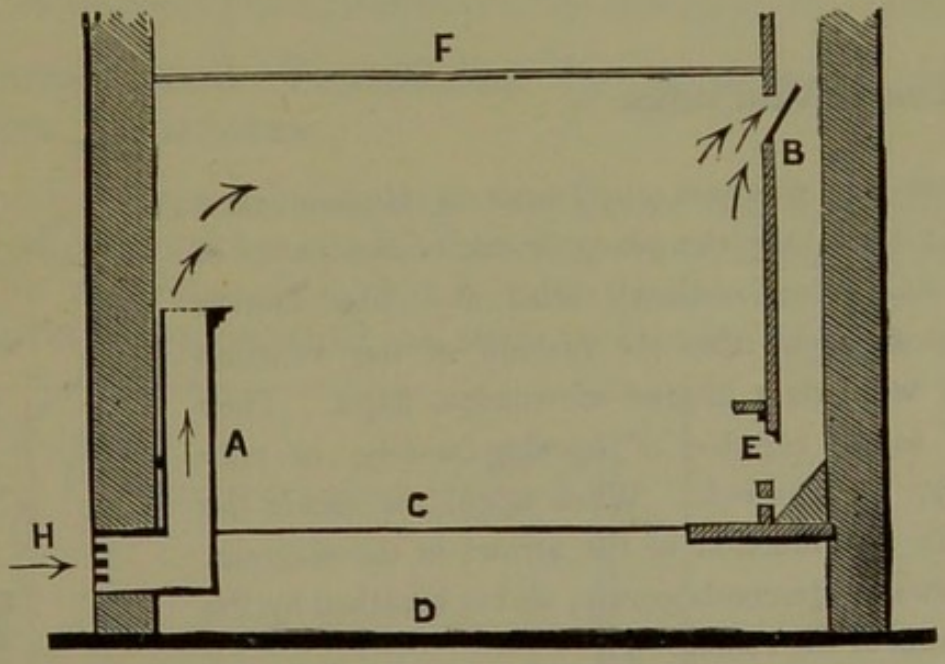
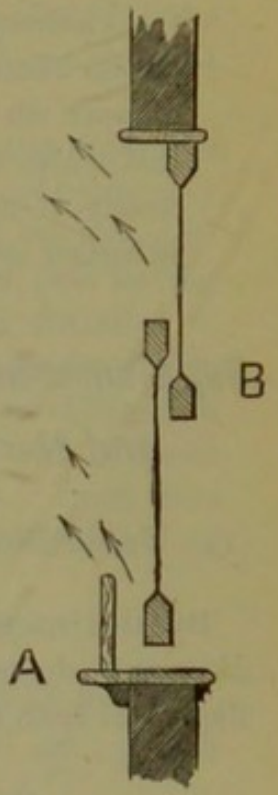


Fig. showing the use of a Tobin's tube A and an Arnott's valve B.

N.B.—These are sometimes placed in window sills, with the double disadvantage that there is less heat at the entrance of the shaft, and thus less power for producing a current ; and, further, the air after admission is shot against the upper and projecting portion of the window opening, and is afterwards deflected in the nature of a draught directly or almost directly downwards upon the heads of scholars sitting near them.

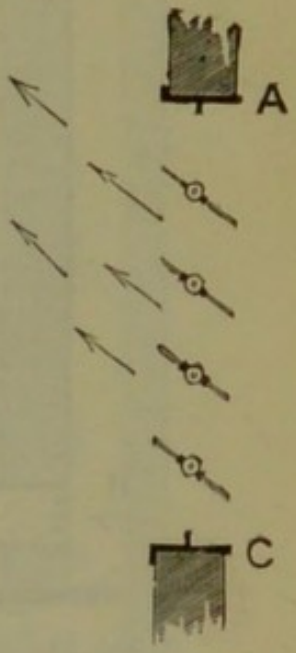
(2) Application of Tobin's principle to the ordinary Sash Window.



A six or eight inch flap is permanently fixed at A, so as to deflect the inrush of air into the room upwards; a similar upward current of fresh air is obtained at B. This is a very simple and effective appliance for admitting fresh air, and can be utilized as well for private houses as for schools.

The advantage of inducing an upward current should be noted. If the fresh air be admitted at the top of the room, as when the upper sash of a window is lowered, the cold air immediately falls, causing a cool draught upon the heads of those sitting near. By giving the air an upward movement at first, this waterfall action is prevented, and one analogous to a fountain spray is imitated.

(3) Louvre Ventilators.



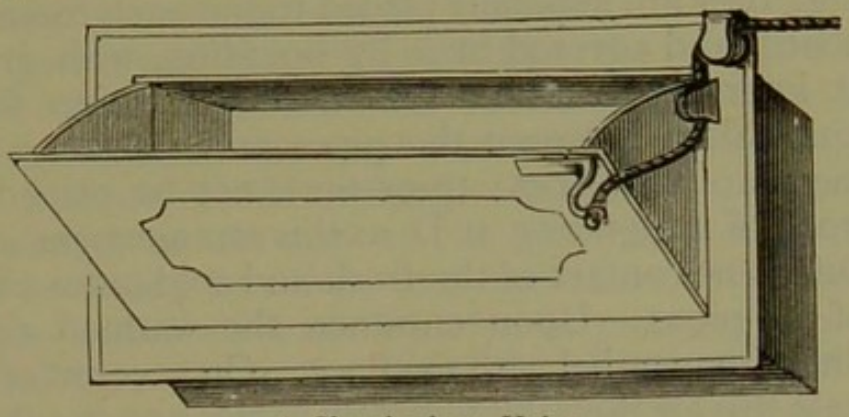
These are common appliances in German class rooms; they take the place of one of the panes of glass AC in an ordinary window. The Louvre ventilator works after the fashion of our venetian blinds, with glass instead of wooden flaps. They ought to be capable of opening widely, or only slightly, as required. When open, air enters the room in the direction of the arrows in the diagram. It afterwards descends gently, and is breathed by the occupants of the room.

(4) **Boyle's Air-Pump Ventilator** serves admirably for withdrawing the air from the upper parts of a room. It is self-acting, after the fashion of a cowl; it has, however, no movement of its own, and does not therefore readily get out of order.

(5) Valves.

These are openings for the inlet or exit of air on a limited scale. The chief are the Sherringham and Arnott's.

(*a*) The *Sherringham* is used for the admission of fresh air towards the upper part of a room. French windows may be hinged at the bottom, and be made to act like enlarged Sherringham valves.

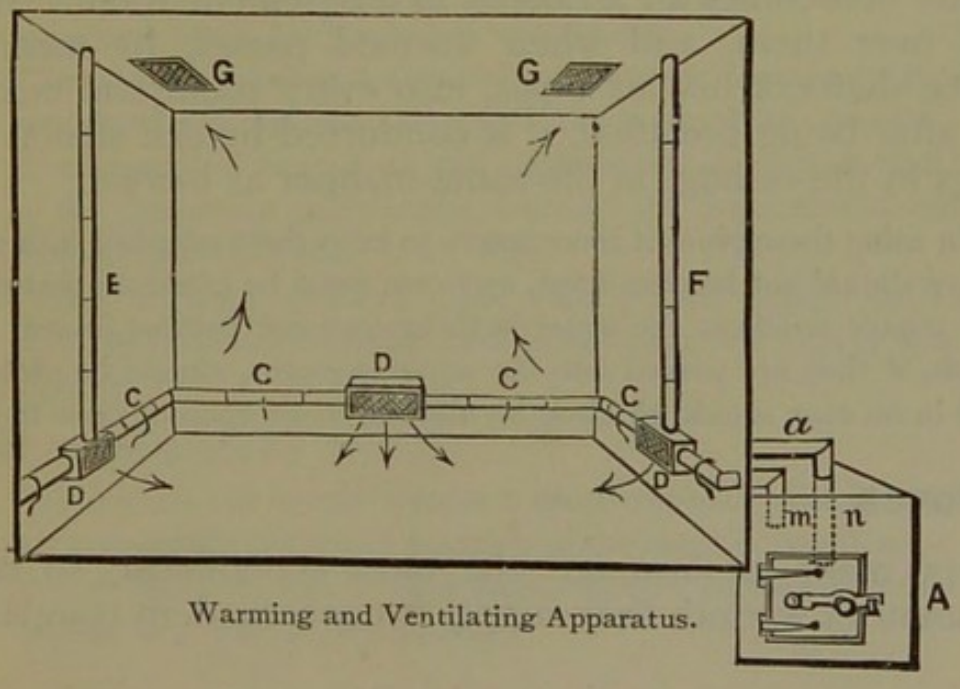


A Sherringham Valve.

(*b*) *Arnott's valve* is fixed near the ceiling, over the fire place; it opens into the chimney. The valve is so hinged as to allow a current of air to pass out, but immediately any back draught is attempted the valve closes. The fig. on p. 83 illustrates a simple form of this useful valve ventilator. Boyle's adaptation of this principle prevents the constant noise of the flapping valve, by suspending valve plates before the opening into the chimney.

6. Warming and Ventilating by means of Hot Water Apparatus.

In schools of over 500 scholars a system of hot water pipes is the most economical mode of obtaining warmth and ventilation. The accompanying sketch sufficiently illustrates the general principles upon which all such appliances depend.



Warming and Ventilating Apparatus.

A central furnace A is placed somewhere near the basement, and entirely separated from the air supply of the school. From this furnace pipes are conducted to all the rooms of the building; they are generally placed round each room near the skirting board, and covered over by boarding, with gratings D placed at intervals to admit the warmed air into the room. Communication between the pipes and the outer air is secured by means of air-bricks; these must not be placed immediately in front of the grating at D, as this arrangement would not provide sufficient contact of the fresh and cold outer air with the surface of the pipes. Upon entrance, the warmed air should have a direction parallel with the floor. On account of its relative lightness this air then immediately passes as a gentle upward current towards the ceiling. In its progress upwards the air is breathed by those in the room, and is afterwards conducted through the ventilators G in the ceiling into exit shafts. These exit shafts carry the impure air towards the roof of the building. In order to induce this current to pass upward, a coil of hot water pipes or a gas fire is placed near the highest part of the exit shaft. The water when first heated in the furnace is made to rise and circulate through the pipes, as described above, by the pressure of the cold water which descends from the return pipes. The latter should terminate in the furnace at a point below the end of the pipe which is to convey the heated water. The circulation of the water in the pipes is thus seen to be an application of the principle of 'convection currents.'

As an alternative to the above arrangement, the hot water pipes are sometimes all arranged in a basement room. Air is passed over them, and when warmed passes, by means of entrance shafts or hot air pipes, into every room and near the floor; after being breathed, it is conducted by exit shafts, from gratings in the ceiling, in the same manner as before.

In using these pipes it is necessary to keep them supplied with water. They should not be over-fired, and care must be exercised that during the winter holidays the water in them does not become frozen. The pipes, if they are passed into the separate rooms, should be protected, and in no case should children be allowed to sit upon or close to them.

Stoves.

Stoves made of iron are the most economical, so far as the amount of warmth they supply is concerned, in comparison

with the fuel they consume. By means of flanges on the sides, giving a fluted appearance to the stove, a considerable extension of warming surface is obtained. The great disadvantage connected with most stoves is that they simply warm the air *already in the room*, and do not provide for the entrance of a fresh and pure supply. If an air current be admitted through ventilator gratings near to the stove, so as to be warmed upon admission, the chief objection to them disappears. A shallow tray of water placed on the top of the stove is sufficient to prevent the air becoming too dry; and care must be exercised not to allow the metal sides and plates in contact with the air to be heated to redness, for then the combustion of the organic impurities in the air occasions a disagreeable smell.

A flushed appearance of the face of each scholar in a room is a sure indication of the air being improperly warmed. This appearance arises either from the feverish condition of the skin and lungs, following extreme dryness of the air, or from the increased action of the heart, due to the effort required to supply sufficient air through the lungs to purify the blood. After a time the flushed appearance yields to pallor, and this is generally accompanied with or followed by headache.

The relative advantages of (a) hot air pipes, (b) hot water pipes, and (c) open stoves.

Hot air pipes:—

1. The apparatus in this case is quite away from the daily working of the school.
2. The entrance gratings can be placed in any part of the room, and hence in the position where the inflow of warmed air will cause least inconvenience to both scholars and teacher.
3. The apparatus being collected in a separate room, any repairs can be conducted without interfering with the work of the school.
4. The amount of heated air and its temperature can be readily adjusted to the changes in daily temperature by the admission of cold air direct to the entrance shafts.
5. When separate shafts or pipes communicate directly with each room, those nearest and those furthest from the central supply can be warmed equally.

Hot water pipes:—

1. When these run round a room a most complete distribution of warmed air throughout the lower portions of the room is possible.
2. Air is less dry, and is in a more natural condition than when highly heated in a central air chamber.

3. Being a more direct supply the air is less liable to be charged with impurities than when it is conducted through shafts of considerable length.

Open stoves :—

1. Maintain the natural condition of the air most fully as regards (*a*) moisture, (*b*) purity.
2. Carry the super-heated air up the chimney, and the air in the room is gently warmed by contact with the furniture and walls, all of which are only moderately heated.
3. More effectively secure a supply of fresh air from the outside by taking a considerable amount of air up the chimney.
4. Supply the means of obtaining the necessary amount of radiant heat in cases of exceptional cold. Furthermore, the apparatus does not easily get out of repair.
5. Always present a cheerful and inviting aspect.

8. Government instructions on the ventilation and the warming of a School.

'Apart from open windows and doors, there should be provision for a copious inlet of fresh air, also for outlet of foul air at the highest point of the room. The best way of providing the latter is to build to each room a separate air-chimney carried up in the same stack with smoke flues. An outlet should be warmed in some manner or it will frequently act as a cold inlet. The principal point in all ventilation is to prevent stagnant air. Particular expedients are only subsidiary to this main direction. Although lighting from the left hand is considered so important, ventilation in summer demands also the provision of a small swing window, as far from the lighting as possible, and near the ceiling.'

'The warming should be moderate and evenly distributed, so as to maintain a temperature of from 56° to 60°. When a corridor or lobby is warmed, the rooms are more easily dealt with, and are less liable to cold draughts. Where schools are wholly warmed by hot water, the principle of direct radiation —*i.e.*, by means of the hot water pipes carried into each room—is recommended. In such cases open grates in addition are useful for extra warming occasionally, and their flues for ventilation always.'

SCHOOL SITE AND DRAINAGE.

1. Site of School.

In selecting the site of a school it is necessary to avoid damp and marshy situations. These may be damp either on account of their low position or of the impervious character of the subsoil, clay especially being a familiar example of a subsoil which, unless well drained by its sloping surface, is liable to provide a damp site. Besides moisture, the soil and subsoil contain a considerable amount of imprisoned and hence contaminated air. Sand, gravel, and other porous subsoils are especially charged with ground air, and when this passes upwards through the floor of the building, either on account of the rise of the ground water, or because of the warmth within the school, it becomes a source of considerable danger.

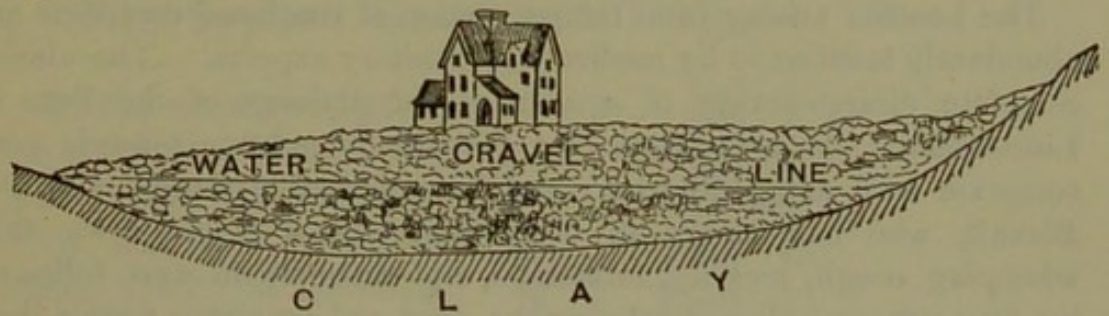
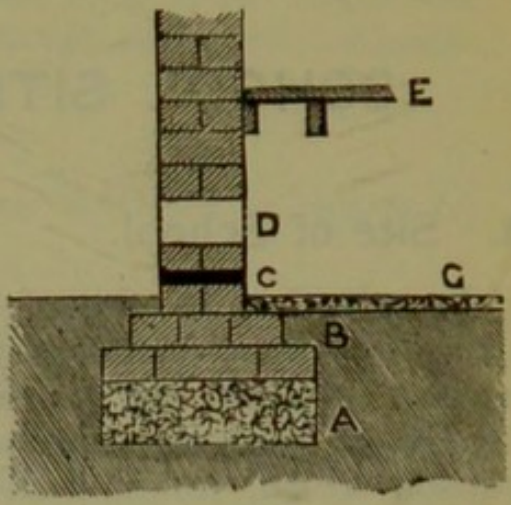


Diagram showing the line of 'ground water' with the gravel above it charged with imprisoned air.

In gravel and sandy subsoils another danger must be guarded against. In order to save outlay in preparing mortar for building operations, sand is excavated from beneath the structure. The opening is afterwards filled with refuse, which (unless entirely composed of mineral matter) may yield unhealthy vapours. The same danger arises whenever the site of a school is on what is termed 'made land,' *i.e.*, a depression filled up by artificial means.

Prevention of dampness and of danger from noxious ground vapours.

Brick and many building stones are porous, and if kept in connection with moisture, the latter, by a process of capillary attraction, rises up the walls for a considerable distance.



In order to prevent this evil a course, called a 'damp course,' C, is laid along the entire length of the walls, and should, if possible, be placed just above the level of the ground. This 'damp course' is composed frequently of pieces of slate, embedded in cement with a coating of tar. At other times it is a layer of asphalte or glazed stoneware.

If the ground G beneath the floor boarding E be covered with a layer of concrete and cement, as shown in the accompanying fig. at G, and air-bricks be inserted at intervals between the damp course and the floor line as shown at D, the cement floor will effectively prevent the rise of ground air, and the constant current beneath the floor boarding through the air-bricks will keep the area beneath the school free from moisture.

The benefits arising from the prevention of continued dampness are abundantly testified to by medical and sanitary experts. The almost complete disappearance of *ague* since the drainage of the Fens in Lincolnshire; the association of a prevailing tendency towards consumption with damp situation; and the remarkable testimony of Dr. Blaxall, who has shown in connection with a single town that whooping cough, measles, bronchitis, and rheumatism were followed by fifty per cent. less deaths on the sand and limestone section than occurred on the clay area;—these are indisputable evidences of the necessity of providing as dry a situation for a school building as possible, and of the need of adopting measures for preventing the moisture of the soil and the ground air it may enclose from rising through the floor of the building.

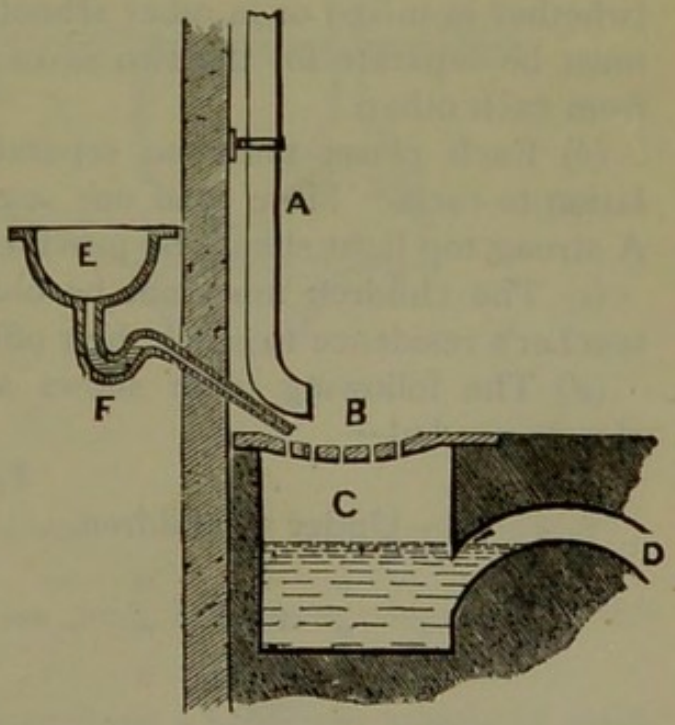
The removal of a school as far as possible from the noise of a crowded thoroughfare, or of a high factory, or of a line of railway, so that quiet, plenty of light, and an abundance of fresh air may be available throughout the entire day is a most important consideration in selecting a site.

2. School Drainage.

Water falling upon the roof of the school and upon the playground must be carried away as quickly as possible. In rural schools means are generally provided for storing the rain water falling upon the school roof. Cisterns for this purpose must be

perfectly water-tight, and thus be protected from any danger of the water stored in them becoming contaminated by the infiltration of surface or cess-pool impurities. In towns provided with a central water-supply there is less need to store up the rain water; it is generally, therefore, quickly conveyed into the sewers. The mode of connecting both the stack pipes conducting the water from the roof, and the gratings of the gullies in the play-ground, with the pipes conducting the water to the sewers, is a most important consideration. In each case it is absolutely necessary to provide a complete hindrance to the escape of the sewer gases, either through the grating or up the stack pipe, whilst a ready exit is secured for the water from both roof and play-ground. Children play near these openings, and hence it becomes necessary that those in charge during play time should understand *thoroughly* the construction of the connections between the sewer pipes and the surface gratings, and also the means by which the safe working of them may be maintained.

3. The Syphon Gully and Trap.



In the annexed figure the stack pipe A empties the water it receives from the roof immediately upon the grating B. The water then enters the little cistern C, and any sand or other solid substance falls to the bottom, whilst the water, when it reaches the level of C in the cistern, passes out by the bent pipe D direct into the sewer. It will be seen that no sewer gas can get beyond D in consequence of the water always filling the end of the sewer pipe leading out of the little cistern C. This arrangement for preventing the passage of sewer gas into the cistern, and thence through the grating B, is termed a trap.

The value of the syphon trap and gully is at once evident if the effect of joining a stack pipe directly with the pipe leading to the sewer be considered. The stack pipe would then become the channel for the escape of the foul gases from the sewer, and as these are generally lighter than the air they would pass up the pipe and escape somewhere near the upper windows of the school-room; the slightest indraught of air would then convey them into the school-room. In very dry weather it is necessary to supply the cistern C with water, otherwise the level of the water in the cistern may sink by evaporation so as to allow the escape of the sewer gases through the grating at B. This form of gully frequently traps the sewer pipes at the lowest points of the play-ground and thus becomes a safe exit for the surface drainage. It is necessary at times to take off the upper grating and clean out the sand and other débris which collect in the bottom of the cistern.

4. Regulations of the Department respecting latrines or water-closets.

Water-closets within the main school building are not desirable, and are only sanctioned for female teachers.

(*a*) The doors and passages from the school-room to the latrines (whether in mixed or in other schools), and the latrines themselves, must be separate for the two sexes and constructed entirely apart from each other.

(*b*) Each closet must be separate, having a door and ventilation to each. More than one seat is not allowed in any closet. A strong top light should be provided.

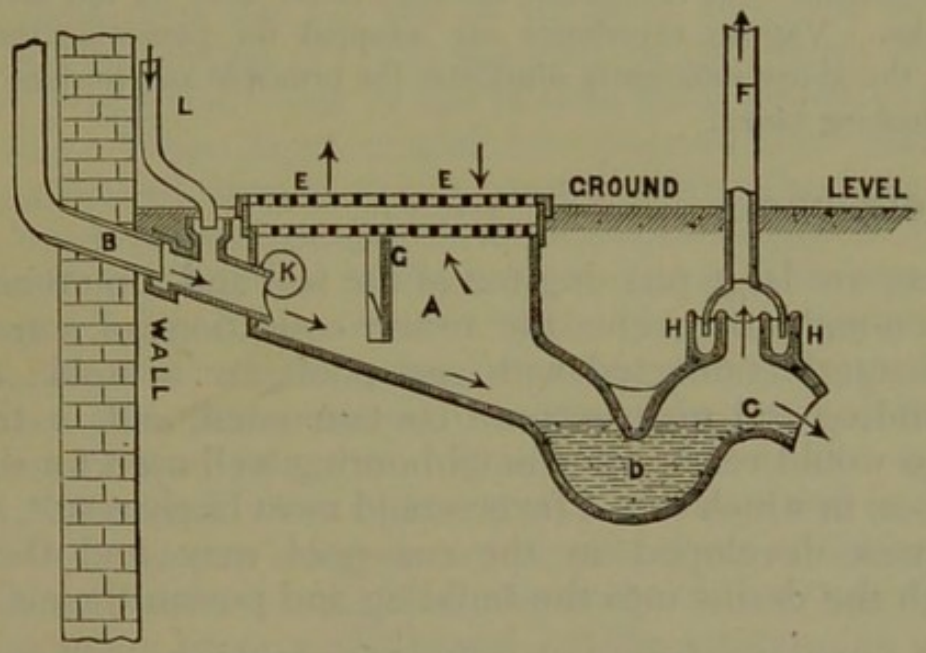
(*c*) The children must not be obliged to pass in front of the teacher's residence to reach their offices.

(*d*) The following table shows approximately the number of closets needed—

	For girls.	For boys.
Under 50 children...	3	2
„ 70 „ ...	4	2
„ 100 „ ...	5	3
„ 150 „ ...	6	3
„ 200 „ ...	7	4
„ 300 „ ...	8	5

(*e*) Cess-pools should only be used where unavoidable. Earth and ash closets of an approved type may be employed in rural districts, but drains for the disposal of slop and surface water are still necessary.

(*f*) Soil drains must always be laid outside the building (on a hard even bottom of concrete) in straight lines with glazed stone-ware pipes, carefully jointed in cement and made absolutely water-tight. A diameter of 4 inches is sufficient, unless receiving the discharge of more than 10 closets. Above this number the diameter may be 6 inches. The fall should never be less than 1 in 30 for 4-inch, and 1 in 40 for 6-inch drains. An *inspection opening* or chamber should be provided at each change of direction, so as to facilitate the cleansing of the drain without opening the ground. Every soil-drain must be disconnected from the main sewer by a properly constructed *trap* placed on the line of drain between the latrines and the public sewer. This trap must be thoroughly ventilated by at least two untrapped openings, one being the 4-inch soil-pipe, carried up full-size above the roof, and the other an inlet pipe connected with the side of the trap furthest from the public sewer.



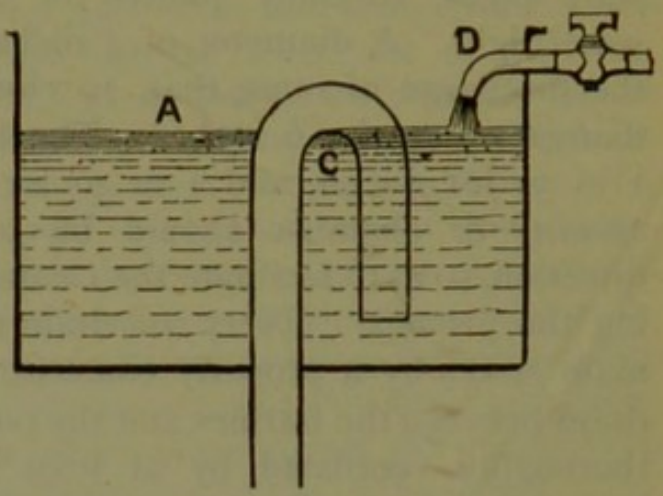
A = Inspection opening. B = Soil pipe. D = Trap. F = Ventilating shaft.

Automatic flushing tanks are desirable where rough closets are used.

(*g*) U inals must in all cases have a sufficient supply of water for flushing.

(*h*) Waste pipes from sinks or lavatories should be first trapped inside and then made to discharge direct through the wall over a trapped gulley. See fig. p. 91.

5. Construction and action of an automatic flushing tank.



A bent tube C is fixed in a cistern A, as in the accompanying figure, the shorter arm reaching nearly to the bottom of the cistern. When the water, flowing in from the pipe D, reaches the bridge of the bent tube, it begins to flow over, and in flowing down the longer arm carries some of the air in this tube with it. A syphon action is soon set up, and a rush of the water follows by which the cistern is rapidly emptied into the closets below. When the level of the cistern water is lowered nearly to the mouth of the shorter arm, the flow ceases until the water rises a second time to the level of the bent tube. Various expedients are adopted for perfecting the syphon action ; the above sufficiently illustrates the principle and working of these useful flushing tanks.

6. Cess-pools.

These are large pits dug out of the soil and sometimes made large enough to receive the refuse collections of some years. The dangers connected with cess-pools are twofold: (1) the surrounding soil may become contaminated, and in time the leakage would reach some neighbouring well used for drinking purposes, in which case a fever would most likely result, and (2) the gases developed in the cess-pool may find their way through the drains into the building and poison the air.

A partial remedy for both evils is to make the cess-pool small, so as to demand the frequent removal of its contents, and further, to brick and cement the interior throughout, so as to make it watertight.

7. Earth Closets.

In these closets earthy matter is used to mix with the refuse material and to deodorise it. Chalk and sand are not recommended for use in these closets. The great amount of earth required for a large community (1½ lbs. per person per day), the difficulty of always obtaining it in a dry condition, the

necessity for frequent removal of the contents, the slight value of the removed material, and the difficulty in maintaining the apparatus in clean working order, are the chief objections to their use.

CONDITIONS FOR PREVENTING THE DEVELOPMENT OF BODILY DEFECTS.

1. School lighting and eyesight.

A sufficient light is essential to good work in schools. Besides being sufficient, the direction of the light is of great importance; the best light for school purposes is that which comes from the *left*. The reasons of this are two, viz.—(1) the left light does not fall full in the face and eyes of either the learner or teacher; (2) the shadows of the hand, the pen, and the pencil, fall clear of the strokes made either in writing or drawing. When light cannot be obtained from the left it may be admitted from the right; but if either a back or a front light is used, it must enter from a sufficient height to prevent the eyes of scholars and teachers from facing the windows in a directly horizontal line. When a back light comes through windows on the level with or below the children's heads, the teacher cannot see their faces, and in time his sight must suffer from the constant and full glare of light to which the eyes are subject. Similarly when light enters low down and in front of the class the teacher's face is not clearly in view, neither is the work done on the blackboard distinctly visible, and the eyes of the scholars become weakened by the continuous effort to regulate the amount of light entering them.

According to the *rules* of the Department 'all kinds of glazing which diminish the light and are troublesome to keep in repair should be avoided. A large portion of each window should be made to open for ventilation and for cleaning. The sills of the main lighting windows should be placed about 4 feet above the floor, and the tops of some should always reach near the ceiling.' The last named condition provides one of the readiest means for clearing out the foul air accumulating near the ceiling.

'Skylights are objectionable; they should not be introduced where windows are possible.' Amongst other objections to skylights, the following may be urged—(1) they are kept clean with difficulty; (2) they are rarely watertight for long; (3) unless the fastenings and the appliances for moving them are kept in good working order they may fall, and thus cause accidents; (4) when placed on the south side of a slanting roof the sun's light and heat become unbearable; (5) in winter a heavy snow-storm may block out the light from them almost entirely.

Medical opinion on Lighting.

The Ophthalmic Surgeon to St. George's Hospital, R. B. Carter, Esq., F.R.C.S., writing on the subject of 'Lighting,' in *Our Homes* (Cassell), says—

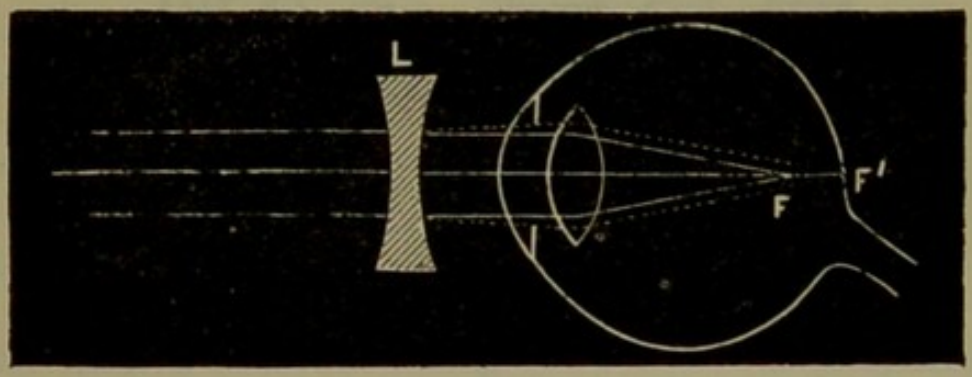
'When sustained accurate vision is required, as in such pursuits as reading, writing, or fine embroidery, the window should be on the left hand of the worker and a little in advance of him. In this position, and in this position only, will the eyes receive the maximum of diffused light from the surface looked at without being dazzled by the direct reflection of the solar beam. If the light is behind the worker, the body will intercept it, and it will be necessary to assume oblique and uncomfortable attitudes. If the light is on the right hand, the shadow of that hand will constantly obscure the work. Either of these positions, however is better than a direct front light, unless this is derived from a window so high as to be quite above the line of sight when the eyes are lifted in a moderate degree. In all the pauses of occupation, the eyes are lifted instinctively, and they should always be lifted to a lesser degree of illumination than that which they receive while working. The lesser amount of illumination rests the nervous tissues of the retina, allows the pupils to expand, and is a moment of comparative repose for the whole organ. If, on the contrary, the eyes are lifted to encounter an increased illumination, as must always be the case when the window is directly in front of them, they are stimulated instead of being rested, their pupils contract by increased muscular efforts, their nerve-tissues are excited instead of being soothed, and the intervals of labour, which ought to be periods of rest, are rendered periods of increased efforts and fatigue.'

2. Wall colours, window blinds, and eyesight.

The colour of the school walls should be such as to afford rest to the eyes after the close attention upon the white surfaces of reading and exercise books has been relaxed. A *pink* tint does not rest the eye, a cream colour or a French grey does, and these colours should, by preference, therefore be selected.

The objects of a window blind are to moderate the light passing into a room, and to shut out the view through the transparent glass. As school windows are generally placed too high for children to see out of them when at work, the latter object may be disregarded. It is evident that for the purpose of moderating the light entering a room, the common white blind is the least effective. Whilst, however, we avoid the use of a white blind because it does not screen sufficiently, we should not substitute for it a blind which is so opaque as to shut out all the light. Blue linen blinds are very generally used for windows with a south aspect.

3. Short sight and some of its causes.



In short-sightedness *(myopia)* the eye is elongated so that the rays of light coming from a distant object are brought to a focus at F in front of the retina. In order to cause these rays to focus upon the retina at F′, and thus to yield a distinct image, it is necessary to employ a concave lens L, as shown in the accompanying diagram. The short-sighted scholar who does not use glasses obtains the necessary divergence of the rays by holding the object close to the eye.

The straining effort to see which children often manifest, whether due to a natural defect in the eye, or to defective light, or to ill-posture through badly-arranged seats and desks, has the

effect of still further changing the shape of the comparatively soft and yielding coating of the eye—'the muscles effecting the convergence and accommodation of the eyes required for the clear vision of minute objects, exert a kind of pressure on the globe, which causes its elongation, and it follows that the longer the hours of work and the closer the application the greater is the deformity of the eye which is induced.'

'*Short sight*,' says Dr. Edgar Browne, 'is the direct result of school work under existing school conditions, and the disease increases in frequency and degree with a remarkable regularity in proportion to the age and industry of the child. All the investigations tend to prove that short sight is directly produced—*first*, by a difficulty in seeing, either by defective lighting or bad print; *secondly*, it is intensified by the stooping induced by the effort to see clearly.

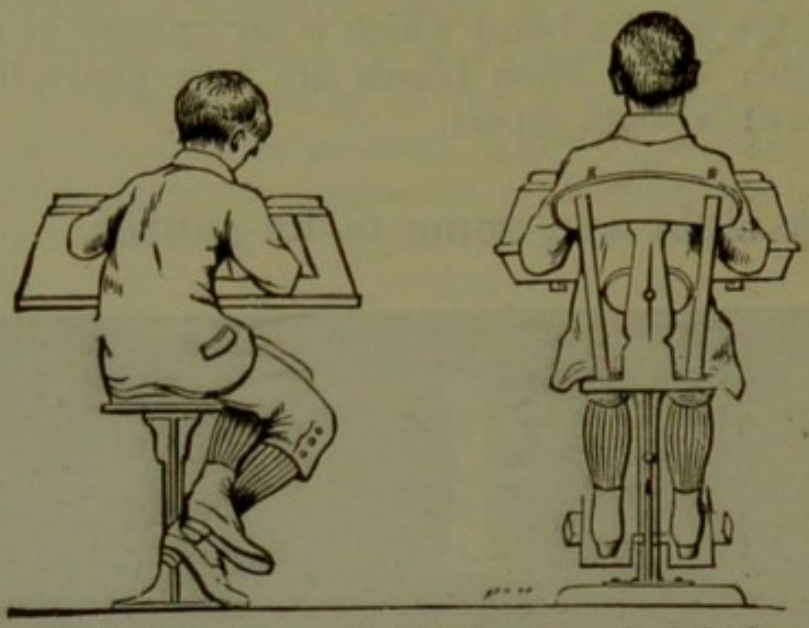


Diagram showing good and bad positions in desks.*

'Closely connected with short sight we find lateral curvature of the spine, and this completes the vicious circle of cause and effect. Let a child experience a difficulty in reading his tasks; he then holds his book close to his eyes; from this arises short sight. If the slope of the desk is bad, the head must naturally stoop over the book to see clearly. This stooping increases the short sight, and the maintenance of an awkward bent attitude produces a permanent deviation from the normal curvature of the spine.'

In long-sightedness (*Hypermetropia*) the rays from an object are focussed behind the retina. Convex glasses are used to bring the rays to a focus on the retina.

* Kindly supplied by the North of England School Furnishing Company.

4. A combination of evils.

The following combination of evil effects may be expected to arise from the use of badly printed books, of ill-proportioned desks, and from the defective distribution of light. A book is printed, it may be, with defaced, worn-out type, or the printing is too small; as a consequence, there is a strained effort to make out the words; the book is held near the eyes, or the head is held over the book; the straining and stooping efforts, besides causing shortsightedness as already stated, induce a flow of blood to the head. A head-ache follows, and if the effort be long continued a congested state of the blood vessels may ensue.

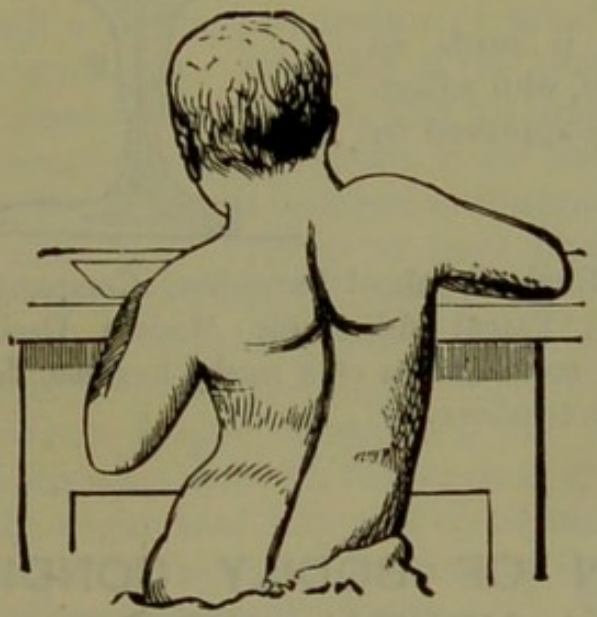


Diagram showing curved position of back and spine.

Chas. E. Paget, Esq., writing on the evils arising from ill-constructed desks in *Healthy Schools*, International Health Exhibition Handbook, makes the following statement:—

'Few can have failed to observe the very constrained attitude assumed by young children on first attempting or learning to write. The shoulder is raised; the arm thrust forward, and the back curved laterally instead of naturally. The greatest possible vigilance and supervision should be exercised to prevent the tendency to the production of spinal curvature, and for this purpose great care should be taken that the obvious aids to the production offered by desks and seats made on ill-considered lines should be avoided. These obvious aids are—(1) desks and seats ill-arranged in respect of height, so that the

scholars have to stoop over their work, (2) flat desks, and (3) an undue distance of the seats from the desks.'

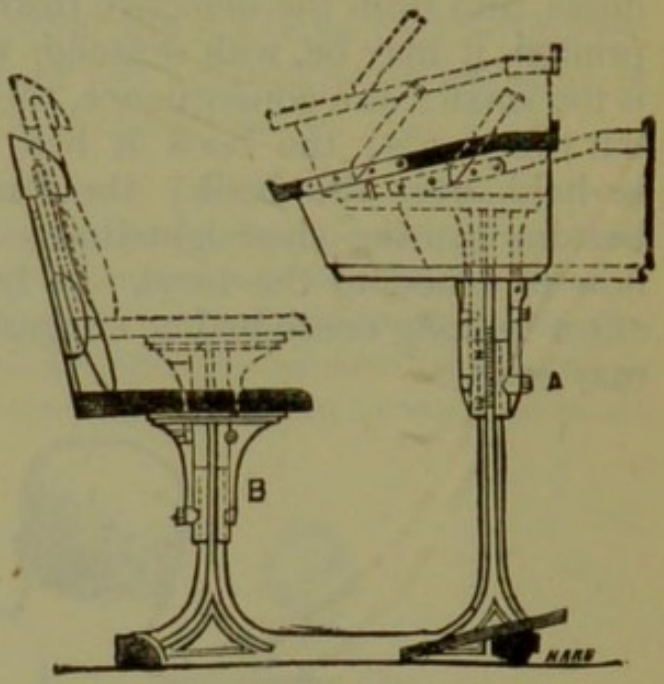
5. A Model Hygienic Desk.

Explanation.—1. By the application of a Key to A and B, the desk and seat may be raised or lowered to the desired height.

2. The *Desk Top* slides horizontally.

3. The *Writing Slope* is at an angle of 15°, the *Reading Slope* of 40°.

4. The chair is made on hygienic principles, with adjustable spine pad as approved by Dr. Roth.



The North of England School Furnishing Company has constructed a desk, called the 'Patent Adjustable Modern Desk,' which provides admirably for the requirements of a model hygienic desk. A sketch and explanation are given above.

RELATION OF BODILY CONDITIONS TO MENTAL VIGOUR.

1. School-work mainly intellectual.

If we take any approved time table and study the sequence of lessons therein set forth, the commanding position which intellectual effort holds as compared with physical exercise is at once apparent. It is true that in elementary school life the need for direct physical training is not so great as in schools and colleges where the pupil is under the entire direction of the school authorities. In these establishments food, physical exercise, sleep, cleanliness of person, are most important, and even essential elements in the school arrangement; when, however, it is considered that in the elementary school the best portion of a child's day, *i.e.*, from 9 a.m. to 4.30 p.m., is mainly

under the direction of the school authorities, the subjects of physical exercise, of fresh air, of cleanliness, of care of apparel, and the mid-day food ought not to be systematically neglected.

2. The connection of bodily vigour with mental effort, and the condition of school work by which both may be fostered.

(a) Mental effort is connected with brain exercise.

The brain is necessary for all mental operations, and, like any other physical organ, it is strengthened by judicious effort and becomes wearied with over-exertion. For healthy exercise it needs to be well nourished by means of good food, fresh air, and a vigorous circulation. Exercise of the brain, furthermore, results in an increase in its amount, and an improvement in its quality. The average weight of brain in an adult European is about 50 ounces, but amongst heathen and uncivilized races the average is somewhat less. 'As far as pure physiology is concerned,' says Professor Bain, 'I would draw attention to one circumstance in particular. The human body is a great aggregate of organs or interests—digestion, respiration, muscles, senses, brain. When fatigue overtakes it, the organs generally suffer; when renovation sets in, the organs generally are invigorated, but the organ that happens to be most active at the time receives more than its share; to exercise the several organs unequally is to nourish them unequally. . . . To increase the plastic property* of the mind you must nourish the brain. You naturally expect that this result will ensue when the body generally is nourished; and so it will, if there be no exorbitant demands on the part of other organs, giving them such a preference as to leave very little for the organ of the mind. If the muscles or the digestion are unduly drawn upon, the brain will not respond to the drafts made upon it. Obversely, if the brain is constituted by nature, or excited by stimulation, so as to absorb the lion's share of the nutriment, the opposite results will appear; the mental functions will be exalted, and the other interests more or less impoverished.'

'When the cerebral circulation is quickened the feelings are roused, the thoughts are more free and rapid. In mental excitement there is

* Bain here means the retention of knowledge together with increase in the power of acquiring it.

generally an unusual flow of blood to the head, as may be seen from the throbbing of the carotid arteries in the neck; and during severe mental exercise of any kind there is what has been called "a determination of blood to the brain," with a rise in the temperature there, and a fall of temperature in the hands and feet.'*

(b) The exercise should be suited to the stage of development and age of the pupil.

The prime condition for the healthy development of any physical organ is to take the organ during its growing stage and, by regular but not over-exacting exercise, to fit it for the special work it is required to perform. In this light it is most important that systematic brain exercise should be begun early in life, and, further, that the kind of exercise should, as far as we can ascertain it, be suited to the stage of development which the organ assumes at different periods. For instance, the first intellectual efforts should be those of acquisition through the exercise of the *senses*; this stage is followed by a remarkable development of the power of *retention*. The final stage is distinctly marked off as that of *thought*, including the operations of Conception, Judgment, Reason. Neglect of the exercise of any of these faculties at the proper time is followed by inability to make up for the loss by any subsequent exertion.

It is established by the experience of teachers and educationists that the child's power of brain effort is best conserved by supplying it with exercises which follow the above order. To attempt the abstractions of grammar, or the principles of science at an age when a child should be mainly engaged in exercising its powers of observation, of memory and of imagination, is to invert the natural order and to exhaust the organ in a vain and fruitless endeavour.

(c) Exercise should be suited to the freshness or otherwise of the physical organ.

The early hours of each day must be devoted to making new acquisitions; afterwards, effort should be mainly directed to repetition and reproduction of what has been acquired. 'To exercise a power once acquired should be a far easier thing, much less expensive than to build up a new acquirement. We may be in sufficiently good condition for the one, while wholly out of condition for the other. Indeed, success in acquirement,

* Sir J. Crichton Browne, M.D.—*Book of Health* (Cassell).

looking at it according to physiological probabilities, should be the work of rare, choice, and happy moments; times when cerebral vigour is both abundant and well directed.' *

3. Home work; its character and amount.

The consideration of the nature of the pupil's exercise in relation to the condition of brain power throws much light upon the subject of home lessons. The evening hours of the youth attending an elementary school, where but little attention and time are given to physical exercises, should not be largely encroached upon for the purposes of continued mental effort. Exercises of the various physical organs—hands, arms, feet, legs, and the body generally—are necessary for healthy circulation of blood to the brain, and besides the general tone which these exercises give to the brain as a whole, there is a development in its structures, which the exercise of the various limbs induces, apart from the development consequent upon mental efforts such as have been before mentioned. If then home work is a part of the school arrangement, it should be limited in amount, and in no case should it demand more than forty to sixty minutes.

What is of more importance, however, than the time spent in the exercise, is the character of the work set. Revision and reproduction of lessons mastered under the direction of the teacher during the day are the most suitable exercises for the pupil in the evening. Very rarely indeed should new ground be broken up during the home exercise. The old notion of 'preparing' the lessons for the following day, and then of occupying the brightest and freshest hours of that day in hearing and correcting the pupil's work, is entirely wrong. We utilize the morning hours best by conducting the scholar over new ground, rendering just as much assistance as is needful to stimulate endeavour and maintain progress, but not so much as to weaken independent effort.

4. Necessity for change and rest.

Every well-ordered time table shows at a glance the necessity of a series of changes of effort combined with intervals of complete rest. The arithmetic lesson is not succeeded by one in algebra, and that again by the solution of a rider in Euclid. Whilst the lessons requiring the highest form of intellectual

* Bain—*Education as a Science.*

effort, such as reading, science, and arithmetic, are allotted to the morning hours, and whilst singing, writing, and manual instruction fall naturally to the afternoon, the change of lesson every forty-five or sixty minutes in the morning from language or history (mainly memory and imagination) to arithmetic (mainly reasoning), or to science (observation and reasoning), is found to be accompanied by the best results. 'One of the greatest improvements in modern educational methods, considered both from a hygienic point of view and from that of mental efficiency itself, is the substitution of short for long lessons, and the frequent alternation of mental and bodily exercise. Since the brain is a complicated group of structures, it is reasonable to suppose that different regions are specially engaged in different kinds of activity. Adopting this view of brain-action as engaging special centres at different times, we may see that the due variation of school subjects owes a part of its value at least to the circumstance that it fulfils in a subordinate manner the purpose of brain-rest. Thus by passing from an object lesson to a singing lesson the centres of vision are put into a condition of comparative rest, while other centres, the auditory and vocal, which have been recuperating, are called into play. And as science enables us to localise the brain functions more exactly, the theory of education will probably receive from it further guidance as to the best way of varying school exercises.'*

5. The necessity for change varies with the age of the pupil and the nature of the work.

With very young children, effort, even when the subject is made very attractive, is soon found to flag. Lessons of from twenty to thirty minutes are sufficient in length to exercise and maintain the attention and the continued application of the infant pupil. It is true that in many of the Kindergarten occupations the interest may be continued for longer periods than those named; the exercises, however, of hand, and eye, and of language, which such occupations yield, afford in themselves considerable variation of effort throughout the entire lesson. It is a sound rule in infant teaching to avoid as far as possible the continuation of any effort up to the point of

* Sully—*Teacher's Handbook of Psychology* (Longmans).

weariness. Habits of attention are seriously endangered when frequent lapses into inattention are permitted; and the attention which is induced by the command of the teacher is liable to weaken the association of sympathy between pupil and teacher which, in infant schools especially, is essential to happy life and work.

In schools for older children there are lessons, like *mental arithmetic* for example, which are best concluded in the space of from fifteen to twenty minutes. The reason is evident, for the effort derives its chief value from the highly concentrated condition of mind which it demands, the retention of the terms of the problem, the recognition of its point, the application of the rule, the keeping in mind the separate and successive results, and the desire to be ready to announce quickly the answer;—all these exercises compressed into a few seconds at most call forth a mental effort which should on no account be long maintained. On the other hand, a *lesson in science*, whilst it requires much activity of mind, at the same time provides sufficient variety of exercise and allows intervals of comparative relaxation. The act of formulating a truth, a rule, or a principle from the consideration of the results of numerous experiments, or from the survey of an accumulation of facts and experiences, demands, it is true, an intellectual effort of a high order, viz., reasoning; this effort, however, is generally preceded by the watching of experiments (perception), or the recalling of facts and experience (memory), in both of which the effort is by no means exhausting. In upper classes, lessons in science, in grammar, and in reading may with advantage be allowed the full hour.

6. Value of manual instruction and physical training in intellectual development.

The introduction of manual instruction in the form of modelling; the cutting, fixing, and inventing of paper patterns; the forming of geometrical solids in cardboard; and the use of tools in wood and iron work, are intended as much for intellectual advance as for the development of manual skill. It has already been established in *Principles of Oral Teaching and Mental Training*, pp. 13–17, that muscular movement widens vastly the range of ideas which the senses of touch and sight supply. For example, *weight* is gauged by the amount of muscular effort required to lift any body; *solid shape* is primarily impressed by the expenditure of effort by the fingers, hands, or arms in the exercise of grasping; *size* is similarly the result of muscular effort; *distance* is to some extent determined

by the effort of the lenses of the eye to focus the image on the retina; the properties of *hardness* and *roughness*, and their opposite qualities, are felt by the amount of resistance afforded to pressure, and the distribution of the points of contact respectively. With these facts in view, it becomes clear that any systematic form of 'hand and eye' training must yield exercise of brain which otherwise would be neglected, leaving as a consequence certain structures in the organ of mind in danger of remaining undeveloped.

The following statement appears in the January number of *Nature* for 1891 :—'The prime object of manual training is to aid mental development. This is a very great and little known truth, which was first fully set forth by C. G. Leland, who states that out of 110,000 children in the public schools of Philadelphia the 200 who attended industrial art classes were the first in *all* studies such as arithmetic and geography. Thus, if we take two children of equal capacity, following the same studies in the same school, and let one of these have at the same time from two to four hours' weekly training in designing, modelling, wood-work, &c., the latter will invariably take precedence in all the ordinary school studies, so much is the mind impressed by industrial art culture.'

Examples are given of the undeveloped condition of certain portions of the brain structure when physical organs such as the hand and arm have remained inactive from birth. When, however, the same limb has been rendered inoperative from accident in adult life, the undeveloped condition of brain structure is not repeated. Hence it follows that the period of youth becomes all important for the physical exercise of the limbs if we desire a full development of the brain structure with which these limbs are connected. Skill in drawing, in writing, and in modelling, if not developed up to a certain power before the ages of 12 or 14, is not likely to attain a high degree of perfection by any amount of exercise in after life.

7. The effect of fresh air, good food, and a healthy bodily state generally upon brain activity.

(a) Fresh air.

Enter a close and overcrowded class-room, the langour felt by both scholars and teachers is at once apparent. The air, by being repeatedly respired, has lost its power of oxygenating

the blood; the organs of circulation and of respiration are depressed, weariness of body and mental inactivity follow, and as a general result very little work is attempted, and none is satisfactorily done. In strong contrast is the class at work in a well lit and thoroughly ventilated room; the teacher feels no weariness, and the children readily respond to his demands for effort. Brain power is being expended, and all the vital forces are in healthy activity. The difference is mainly due to the fact that although in both cases the various bodily organs are called into activity, there is not in the one case the necessary material for renewing the waste occasioned by effort, whilst in the other the waste is rapidly replenished by means of a copious supply of fresh air. Not only, however, is the waste material replenished, but a growth and development of the matter exercised is effected, so that there is not only power exerted, but an increase of power or capacity for work developed.

(b) Good food, sufficient in amount and supplied at the proper time.

Since the attendance at elementary schools of the poorest children has been enforced, no truth has impressed itself more completely and often more painfully upon teachers and managers than that intellectual effort is almost impossible when the body is insufficiently nourished. All the evil effects enumerated above are repeated in the cases of such children, added to which is the diverting of the attention from the intellectual work of the class to the demands which the bodily organs craving for nourishment impose upon the unfortunate subject.

(c) Healthy state of the body.

Whether from the need of fresh air, or from the insufficient supply of food, or from the failure of some of the organs of the body to perform their functions, the effects upon school work are the same. No strain should be imposed upon children labouring under any disease. In fact, a child who is known to be suffering from any bodily infirmity should have very little, if any, of its vital forces drained by the intellectual effort of the school. Rest, fresh air, exercise, and medical direction, so that the diseased centre may, as quickly as possible, be restored to a healthy condition, is the best economy in all such cases.

Mental incapacity is thus seen to be closely associated with bodily weakness. Cases, however, occur at school where there is evident deficiency in mental power. Allowance must be made in such cases. 'Obvious dulness' is not often the result of defective teaching, although such cases are not entirely unknown. Children must be placed in a class suited to their condition of knowledge, and should be promoted in accordance with their ability to make advance. Dull children need most of the teacher's help, and will make most demands upon his patience. There is a strong temptation to expend extra energy upon the bright and intelligent, inasmuch as these bring the greatest return for the teaching effort expended; the highest achievements of the teaching art, however, are not manifest so much in the brilliant successes of the able, as in the steady although slow progress made by the dull.

8. Over-work, Examinations, and Cram in relation to bodily health.

A distinction must be drawn between that judicious and systematic exercise of a physical organ which tends to its healthy development, and that irregular and sometimes overwhelming exercise which temporarily weakens, if is does not permanently impair, its action. Hard work continuously endured does not so often effect injury as do the fitful and irregular spurts indulged in in order to make up for neglected opportunities. In a school where pupils are taught under suitable conditions of building and ventilation, under a well ordered time table, affording a wisely disposed variety of intellectual effort and allowing of intervals for rest and play, there need be little fear that the school work between the hours of 9 and 12 a.m., and between 2 and 4.30 p.m., will injuriously affect the average scholar.

> An eminent medical authority, Dr. Bastian, holds that with every instinctive or intellectual acquisition new fibres and nerve cells are evolved; these changes in and additions to the physical organ call for fresh supplies of nourishment by means of a supply of blood through the arteries and capillaries. 'If,' says Dr. Crichton Browne, 'these processes be interrupted with sufficient frequency, if the strain of work be constantly shifted from point to point in the cerebrum, and if the general health be maintained at the highest pitch, then no evil results need ensue; but if these processes be too persistently kept up, if the

strain be made too continuously on one region, or if the general health be allowed to flag, the stretched vessels lose their tonus (elasticity), do not contract when the outside demand for their dilatation is no longer made, and so there is congestion of an area more or less extensive.'

9. Examinations and Cram.

Examinations are useful as a stimulus to thorough revision of work, and they further serve to bring out the ability of the pupil, especially if the questions are framed with the view of requiring an application of knowledge acquired, rather than a display of facts which have been simply committed to memory. When, however, the range of topics is very wide, and the questioning can readily be satisfied by a mere memory reproduction, the examination becomes of doubtful character, and sooner or later cultivates 'cram' of the worst kind. The annual examination need not seriously affect the bodily condition of any scholar, if there has been steady effort throughout the year; if the whole of the course has been well taught; if periodical tests under similar conditions to those imposed at the end of the year have accustomed the scholar to the somewhat novel experiences of the examination day; and especially if, by frequent preliminary tests, a confidence has been acquired by the scholar in his ability to stand successfully the final test—then the examination may be met without ill effects of any kind. When, however, work has been done in a hurried way, the effort of nine months crowded into three, the committal to memory of large stores of badly digested matter taken the place of thorough knowledge—then it is that the examination is approached with much nervous anxiety, and is passed through with a vast expenditure of effort, frequently followed by mental worry and bodily collapse.

10. School Punishments.

These relate to school discipline rather than to health in school; still, as they depend in the main upon bodily conditions and mental feelings, a few words as to their effect upon the health of the scholar will not be entirely out of place. The value of any punishment largely rests in the awe it inspires in the minds of the recipient and those surrounding him. Excessive and frequent exercise of the emotion of fear may in time become injurious to bodily health, as it certainly is

destructive, during the time it lasts, of serious intellectual effort. Corporal punishment, deprivation of food, as when scholars are kept at school during the dinner hour—these are punishments directly affecting the body, and whilst they are in some cases necessary, they should in no case be excessive so as to bring about evil consequences of a more or less permanent character.

11. Value of physical exercises in school.

Physical exercises in school work are valuable for the following reasons:—(1) The exercises are a direct relief from those which are purely intellectual; (2) The organs exercised are developed, and the general tone of the body is thereby strengthened; (3) The exercise of the various limbs tends to the full and complete development of the various structures of the brain. A fourth advantage, viz., that of moral restraint, is claimed by some of the educational authorities in charge of large communities of youths in our public schools.

The two first reasons given above do not need further comment. The connection between physical exercise and the most complete development of the brain structure has already been referred to under the heading of 'Intellectual development and physical training.' In addition to what is there written it may be stated that, 'the view hitherto taken of exercise in relation to education has been much too narrow. The idea has been—and as far as it went it was correct—that exercise is useful in education because it sustains and improves bodily health, by expanding the lungs, quickening the circulation, shaking the viscera, and promoting growth in the muscles and bones. But we now know that, besides doing all these things, exercise may be made to contribute to brain growth, and to the symmetrical development of the mental faculties.'

We may now apply the medical opinion quoted above to the following school operations:—the muscular exercises, for example, of the hand in drawing, painting, writing, modelling, holding and guiding a tool, such as a hammer or a chisel; all these exercises are dependent immediately upon muscular movements; but these muscular movements are under the direction of nerves controlled from certain centres, termed *motor* centres. By repeated action these motor centres develop, just as muscle is seen to develop, and they manifest a growing aptitude for the work they are called upon to perform. Thus skill in the manipulation of pen, pencil or tool is ultimately connected with a development

of the motor centres of the brain. No part of the brain can thus be developed without the entire structure being benefited. Briefly stated, the absence of all physical exercises means the waste and decay of certain areas of brain growth, and a general depreciation of the whole; whilst vigorous and healthy muscular exercise is associated directly with the development of vigorous and healthy brain structures connected with the muscles so exercised, and indirectly with the heightening of brain power as a whole.

The connection between physical exercise and moral restraint is not difficult in certain cases to establish. Courage, fortitude, determination, ready obedience, the exercise of will in continued effort and under sudden emergencies—all these virtues are developed by the English games of football, rowing, running, and cricket. The connection between physical exercise and the restraint of appetite and of the tendency to natural passions is not so easily recognized. It is an established truth in the minds of most educators of youth that wherever intellectual strain is excessive, and physical exercise is out of reach, there is a tendency developed to have recourse to the less healthy and, it may be, less moral conditions for change and recreation. On the other hand, by vigorous sport animal force is no doubt used up, and the innocent pleasures of rest and of the partaking of food are thereby induced.

1. **Simple exercises.**

Temporary relief during intellectual effort is afforded by movements of hands and arms, by standing and sitting, by marching and singing. These, or some of them, may be taken at intervals during the progress of a lesson, or at the change of lessons. A play-time of 15 minutes at a three hours' meeting of the school is allowed; it should be passed in the open air and in games, which not only secure relief from intellectual strain, but yield some stimulus to the heightened circulation, and the consequent renewal of the blood.

2. **Systematic Drill.**

Physical exercises specially devised to give tone to the muscles and to secure the healthy development of the bodily frame are supplied by out-door games such as rowing, cricket, swimming, walking, and running. Military and Swedish drill are systematic movements which are intended to develop harmoniously the muscles of the various organs of the body. Games have the great advantage of an accompaniment of heightened spirits and unrestricted enjoyment. Drill has the advantage of being a systematic series of movements devised so that no important muscular organ shall be neglected.

SCHOOL EPIDEMICS.

1. Taking Cold.

Although these are very common experiences, it cannot be said that we have anything like complete knowlege of their origin. Sometimes a bad cold is 'taken' without the subject being able to account for it in the slightest degree. In some of these cases it is very probable that it has been 'taken' by infection from some other person. There are, however, conditions which are well-known to be conducive to 'catching a cold'; among there the following belong to school life—(1) draughts in the school; (2) over-heating, occasioned by running to school and throwing off a great coat upon arrival, and thus cooling too quickly; (3) taking cold by rushing out of a warm room after an exhausting day's work and loitering on the way home; (4) remaining for some time in vitiated air.

By way of precaution it would be well to notice any complaint as to a draught; a child seen to be over-heated by running to school, should be told to fetch his coat, and thus cool slowly; when fires are first lighted in the autumn, a word of warning should be given to all children against loitering immediately after leaving the school-room.

2. Infectious diseases.

Danger to a large community attending an elementary school often arises from the presence of children sickening for an infectious disease, or from their return to school after an attack and before all danger of infection has disappeared, or from children being sent from homes in which there are cases of such diseases. The following table sets out in a concise view the chief facts necessary to guard school children from the ill-effects arising from the dangers enumerated above. The recently enacted statute requiring every medical practitioner to notify to the 'Sanitary Authority' any infectious disease that may come under his observation will tend to prevent the spreading of these diseases in schools. The authorities of a school will do well to make enquiries of the local sanitary authority respecting any cases about which their suspicions have been aroused.

TABLE OF INFECTIOUS DISEASES.*

Name of Disease	Symptoms	Duration of infection	Quarantine (time after which a scholar who has been exposed to disease is safe)
1. Scarlet Fever or Scarlatina	Very feverish skin, red punctiform rash on chest, and vomiting	After all peeling of skin has ceased, *i. e.* from five to eight weeks	Fourteen days
2. Measles	Apparent severe cold in the head, red rash on the face and hands after three days, eyes very watery, with difficulty in facing the light	When cough and peeling of skin has ceased—from two to four weeks	Sixteen days
3. Diphtheria	Extreme languor and sore-throat, with white patches on the back of the throat	After fourteen days	Twelve days
4. Small Pox	Pains in the loins and vomiting. In two days a pimply rash appears	After every scab has disappeared	Eighteen days
5. Whooping Cough	At first a cough resembling that of an ordinary cold, followed by a prolonged cough terminating in a peculiar whoop, and sometimes with vomiting	Various—say when whooping has ceased	Twenty-one days
6. Mumps	Hot feverish condition with pains and swelling under the jaw and towards the ear	Fourteen days	Fourteen days
7. Typhoid Fever	High fever with diarrhœa	Four weeks	Twenty-eight days

From the above table it is evident that vomiting, a red rash, and a feverish skin are symptoms which cannot be disregarded; they may indicate fever, measles or small pox. Children with some or any of these symptoms are not in a fit condition for school work. They should be sent home. A very useful test in cases of apparent fever is to place an unframed thermometer beneath the tongue for a minute or so; if the temperature is 100° Fahr., or above, medical advice should be obtained. The normal temp. is 98·4 Fahr.

* Compiled mainly from Dr. Clement Duke's article in the *Book of Health* (Cassell).

3. Contagious school diseases.

Certain diseases of the skin are readily communicable amongst children. It is very important that their appearance should be readily detected, and the children so diseased either isolated or kept at home until all danger of contagion is over. Amongst the more common of these diseases are **Scabies** or Itch and **Ringworm.**

The first of these diseases shows itself in small patches of watery vesicles clustered upon the finger joints. They are attended by a constant itching, the attempt to relieve which frequently develops unsightly sores. The disease can be cured in a few hours by the use of the sulphur bath. The clothes of the patient should be thoroughly disinfected or burnt. *Ringworm* is much more persistent. A little iodine liniment (not tincture) stops the progress of the disease when it manifests itself in ring-like patches on the forehead, neck or face. The patch should be painted over once and the skin allowed to peel. In many cases this will be sufficient. When ringworm appears on the head and amongst the hair, it frequently becomes deep-seated and very difficult to cure. It may be detected in the earlier stages by the presence of patches of scurf, accompanied by short hairs. The latter must be removed by a pair of small tweezers (the extraction causes no pain, as the hair roots are quite loose). Medical authorities apply iodine liniment, blisters, and sometimes a strong preparation termed oleate of mercury. These remedies cause considerable irritation of the scalp, and should be applied under the direction of a medical practitioner.

4. Disinfectants.

These are agents by which the poisonous matter from any communicable disease may be changed so as to lose its dangerous qualities. When infectious diseases are known to be prevalent in any school district, it is necessary to make free use of disinfectants in the school-room. *Chloride of lime* is frequently used for this purpose. Its usefulness is occasioned by the chlorine evolved. The smell and the irritation of the throat which accompany its use frequently produce violent coughing, and in this way lessen the value of this disinfectant in school-rooms; it may, however, be used freely in lavatories. *Carbolic acid* is another common disinfectant. It should be used in a dilute form, *i.e.*, about 98 per cent. water; it may then be sprinkled over the school floor. *Condy's fluid* is a

solution of potassium permanganate; being inodorous and non-volatile it does not purify the air, but is valuable in disinfecting linen, and for pouring into drains or other contaminated vessels. *Sanitas* is a very agreeable disinfectant, and is in favour for use in the sick room.

For purposes of disinfection, the clothes of a person suffering from a contagious disease may be baked in an oven at a temperature of not less than 240° Fahr. Boiling in water charged with some of the above disinfectants is also of service. The most effective method of preventing the spread of disease is to burn the clothing of a patient.

5. Closing the school on account of prevalent infectious disease.

The managers of a school must at once comply with any notice of the sanitary authority of the district in which a school is situated, requiring them for a specified time, with a view to preventing the spread of disease, either to close the school or to exclude any scholars from attendance; but after complying they may appeal to the Department if they consider the notice to be unreasonable. With respect to Article 83 (New Code), which requires a day school to have met not less than 400 times each year, 'if a school has been closed during the year under medical authority, or for any unavoidable cause, a corresponding reduction is made from the number of meetings required by this Article.' From the above extracts, taken from the new Code of Regulations, 1890, it is evident that the closing of a school, on account of the prevalence of an infectious disease in any district, rests primarily with the sanitary authority of the district, and any order 'to close' issuing from such authority must not be disregarded.

SCHOOL ACCIDENTS.

General view ot circulation.

In order to gain a satisfactory notion of the best mode of treating some of the common forms of school accidents, such as cuts, wounds, and bleeding of various kinds, it will be

necessary to consider, in brief and simple form, the main feature in the circulation of the blood together with the chief organs of the body engaged in the process. The **heart** is the centre of all circulatory movement, the blood being propelled from it through the arteries into those very minute vessels called *capillaries* which ramify through the various tissues of the body. Afterwards, the blood, having lost some of its oxygen and gathered waste material from the tissues (chiefly CO_2), collects in other capillaries, which unite together, forming the veins through which the now venous or impure blood is returned to the heart. A second circulation now takes place, in order to bring the impure blood from the heart to the lungs, where, by being conducted throughout a fine network of capillaries, spread over the air-cells, it becomes oxygenated and purified from the waste products (chiefly CO_2) before referred to. This purified blood is then returned to the heart, to be propelled again through the arteries, capillaries, and veins. as before described.

Arteries and Veins.

The vessels conducting the blood from the heart to the various organs of the body are termed *arteries*, and it is at once evident that the arteries leading to all the organs except the lungs* will contain pure arterial blood. This blood is of a bright red colour, and in cases where any of these arteries are cut the bright red blood contained in them issues from the cut in a series of jerks, answering to the beating of the heart.

The *veins* begin in the capillaries, and carry the blood back from all parts of the body to the heart. This blood in all except the pulmonary vein is impure, is darker in colour than the blood in the arteries, and in cases where any of these veins are cut the dark impure blood issues in a steady current. The structure of the veins can be distinguished from that of the arteries in the following way :—The arteries have stronger walls, and remain open when severed, whilst the veins collapse when cut ; the veins further contain valves which open towards the heart, thus allowing the blood to move forward readily enough, but should any backward movement commence these valves immediately close, fill up the vein passage, and thus stop all further backward movement of the blood.

* The pulmonary artery leading from the heart to the lungs contains impure blood ; the pulmonary vein, which carries the blood back to the heart, contains the blood which has been purified in the lungs.

The *capillaries* form a network of very fine vessels, spread throughout all the organs and most of the tissues of the body. These unite the small arteries with the small veins. So closely packed are these capillaries that the slightest scratch beneath the surface of the skin causes them to bleed, the blood in this case oozing out very slowly.

How to stop bleeding from Arteries, Veins, and Capillaries.

(a) Arterial hæmorrhage.—This is distinguished by the bright colour of the blood, by the copious flow, and by its flowing in a spurting manner. This form of bleeding is most dangerous, and if from a main artery, medical aid must be sought as quickly as possible. Until this can be obtained the limb should be held well up, and a pad, made by enclosing a stone or a piece of wood in a pocket-handkerchief, bound tightly over the wound. If the operator knows the course of the chief arteries, it is best to place the pad a little higher up the limb than the wound, and towards the trunk. Arterial bleeding may sometimes be stopped by bending the joint of the injured limb above the wound.

(b) Venous hæmorrhage may be detected by the dark colour of the blood and the steady nature of the flow. A pocket-handkerchief tied tightly over the injured part is generally sufficient to stop bleeding. The limb in this case also should be kept elevated, and where the bleeding is severe a pad may be tied so as to press against the vein on the side away from the trunk.

(c) Bleeding from the capillaries is easily dealt with, as nature generally provides a pad in the form of a clot.

Treatment of wounds.

The introduction of sharp-edged tools in the manual instruction classes makes a knowledge of the treatment of wounds of practical value. The following are a few rules for guidance:—

(a) Wash from the wound with clear cold water any dirt, broken glass, or other foreign matter. Unless this is done the wound will heal badly.

(b) Bring the edges as near together as possible, and after applying a little Friar's Balsam keep in position by means of

sticking-plaster. The strips of sticking-plaster must be narrow, and not applied too closely together.

(c) Place the wounded limb in such a position that it will not be necessary to move it, and thus disturb the connections between the edges of the wound.

There is danger in treating wounds on the scalp on account of erysipelas sometimes ensuing. Punctured wounds, such as those arising from a careless boy putting an open knife into his pocket, should have medical treatment.

Fainting in school.

This may arise from a sudden blow on the head, or from failure of the heart's action on account of some excitement or over strain, or from the closeness of the air, the blood being insufficiently oxygenated to maintain the organs of the body in vigorous action. Dr. Wetherby, in his *Ambulance Lectures*,* gives the following rules to be carried out in all cases of insensibility :—

'1. Place the body on the back with the head raised.
2. Undo all the clothing round the neck.
3. Allow a free circulation of air round the patient.
4. Remove the patient as quickly as possible to the nearest hospital or medical man's house.

'In cases of fainting we should at once lay the patient flat, with the head raised to the same level as that of the body, so as to enable the blood to easily circulate through the brain. It is the want of power in the heart to propel the blood to the brain that has caused the insensibility. Eau de Cologne, sal volatile, or ammonia may be used, but the important thing to remember in these cases is the question of position of the head and body.'

By attempting to pour anything down the patient's throat whilst he is insensible we may cause choking.

The several kinds of fits are sometimes difficult to distinguish. The following features of each may serve as a rough guide :—

Epileptic fits are accompanied by convulsive spasms of the limbs, congested face, foaming mouth, and sometimes the biting of the tongue.

* *Ambulance Lectures.* (Griffith, Farran & Co.)

Simple fainting fits, by extreme pallor of the face and lips.

Hysterical fits (common amongst girls), by the patient being conscious, as shown by flinching when the eye ball is touched.

Drowning.

The physical exercise which swimming affords, and the encouragement this excellent form of recreation is receiving, are sufficient reasons for a few directions to those who may have to deal with persons apparently drowned. In all such cases artificial respiration should be attempted in the following way :—

1. Remove the upper clothing, cleanse the mouth from any impurities, and keep the tongue drawn forward.
2. Raise the head slightly by means of a pillow composed of the removed clothing or otherwise.
3. Grasp the patient's arms near the elbow, and draw them straight out behind his head.
4. Then move the arms forward until they are pressed against the sides of the patient's chest.

   These operations should be repeated at intervals of about four seconds, but not faster, thus simulating the natural process of respiration.
5. Continue to move the arms as directed above until the patient begins to breathe naturally, which may require from 15 to 20 minutes or even half-an-hour.
6. The temperature of the body should, as far as possible, be maintained by the use of blankets, and the circulation induced by freely rubbing the legs and body.

Choking.

Children should be warned against throwing small solid substances into the mouth. Should, unfortunately, a pea, cherry stone, or marble, become lodged in the upper part of the windpipe, two things only may be done, viz.—(1) Place the finger on the back of the throat to induce vomiting, in the hope that the body may thus be dislodged; (2) Send for the nearest doctor immediately.

Stings.

Stings from wasps in the summer and autumn seasons are frequent. Children should be cautioned against drinking any

sweetened material out of a bottle without first ascertaining that it is free from wasps. When a sting is followed by swelling and inflammation, it should be first withdrawn by pressing over it a watch-key; a little sal volatile or laudanum application will then afford relief.

Burns and Scalds.

Where fire-guards are employed, these do not frequently occur in schools. Out of school the number of deaths from these causes is very numerous. In all serious cases it is necessary to procure medical advice as quickly as possible. The following directions may be followed until skilled aid arrives:—

1. Remove the clothing, except where it is found to adhere to the skin.
2. Cover the surface with some material which will exclude the air, *e.g.*, wadding, flour, oil.
3. Soak a linen cloth in a strong solution of bicarbonate of soda, and apply to the parts affected.

Foreign bodies in the eye and ear.

Flies and dust particles frequently intrude upon the eye, causing for the time considerable irritation. If the eyelid be closed, a large amount of moisture at once collects from the tear glands, and sometimes in sufficient quantity to carry away the offending material. In order to assist in the removal of these foreign substances, the lid may be gently raised by the middle lash if the substance is above the eyeball, or by the lower lash if it is below the eyeball. The particle must then be carefully removed by some soft material. Should the substance not be seen by this means, a little castor oil dropped into the eye will give relief, the eyelid being kept closed and motionless. Lime in the eye causes great pain; vinegar well diluted with water may be used, and after the particles have been removed a little castor oil will lessen the irritation.

The ear needs very skilful treatment. When a short piece of pencil or other body has been inserted beyond easy reach a pair of small tweezers may be used to withdraw it; care, however, must be exercised not to injure the tympanum. In the latter event, inflammation may set in and very serious effects ensue.

If the body be small, a little warm water will sometimes loosen it and cause it to fall out when the ear is held downwards and a sharp, but not hard, box is given on the other ear.

There are minor accidents which occur in school experience, such as a bruised forehead from a fall, a crushed thumb or finger caused by the working of a door or a desk. An application of arnica is useful in the former case; in the latter the teacher should take the limb in his warm hand, and gently bring the crushed member back to its normal shape. Whilst this is being done the child's attention should be diverted as much as possible, and a little warm water brought for after application.

SCHOOL ORGANIZATION.

Introductory.

THE subject of school organization includes (*a*) the school building, with its site, plan, and methods of warming and ventilation,* (*b*) school furniture and apparatus, (*c*) classification of scholars, (*d*) school staff, (*e*) school curriculum, (*f*) time tables, and (*g*) registration. In the following chapter it is proposed to present the knowledge requisite for a student teacher to state and illustrate the modern modes of organizing a school and at the same time to recognize the educational value of each detail of school organization.

BRIEF REVIEW OF RECENT SYSTEMS OF SCHOOL ORGANIZATION.

English schools to-day present considerable varieties of organization, the outgrowth of the different systems which have been introduced in order to solve the problem of providing effective teaching at a moderate cost. When these systems are reviewed in the order of their establishment, they present the following series: (1) The *individual* system, characterized by the almost total absence of organization and exemplified in the dame schools of England up to 1870. (2) The *monitorial* schools of Bell and Lancaster, with their large school rooms filled with small groups of children under unskilled tuition by monitors but slightly removed in capacity from the children they taught. (3) The schools of the *Glasgow system*, in which Mr. Stow placed his trained adult teachers, each being considered com-

* The subjects of Warming and Ventilation are taken under School Hygiene.

petent to teach and train from 80 to 120 children. (4) The *tripartite* system. (5) The *mixed* or *pupil teacher* system, which attempts in various ways to combine the advantages of both the monitorial and the training organizations; and (6) the *class-room* or *Prussian* system, in which each class of from 60 to 80 scholars of nearly equal attainments is taught in a separate room by an adult certificated or assistant teacher, the whole school being brought into harmonious and successful working under the direction of an experienced and highly qualified head-master. It is now proposed to state in fuller detail the character and work of each of these systems of school organization.

1. The Individual system.

(*a*) *How it arose.*

Before the nation had become impressed with the value to the State of every child in it receiving a sound elementary education, the philanthropy of individuals and of religious communities had, by the establishment of grammar and charity schools, done most of the elementary education of the country. The schools thus established were taught, for the most part, on the *individual* system.

(*b*) *Mode of working.*

The master conducted the entire school. He occupied a raised bench during the greater portion of each day, whilst his pupils were seated in desks or benches. These were generally arranged round the walls of the school-room, a nail or other mark indicating the place each scholar was expected always to occupy. In these places the pupils wrote copies set by the master, worked sums out of their books, and were in turn called up to the master's desk to read individually, the teacher at the same time examining their writing; finally, they filled up their time with learning by heart scripture texts, cathecism answers, rules of grammar, &c.

(*c*) *Value of the method.*

1. Scholars with an aptitude for learning acquired the habit of independent effort; a few of exceptionally bright intellect made good progress and became well-informed and able men.
2. The method allowed progress according to the aptitude of the individual pupil; none were kept back on account of their duller school-fellows.

3. The direct personal contact with the teacher, provided by the system, gave character to certain schools, according to the teacher's special knowledge or skill; thus one school became remarkable for its handwriting, another for its arithmetic, and so on.

4. The relations between the teacher and his apt pupils were frequently of a very cordial and stimulating nature.

(*d*) *Wherein the system was weak.*

1. It did not provide sufficient stimulus to the average and the dull scholar.

2. The teacher's time and talents were used up in repeated correction of the same errors.

3. The stimulus which the force of collective effort yields was not utilized.

4. As the teacher's attention was concentrated upon one boy at a time, the rest were either indifferent or noisy, and in order to maintain discipline severe punishments were frequent.

2. The Monitorial System.

(*a*) *How it arose.*

It is customary to speak of Bell and Lancaster as the originators of the monitorial system of instruction, and it is true that these educationists had much to do with its introduction into English schools; the idea, however, was embodied in the systems of education elaborated by Comenius, a Moravian, 200 years before, and by Pestalozzi in 1798. The latter, describing his methods of instruction, writes as follows: 'Children became the teachers of children, they endeavoured to carry into effect what I proposed, and in doing so they themselves frequently traced the means of execution. Seeing that I had no assistant teachers, I placed a child of superior capacities between two of inferior powers; he taught them what he knew, and they learned from him what they knew not. They sat side by side of each other; the life which was awakened within them and which had taken hold of their minds carried both teachers and learners forward with a rapidity and cheerfulness which this process of mutual enlivening alone could produce.'

In order to understand the organization of some of our National and British Schools, it will be of service at this point to give a brief account of the systems of instruction adopted by Bell and Lancaster.

Dr. Bell, when in India, was strongly impressed with the value of mutual instruction* by seeing children in a native school engaged together in writing upon sand. He forthwith tried the experiment in his own institution at Madras, a school of 200 boys. This school was divided into small classes taught by teachers whose ages varied from seven to fourteen years. The principle underlying the entire system is the power possessed by all of both receiving and imparting knowledge. This power, when exercised by minds of nearly equal capacity, is held to produce the following two-fold effect, viz.—(1) The youthful teacher presents knowledge in the form in which it is readily grasped by the learner. (2) The difficulties in acquisition which the learner experiences are also felt by the teacher, the latter, after seeking advice and help from his superior, being well adapted to present the same explanation to his fellow learner.

A common fault in the teaching by means of adults is their inability to assume readily the state of their pupil's mind. When, however, this weakness is overcome it is found that the effort of making clear to another is of great value to the teacher's intellectual hold of the subject he teaches. In harmony with this view of the advantage of mutual instruction are the following experiences:—

1. A child brought up amidst other children is of brighter intelligence than a child kept amid adult surroundings.
2. Teachers themselves frequently find the learning of a new subject lends especial value to the effort of teaching it. This arises from the interest which all new knowledge awakens in the teacher, and from the familiarity with the chief difficulties which the subject presents, together with a facility in dealing with them, acquired by the teacher's own experience in recently overcoming them.
3. 'The best teachers are always learners.' This is a saying based on the same principle as that which inspired the mutual instruction system. To be constantly on the path of acquisition, and thus to be keeping, by experience, the modes by which knowledge is gained and retained in view, is a most healthful condition for the successful guidance of others in the ways of knowledge.

(*b*) *Plan of working a school on the monitorial system.*

The master or superintendent conducted the entire school through the agency of the scholars themselves; the school was

*The term which is given to the instruction which pupils receive from their fellow pupils.

divided into small classes containing scholars of equal proficiency; the children were sometimes paired off—the inferior boy being taught by the superior; to each class was attached a teacher, or, when the class was large, the teacher was provided with an assistant; in large schools a superior teacher was placed over every three or four classes, and a head teacher over the whole; the class teacher was always present with the group, and responsible for its order, behaviour, diligence and improvement; the work of the head teacher was to direct and stimulate the entire work of the school through his subordinates rather than to teach classes himself; he taught his monitors out of school hours; the classes were arranged either in semi-circles or squares on the floor, or placed in desks round the room; constant place-taking formed one of the chief inducements to exercise; an elaborate system of marks and of registration was introduced.

(*c*) *What can be stated for the system.*

1. It was cheap, and brought a form of education within reach of the poor.
2. All were kept employed under direction, instead of working during the greater part of the day without oversight as in the individual system.
3. System and arrangement were required in the disposal of the work of each hour.
4. The numerous classes allowed a rapid promotion of really clever children, and the constant appeal to emulation stirred into effort many unable to answer to higher appeal.
5. The system did very well with young children, and when a school commanded a good supply of superior pupils the effect of these upon the character of the whole school was stimulating.

(*d*) *The weakness of the system.*

1. The learner was not sufficiently inspired by direct contact with a superior mind.
2. Teaching was mechanical, lessons being heard, and exercises performed, and but little love of learning developed.
3. Constant and continued appeals to rewards and punishments (the lower incentives to effort) were necessary, in consequence of the slight directive force of the youthful teachers.
4. Whilst all in the school received some advantage but few became really efficient.
5. Some parents objected to their children spending their time in teaching, and others objected to their children being taught by their schoolfellows.

6. When a school was weakened by the removal of its brightest scholars, it became difficult to raise it from the dead level to which it had fallen.

The following account of monitorial instruction by an Inspector is taken from the Blue Book report for the year 1846.—'To return to the monitors themselves: They are generally very young—rarely thirteen years of age. I have found a boy of nine teaching children of his own age. But their average age in boys' schools is eleven. What, and how shall they teach others? They are ignorant of the subjects taught. They go heavily and unlovingly to it. A card in one hand, the other in their pockets, they go singly or in pairs to their work. What is it?—a reading lesson, seldom with any questions, but with spellings afterwards. I have often stood by in silence and heard the grossest blunders made in both—words mis-called, left out, half said, others substituted for them. The monitor takes no notice. He frequently does not recognise the blunder if he hear it. In general he does not hear it; his thoughts are elsewhere. Or, if he be, as is at times the case, a sharp lad, and attentive as a teacher, then he is almost invariably too sharp and too impatient of the slowness of his class. He corrects an error in a rough assuming tone, as if he had rather expose the ignorance than guide the helplessness of the learner. At such an age, and with so little self-knowledge, it can hardly be otherwise.'

3. The Training or Glasgow System. (Stow.)

(*a*) *How it arose.*

After a few years' experience of the monitorial system it became evident that whilst the method might be commended for its cheapness, and for bringing a modicum of education within the reach of the masses, it was at the same time accompanied by many evils. 'Monitors,' says Mr. Stow, 'may teach facts they already know according to the *rote* system, such as the sounds and names of the letters and of words, but they cannot work the facts repeated into the minds of their classes. Most unquestionably they cannot morally train. They do not possess the felt authority requisite, and they have not the necessary experience to handle with delicacy the varied and ever-varying shades of the moral affections and habits. Monitors may be employed under the Training System as well as under any other, with the firm conviction, however, that in exact proportion as we employ such substitutes we are destroying the efficiency of the system. Our aim, viz., the cultivation of the *whole man*, is too high willingly to place monitors as the teachers and trainers of

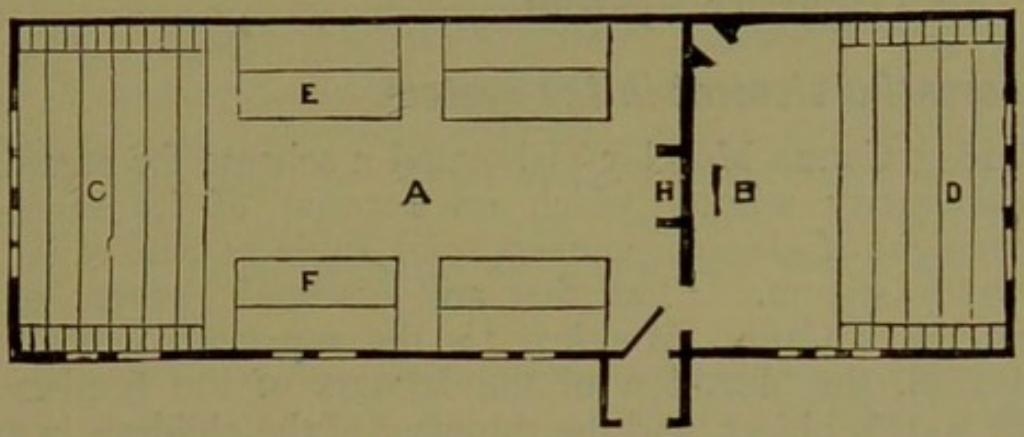
youth if we can get masters. The low standard of a monitor, even intellectually, does not present a sufficient point of aim to their junior pupils.'

Mr. Stow appears to have 'unexpectedly discovered' his principle of intellectual and moral training; for after establishing a number of local schools in order to teach from 20 to 30 children on Sabbath evenings, he says, 'I found (after five years of effort) I had been ignorant of the important fact that *teaching is not training*, and that the *sympathy* and example of companionship are more influential than the example and precepts of any master.' Mr. Stow recognised that child nature exhibited a sympathy for, and in accord with, its surroundings; that the companionships of the six days in the week (working through this principle of sympathy) were more powerful for evil than the associations of a school for one day were powerful for good; that in order to secure intellectual and moral training, it was necessary to place children together, from the infant period, in schools under such skilful direction; that their influence over each other should be good and continuous; and finally, that the trainer's best teaching efforts are those which arouse the efforts of the scholars to do and to acquire for themselves.

(*b*) *The chief characteristics of the 'Training System.'*

Amongst the distinctive features of the Glasgow system are the following:—The collective teaching of large groups of children, and their classification into Infant, Junior, and Senior departments. The training of teachers recognised in the establishment of Normal Colleges, Practising Schools, and Criticism Lessons. The grouping of large classes for oral instruction; hence the demand for large school-rooms and for commodious galleries. In order to stimulate the intellectual activity of the children thus collected together, the teacher cultivated the art of '*picturing out*.' Questioning was mainly relied upon to guide the thought and gauge the progress of the pupil; and answers of the *elliptical* and *simultaneous* type were encouraged, so that the continuity of expression necessary for 'picturing out' should be interfered with as little as possible. Moral training was secured by direct teaching in Bible lessons and upon the observed conduct of children when free in the 'uncovered school,' *i.e.*, the play-ground. Physical training was obtained by providing play-grounds fitted with swings, &c., and

by systematic drill movements in school. Schools were mixed—the intellectual aptitude of the girls being thereby brightened, and the rough nature of the boys softened.



Plan of a school organized on the Glasgow system. A = large school-room. B = class-room. C = gallery. E, F = desks.

(c) Features in the Training System of permanent educational value.

1. The employment of skilled teachers whose influence over the children is direct and continuous.
2. The substitution of training, wherever practicable, for telling.
3. The development of the teaching art, so that the teacher not only imparts knowledge but seeks to increase intellectual and moral power.
4. The physical, intellectual, and moral powers to be simultaneously educated; so that when thus developed they may act and re-act upon one another with advantage to all.
5. The great value for training of the independent and self-directed effort of the pupil.

(d) Weak features in the system, most of which have disappeared.

1. Individuals were overlooked, especially the backward and slow.
2. Elliptical and simultaneous answering deceived the teacher as to the actual intellectual condition of many members of his class.
3. In small schools the classification was made on too wide a basis, and thus the teaching was liable to be above some and below others.
4. It made very heavy demands upon the teacher's powers of physical and intellectual endurance, and many broke down under the strain.

The following are some of the features in Mr. Stow's system which are receiving increased attention:—The necessity for early or infant training, and that this early training should mainly be by the immediate and oral direction of skilled teachers; the great value attached to object teaching; the importance of 'doing for the purpose of gaining' on the part of the pupil;

and the high value placed on the formation of good habits in intellectual effort and in conduct.

4. The Tripartite System.

The essential element in the system.

In 1845 Canon Moseley elaborated a scheme for organizing an elementary school, which on account of its three-fold arrangement of classes, teachers, and subjects, was called the *Tripartite* system. 'The first and essential element of the system,' says Canon Moseley, 'is the separate room for oral instruction, the devotion of the labours of the head-master chiefly to this object, and the throwing of the children in three great divisions (of 50 or 60) successively into that room for an hour twice a day for the purpose of that instruction. Every other element of the plan admits of modification, but not that. In all that requires the independent exercise of judgment and discretion in the business of instruction—in all that involves the sanction of religion, and consideration of moral responsibility, and thus needs to be presented to the mind of the child with the gravity and the authority which can only be brought to it by the mind of an adult teacher, and in all that concerns the development of the judgment and intelligence of the child—the direct interference of the master in its education is necessary to any useful result, as well in reference to the youngest child in the school as to the oldest.'

Mode of working.

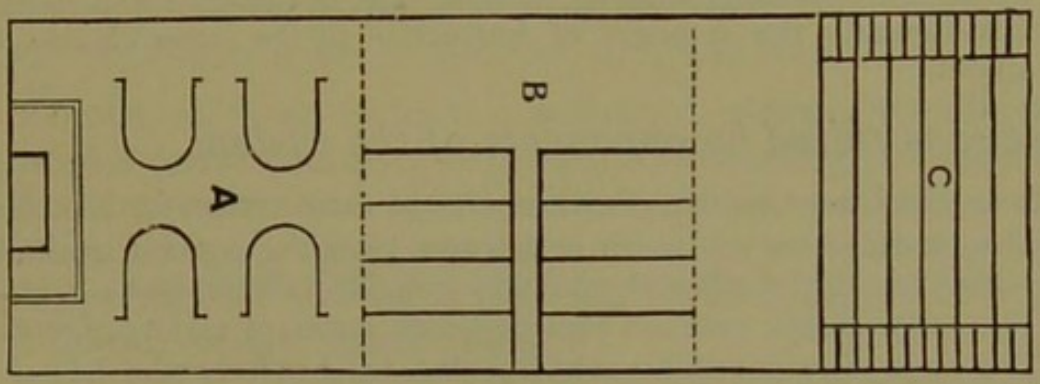
'I will suppose,' continues Canon Moseley, 'the subjects of instruction in elementary schools to admit of the following division:—

'1. Those which are properly subjects of **oral instruction**, viz., **Biblical truths, Object lessons, Geography, Grammar, Principles of Arithmetic,** &c. Lessons in these subjects to be given by the master to children arranged on a gallery.

'2. **Reading,** (*a*) in drafts under a monitor, (*b*) in classes under a mistress.

'3. **Writing, Slate Arithmetic, Drawing, Committing to Memory,** under a pupil teacher or an assistant.

'For these separate subjects I suppose separate localities to be assigned, *e.g.*, (*a*) a gallery and a separate room for oral instruction, (*b*) an open area or floor for the subdivisions receiving instruction in reading, and (*c*) parallel desks arranged in groups for writing and other silent work. Corresponding to these three distinct branches of instruction I propose that the children be formed into three equal divisions; and that when the morning devotions and the Bible lessons have terminated, each division passes to one of these localities, and receives instruction in those elements of knowledge which are proper to that locality.'



A = drafts for reading, &c. B = desks for writing. C = gallery for oral teaching.

The above is a plan of a school organized on the tripartite system. Sliding partitions with their upper portions glazed may be used instead of curtains to separate the three divisions of the school, A B and C respectively.

The following is the copy of a portion of the time-table suggested for use in the above school :—

Time.	Gallery.	Desks.	Floor.
9 - 9.30	I. Bible lesson.	III. Writing on slates.	II. Reading.
9.30 - 10	II. Reading Exam.	I. Writing.	III. Reading.
10 - 10.30	III. Reading Exam.	II. Writing.	I. Reading.

Advantages claimed for the system.

1. In contrast with the 'monitorial system' it brought every child under the influence of the head teacher for one and sometimes for two lessons per day.

2. In contrast with the 'training system' it provided a considerable amount of individual instruction.
3. The continued exercise in teaching one set of subjects made the subordinates skilful within a limited area.
4. Children were brought into contact with different minds throughout the day.

The following advantages are claimed for the system by its author. 'I have,' says Canon Moseley, 'a confidence in recommending the tripartite plan in places where the form and arrangements of the school are adapted to it, and where there is a well-instructed and efficient teacher. It has been found, in the first place, to be attended with less labour and excitement to the teacher than the old (monitorial) plan; secondly, it is more successful in teaching the technical branches of instruction—reading, spelling, writing, and arithmetic; and thirdly, it raises greatly the standard of instruction in the lower classes of the school.'

Objections raised by opponents of the system.

1. It required the retention of children in the same classes for all subjects.
2. The teacher was too much withdrawn from the general work of the school to allow of efficient oversight over his subordinates.
3. The subordinates were not provided with sufficient variety of work.
4. The sense of responsibility which a class teacher feels who has charge of his scholars for all subjects was weakened, as was also the stimulus arising from a feeling of common interest between teacher and taught.

5. The Pupil Teacher System.

It will not be necessary, here, to give a description of this pre-eminently English system of instruction. It is a growth, and, as such, is a natural development of the systems which preceded it. It approaches the monitorial system in that the pupil teacher is taken from the ranks of his school-fellows, but it departs from the old system (1) in delaying to a later period the engagement of the pupil in teaching, (2) in paying for his services, and (3) in opening out a teaching career, instead of merely offering an unpaid and temporary employment. It accepts from the Glasgow system the idea of a professional training, and it works out the idea in a form which for completeness the training system itself never attempted.

For the system it is urged—

1. It is natural. Boys and girls in their own schools, after acquiring their knowledge under the skilled direction of a trained teacher, are likely to be more apt imitators of the

same methods of teaching than those who have acquired other knowledge and in different fashion.

2. Education is an art, and although its methods rest for success on a compliance with the laws of mind, still, as an art its methods may be imitated by young people before they are able to understand the grounds of their action. This early imitation of good models is necessary, in order to develop the aptitude necessary for the very complex work of imparting knowledge, awaking thought, and ruling a class.

3. As the modes of thought and of speech necessary for successful teaching are peculiar, it is necessary that these should be acquired in youth before other modes of thought and of expression have become set and habitual.

4. Education, in so far as it is scientific, cannot be understood until a certain range of experienced knowledge of successful teaching methods has been acquired; and the empiric stage of using methods from imitation without the deeper knowledge of reasons is supplied by the three or four years of pupil teacher employment.

5. The system provides a reliable supply of efficient teachers.

Weaknesses in the pupil teacher system which need to be guarded against.

1. If made continuous, the work of teaching becomes exhausting to the pupil teacher, and does not leave sufficient energy for the work of self-improvement.
2. When the youth as scholar and pupil teacher is kept exclusively under the same conditions of effort from year to year, his acquisitions, whether of knowledge or of modes of communicating it, are liable to become narrow and stereotyped.
3. In the smaller schools, where the pupil teacher is the only help, the dangers mentioned above are increased.
4. The practice of control and of teaching, whilst knowledge is necessarily limited, tends with some natures to develop a dogmatic and dictatorial manner.

Suggestions for the improvement of the system.

1. Make the work of actual teaching, especially during the early years of apprenticeship, less, and increase the time for observation of good patterns of teaching methods.
2. Make special provision for professional training, by arranging a systematic course of model and criticism lessons during each year of

apprenticeship—the methods of teaching to be discussed before the lesson, and the results, satisfactory or otherwise, reviewed in a friendly criticism after the lesson.

3. Whilst his or her own teacher retains entire charge of the professional training, and certain other branches of intellectual study—by preference those which are considered important branches of the school curriculum—other subjects, such as a science or a literary study, may be taken by specialists, either at centres or under the University extension schemes.
4. The general reading of the pupil teacher should be directed either by means of reading unions, or the establishment of a teachers' library in connection with each school, so that during the course of apprenticeship each pupil-teacher shall gain an intelligent acquaintance with a few of the choicest books in each branch of English literature. Suggestions as to the best mode of reading and of using the matter read might be followed by an informal conversation upon the chapters read, and sometimes by a paper or essay upon a work by a favourite author.
5. By an extension of the practice of some Inspectors of schools, who, after hearing the teaching of the pupil teachers and examining their papers, have taken occasion to comment upon the quality, both of their teaching, and their answers to questions, in the presence of the entire body of pupil teachers. This practice has been followed in many cases by the best results. The abler teachers have been encouraged to excel. The weaknesses of the less successful have been far more effectively cured when pointed out to them either individually or in the general gathering of their fellow pupil teachers, than when stated in a general way in *Blue Book* reports, and afterwards excised and retailed in detached paragraphs through the medium of the daily press.

6. The Prussian or Class-room System.

Introduction.

Our review of the many systems which have been more or less adopted in English elementary schools would not be complete without a reference to those schools which, on account of their resemblance to the schools in general use throughout Germany, belong to the Prussian or class-room system. The statement in Schedule VII. of the New Code to the effect that '*The number of class-rooms should, where practicable, equal the number of classes in the school-room*' is a distinct intimation of the favour with which schools organized on the class-room system will, in future, be viewed. It is true that the large rooms in which a number of classes have hitherto been taught may conform somewhat to the regulation by the adoption of curtains and partitions,* but the regulation intimates more than

* This plan is sometimes termed the 'Battersea Method.' It was first suggested by a Minute of the Privy Council and tried in the practising schools of the Battersea Training College.

this, viz., that over and beyond the accommodation in the school-room there should be a class-room provided for every class.

The distinctive features in the class-room organization are (1) the exclusive use of adult teachers, and (2) the simultaneous working at the same subject throughout the school. The system permits a re-classification of every scholar for the different subjects of school instruction, and where adopted, therefore, will allow the utmost advantage to be taken of the 'freedom of classification' granted by the Code regulations of 1890.

Against the class-room organization it may be urged that it is only suited to very large schools, where each class of children, of nearly equal attainments, numbers from 60 to 80; that it cannot meet the needs of small schools; that with these numbers, viz., 60 to 80, under adult guidance, there is still work—slate and paper exercises, individual reading, &c.—which requires, for sufficient oversight, the splitting up into smaller groups under monitors or pupil teachers; that the system offers employment only for adult teachers, and does not make provision for the early training of a succession of skilled teachers; and that the highest teaching art is not developed by the exclusive occupation of any teacher during a lengthened period in conducting a single class over a somewhat narrow range of subjects.

The opinion of Dr. Rigg, Principal of the Westminster Training College, on the respective merits of the class-room and pupil teacher system is often quoted. He says—

> 'Men go hastily to Germany and see a German school taught only by adult teachers, a teacher to each separate class; or they go to Edinburgh and see a similar plan in operation in a number of excellent schools; they see or hear besides that a similar plan is in operation in the expensively appointed and efficient schools which are among the shows of some towns in the United States, and they come to the conclusion that modern science is opposed to the employment of pupil teachers, and requires that only adult teachers should have any charge of children. Whereas the fact is, that, where this system succeeds, it is under conditions altogether different from those which belong to the elementary schools of this nation. It may be practicable in Germany, where thirty pounds a year in gross payment is good pay for a teacher, to have a public school manned only by grown teachers. In this country, where the teacher is paid six times the amount, this

would not be possible. Even in Germany the result is that the classes under the charge of each teacher separately are far too large for thorough and efficient teaching at all points, and through all the school time. No teacher can by himself, and without the aid at least of effective monitors, teach constantly a class of seventy or eighty children, although they may be nearly of the same age and standard of attainments. Children to be well taught must often be broken up into small squads with a monitor or pupil teacher over them. Although on certain subjects a teacher may be able to give capital and effective simultaneous lessons to a large class, yet for many purposes of eliciting thought and correcting error, and supplying defect, he must be able to deal with each scholar apart, or as one of a much smaller section. By the pupil teacher system a scientific form and organization has been given to that provision of pupil-aid in schools, the need of which is universally felt in public elementary education, and the rude and ready form of which, open to grave objection, and altogether imperfect and unsatisfactory, is found in the use of monitors—sometimes recognised as such, and sometimes extemporised as necessity compels, and used without formal recognition.' *

7. Conclusion.

Any one wishing an explanation of the various features of school organization exemplified in the different elementary schools in England can only obtain it by taking into account the fact that each of the systems briefly described above, or a modification of it, has been adopted by one or more of the several communities, who, from time to time, have felt themselves called to take their share in the work of popular education. Each district or community selected the system of organization which promised to secure the educational results they deemed most valuable, and which was best suited to the size of school the locality required. The student of school organization who has made himself master of the foregoing chapters will find no difficulty in accounting for either the multiplicity of arrangements in the plans and organization of our English schools, or for the existence of any special feature in any particular school or set of schools. If, *e.g.*, he is asked the question, 'Why do most of the older Wesleyan schools consist of a spacious room containing a large gallery?' the answer is found in the fact that these schools adopted from the

*National Education. By J. H. Rigg, D.D. Strahan & Co.

first Mr. Stow's system of training. Should he enquire why the plans of many of the national schools are oblongs, developed, according to size, into the shape of the letter L, or T, or H, and having one side of each oblong fitted with rows of parallel desks, separated from one another by means of a curtain or partition, the answer is ready, 'that this arrangement is found to suit the employment of pupil teachers and assistants, who may need the guidance and supervision of the head teacher.' In answer to the enquiry, 'why many of the London Board Schools are built on the Prussian or class-room system?' it will be found that in all cases these schools are very large, and it was estimated when they were built that a sufficient number of scholars would present themselves to fill up the classes throughout the school to the capacity of each room, and that it would be best for the educational value of such a school that it should be entirely under the tuition of an adult staff.

THE SCHOOL BUILDING.*

1. Introduction.

Before commencing to build a school, it is necessary to take the following points into consideration, viz., (1) the total accommodation required, and the government regulations respecting the amount of area demanded for each child in average attendance; (2) the plan of the building as a whole, and the size and shape of the several rooms, the latter being dependent mainly upon the school staff and the system of organization and the desk arrangement; (3) the lighting, sunny aspect, warming, and ventilating of the school, all of which, together with the consideration of school site and drainage, are matters of school hygiene considered in a separate chapter; (4) the furniture, such as desks, galleries, and partitions; and (5) the apparatus needed for giving lessons in the different branches of school instruction.

2. School Accommodation.

Hitherto a school has been held to accommodate one child for every 8 sq. ft. and 80 cubical feet, some allowance being made for fire and door spaces. In the Code it is stated that, in future, 'the numbers for which new premises and enlargements are passed will generally be calculated in accordance with the rules in Schedule VII.' This Schedule has been withdrawn. Plans of Schools and of alterations must be submitted for approval to the Board of Education. The main details of Schedule VII. are retained in this book. In the schedule here referred to it is stated that 'the accommodation of each room depends not merely on its area, but also on its

*The alterations in the Code of 1902 have been made in the succeeding pages.

shape (especially in relation to the kind of desk proposed), the positions of the doors and fire-places, and its proper lighting.' . . . . 'Wasted space cannot be considered, ... **accommodation in schools for elder children is calculated by the number of children seated at benches and desks.'**

Where schools are constructed in strict compliance with the rules in Schedule VII. it will be found that a demand will be made in future for not less than 10 sq. ft. of floor area for each child in average attendance. *For class-rooms not providing for more than* 60 *scholars,* 10 *square feet of floor area is required in every case. Infant schools require* 9 *sq. ft. per child and access should not be through the older children's school-room. If a Standard II. is taught, then a separate class-room of* 10 *square feet per child is required.*

3. The School-room; its shape and size.

In planning a school the first thing to be determined is the kind of desk required. If *dual desks* are used, these may be in rows five deep in a large school-room and six deep in a class-room. If *long desks* are introduced, four rows only in depth are advised, or three rows if the width of the school-room is less than 21 ft. 6 in. In class-rooms five rows of long desks in depth are allowed.* Having fixed upon the kind of desk to be used, the width of the school-rooms can be determined, viz.:—

In a room 18 ft. wide, groups of long desks, three deep, and not more than 12 ft. long should be used; where four rows are used the width of room should be 21 ft. 6 in., and the length of desk not more than 9 ft. and if the width is 22 ft., dual desks, five rows deep, are most suitable.

Sketches of a school-room fitted with long desks and of a room fitted with dual desks are given on pp. 140-1. The reader will find the exercise of measuring the widths required for the three rows of long desks, and the five rows of dual respectively, to be a very useful practice—the necessity for the 22 ft. under the dual desk arrangement becoming at once apparent. Dimensions of the long and the dual desks, together with the widths of the required passages, are given on pp. 145—149.

Double-banks schools require rooms 32 ft. wide, walls left clear for three rows of long desks on opposite sides, and ample lighting from windows on both sides extending to the ceiling.

4. School Plans.

'School planning is the science of thoroughly adapting every part of a building, even the minutest detail, to the work of school teaching. Convenience of plan, suitable lighting, proper subdivision into classes, and thorough ventilation, with warmth, but without draughts, are its leading essentials. Attention to small points is of extreme importance. Sanitary laws are here as vital as in a hospital. The school architect is recommended to first perfect his plan. His own skill should then enable him to clothe it with form, proportion, character, and colour.'

* In narrow class-rooms a seventh row of dual desks and a fifth row of long desks may be allowed, but if the class-room accommodate more than 60, or is more than 24 ft. 6 in. deep, the rule for school-rooms applies.

Official regulations.

The following regulations respecting important matters of school planning, taken from the government schedules, should be carefully noted.

(*a*) *The doors and fireplaces* must be placed so as to allow of the whole of one side being left free for groups of desks and benches.

(*b*) *Lighting and Ventilation.* Every part and corner of a school should be fully lighted. The light should be obtained first from the left of the scholars, if possible, the next best position is from the right; and last, but only as supplementary to the other light, from the back or front; the latter two sources should be as high as possible, to prevent the light coming directly in the face of either teacher or scholars. In rooms 14 ft. high, any space beyond 24 ft. from the window wall is insufficiently lighted. Whilst the sills of the main lighting windows are conveniently made about 4 ft. above the floor, there should be little or no space between the window heads and the ceiling. *Large spaces between the window heads and the ceiling are productive of foul rooms.*

Windows should never be provided for the sake merely of external effect. All kinds of glazing which diminish the light and are troublesome to keep clean should be avoided. A large portion of each window should open for cleaning purposes as well as for ventilation. The ordinary clear window glass is better for school purposes than any of the various forms of frosted glass. The glare of the latter caused by the light being re-reflected becomes painful instead of restful to the eyes. To see the distant sky, or trees, or even buildings, through clear glass, is also restful and instructive.

Skylights are objectionable for reasons stated on p. 96. Plans needlessly involving their use cannot be approved, except in the case of central halls having ridge or apex ventilation.

For purposes of ventilation the windows should nearly reach the ceiling and a large portion should be made to open. A window is also required opposite those used for giving light. † Apart from open windows and doors there should be provision for copious inlet of fresh air; also for outlet of foul air at the highest point of the room; the best way of providing the latter is to build to each room a separate air chimney carried up in the same stack with smoke flues. An outlet should have motive power by heat or exhaust, otherwise it will frequently act as a cold inlet. The principal point in all ventilation is to prevent stagnant air. In schools where ventilating air shafts are provided a minimum of 2 sq. in. per child for outlet of air and of 2½ sq. in. for inlet of fresh air is required. Inlets of fresh air should communicate with the external air and should discharge upward. They are best placed in corners remote from doors or fireplaces. They should never be placed in the floor.

(*c*) *A separate entrance* should be provided for each department of the school. This entrance must not be through a class or cloak-room.

Entrance doors and doors of main rooms should open both ways. A porch should be external to the school-room. In large departments more than one entrance is desirable. An external door having outside steps requires a landing between the door and the steps.

(*d*) *Class-rooms* must be not less than 18 ft. × 15 ft., must be on the same level as the main room, must not be passage rooms, must have one side left free for desks, and must be easily cleared without disturbance to the other rooms. If longitudinal desks are used the width of the room should not be less than 16 ft. The teacher's desk should not be more than 20 feet from the centre of the back row, and that row should not subtend a greater angle than 60° with the teachers' desk. Class-room doors should open both ways. Class-rooms should be sufficient in number for the size and circumstances of the school.

(*e*) *Cloak-rooms*, well ventilated in order to prevent smells being carried into the school, and external to school and class-rooms must be provided, with gangways 4 ft. wide, lighted from the end, and with two tiers of numbered pegs 12 in. apart. Each child will thus require 6 lineal inches of wall space. Cloak rooms should not be placed against a gable wall, they should not be passages. Children should be able to enter and leave without crowding. Lavatories should provide basins—more for girls' than for boys' or infants' schools.

(*f*) *Play-grounds*, open and airy, and fairly square, should be added to every school, and in the case of a mixed school should be separate for boys and girls, whilst for infants they should be on the same level as the school and open to the sunshine. They should be properly levelled, drained, enclosed, and fitted with simple physical appliances. A portion should be covered, having one side against the wall. A covered way should never connect the offices with the main building. Buttresses, sharp corners, and recesses should be avoided. Minimum space 30 sq. ft. per child, or, including site, ¼ acre for 250 children. If the school be of more than one story this area may be proportionally reduced. The site should have a building frontage in proportion to its area.

† No school-room lighted from one side can be approved. The gable end should be fully utilised for windows. Rooms should be flushed with fresh air from windows every two hours.

(*g*) *Staircases*, where unavoidable, should consist of short flights of straight steps (5½ to 6 in. high and 13 in. broad) leading to square unbroken landings. Triangular steps arranged in a winding manner are dangerous for little children. Staireases must be external to the schoolroom, and sufficient to allow rapid exit in case of fire. They should be fireproof.

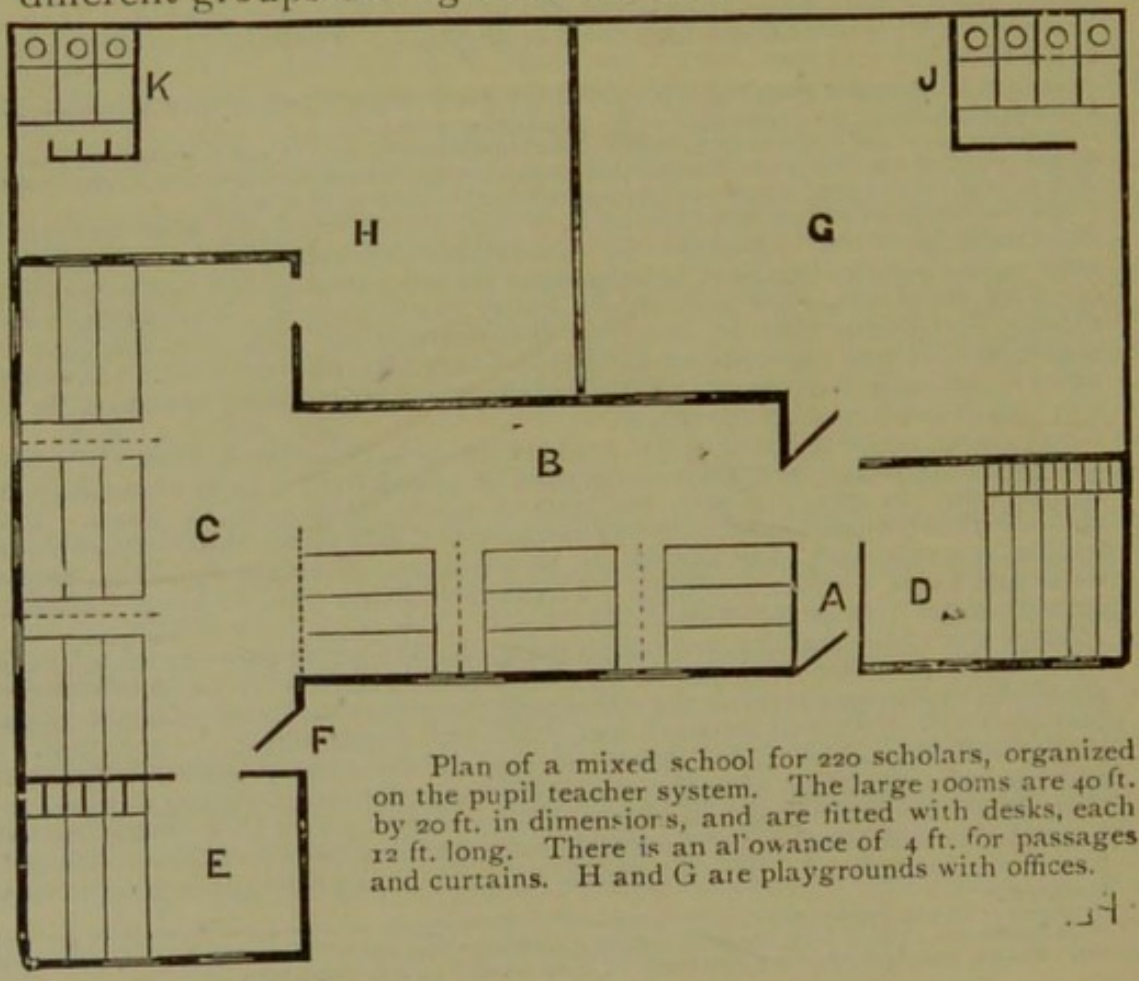
(*h*) *Cess-pits and Closets* should be 20 ft. distant from the school. Each separate closet should be not less than 2 ft. 3 in., nor more than 3 ft. wide. It should be fully lighted and ventilated, and properly screened or supplied with a door. Doors should be cut 3 inches short at the bottom and 6 inches at the top. More than one seat is not allowed in any closet.

(*i*) *A Cookery Centre* (750 sq. ft.) must provide for 18 at practice, and not more than 54 for demonstration at one time. It should have a separate entrance, and have a small scullery and a bonnet room. A cookery *Class-room* should contain at least 600 sq. ft. and 8,400 cu. ft., and be placed so that smells from it cannot pervade the other rooms of the school.

(*j*) *Workshops and Laundries* are best entirely apart from the school. They should be constructed, lighted, ventilated, &c., for a workshop rather than for a school. A Laundry Centre should contain 750 sq. ft. and shou'd have a gallery or raised platform with desks for 42. A room used for laundry work should contain 600 sq. ft. and 8,400 cu. ft. For other details see Schedule VII. Day School Code.

5. Plan of a mixed school worked on the Pupil Teacher system.

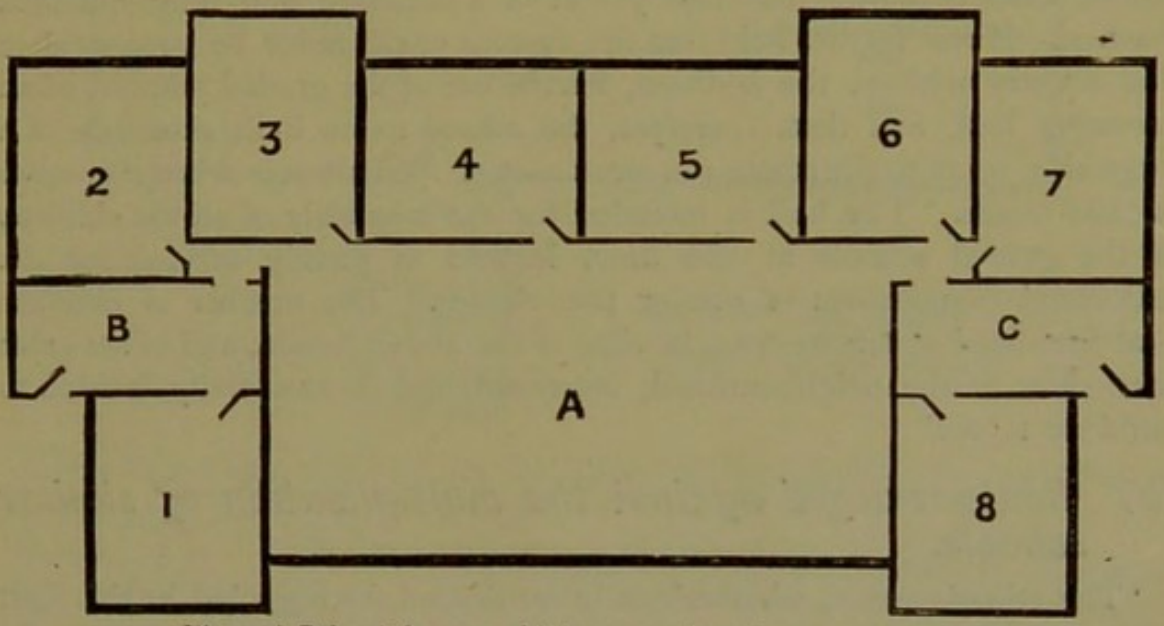
The following plan follows mainly a design suggested by the Education Department for a mixed school of 220 scholars. It makes provision (1) for the supervision by the head teacher of the instruction given by pupil teachers; (2) for the gathering together of a large proportion of the scholars for collective teaching, securing thereby the operation of what Stow termed 'the sympathy of numbers,' and (3), by means of partitions and curtains, it provides for the partial isolation of different groups during class lessons.



Plan of a mixed school for 220 scholars, organized on the pupil teacher system. The large rooms are 40 ft. by 20 ft. in dimensions, and are fitted with desks, each 12 ft. long. There is an allowance of 4 ft. for passages and curtains. H and G are playgrounds with offices.

6. Plan of a school on the class-room principle, and furnished with dual desks.

The following is an outline sketch of one department of a large school, built on the class-room plan by the School Board for London. Eight class-rooms, each accommodating from 60 to 70 scholars, are arranged round a central hall, A, with access to this hall either direct or from the landings B and C in immediate proximity.



Plan of School for 500 children on the class-room system.

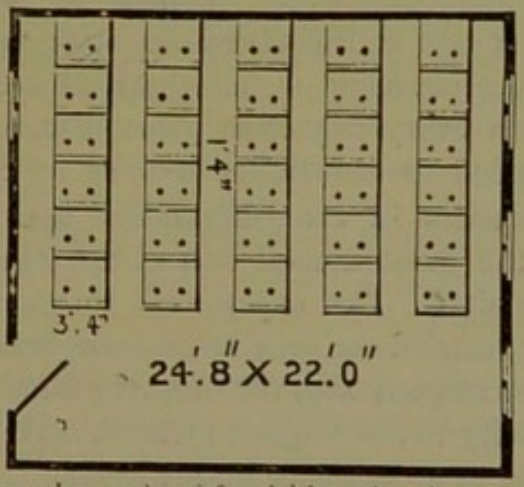


Diagram to show the mode of furnishing the class-rooms in the above plan with dual desks.

The late architect for the London School Board, who is also the professional adviser of the Education Board on all matters relating to school buildings, in his work entitled *School Architecture* gives the following reasons, (1) for this school being built, and (2) for similar schools not being multiplied.

(a) Reasons urged for the construction of the school.

'On all hands it appeared to be admitted that the English system possessed an advantage in the greater economy of teaching power. The advocates of the German system, however, urged that the best method, not the cheapest, should be adopted for the new schools of London, and claimed the superiority, as tested by results, for the foreign schools. After much consideration it was determined that the arguments were of sufficient importance to justify an experiment in the erection of a complete specimen, and that, therefore, a school-house should be built consisting of separate rooms, each requiring the employment of a separate and fully qualified teacher. It was further held that the system could never be successful in this country without the addition, for the use of the graded schools, of an assembly hall, and that, therefore, the school to be built should be of a large size, so as to distribute the extra cost of the hall over a large number of class-rooms. The hall is intended for the assembly of all the children of the graded schools at one time, instead of merely serving for the occasional examination of one or two classes. The number of children —at first fixed at 1,000—was, in view of the above reason, and of the great necessities of the neighbourhood, increased, and it was finally decided to build for 1,500.'

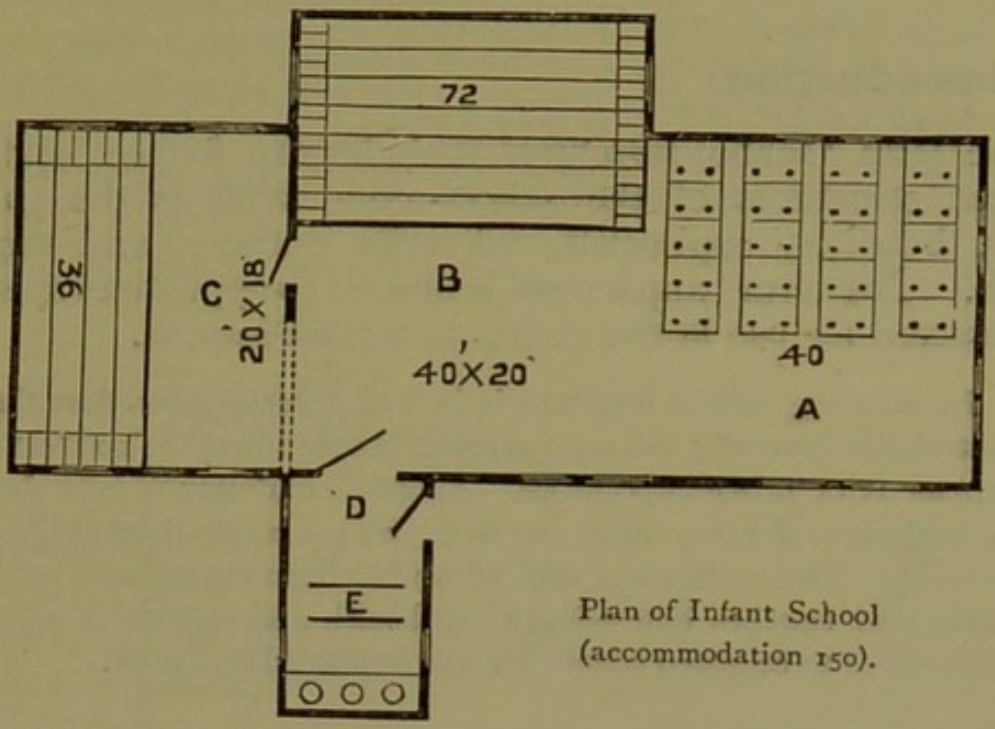
(b) Reasons urged against the multiplication of similar schools.

'The school cannot, when critically considered, be regarded in the light of a success which invites general imitation. One noticeable defect is the smallness of the accommodation for infants, as compared with other departments. Another lies in the enormous aggregation in one building, rendering necessary the covering of too great an area of population, and the bringing of children every day from great distances, a principle condemned in its application to elementary schools by the experience of all Europe. A third consists in the comparative uselessness of the hall; the last arises from the great annual cost of the teachers involved by the system of class subdivision. The experiment shows that for our purpose the German system, if carried out on a large scale, bears its own condemnation in its size. If attempted with the ordinary numbers it would present at all points an inferiority to the English method, unless its teaching results can yet be shown to be of a decidedly higher order.'

7. Plan of an Infants' School.

The following plan is that of an infants' school, with accommodation for 150. It may be noted that whilst the accommodation of schools for older children is calculated upon the number of desks and benches, that of infants' schools 'is calculated at 9 sq. ft. for each child in average attendance,

after deducting wasted or useless space.' If a Standard II. be taught, a separate class room is necessary, and 10 sq. ft. per child is required.



Plan of Infant School (accommodation 150).

The following directions, taken from the building rules of the Department, are important—

Infants should not be taught, except in very small schools, in the same room with older children, as the noise and training of the infants disturb and injuriously affect the discipline and instruction of the other children.

(*a*) There must be no opening wider than an ordinary doorway between an infants' and any other school-room, because of the sound of the infant teaching.

(*b*) An infant school and playground should always be on the ground floor, and if more than 80 scholars are admitted should have one gallery and a small group of benches and desks for the occasional use of the elder infants. For purposes of exercise, a covered marching ground is desirable.

(*c*) No infant gallery should hold more than 65 infants, nor in a babies' room more than 50; it should be well lighted from one side. The light for object lessons is as good from the right as from the left. The back of each gallery seat should consist of a wooden rail fixed slightly below the level of the children's shoulders.

(*d*) The width of an infant school-room should be in proportion to its size but not be more than 24 feet. Infant class-rooms should as a rule, not contain more than 60.

(*e*) The babies' room should always have an open fire, or have a temperature of 65° F. As a rule it should not contain more than 50 children, and should be under supervision from the school-room Large schools may require two communicating rooms for babies,—one filled with low Kindergarten desks, the other providing ample floor-space for exercises.

(*f*) The accommodation of an infant school-room for children below Standard II. is calculated at 9 sq. ft. for each child after deducting wasted or useless space, but a larger area should be allowed wherever practicable. Care should be taken that the numbers are conveniently seated, and that marching space is provided.

SCHOOL FURNITURE.

1. Introduction.

The term 'school furniture' includes the fixtures and permanent structures of the school-room, such as the gallery, desks, benches, cupboards, ink-wells, curtains, and window-blinds. The term 'apparatus' is limited to appliances specially constructed for use in the giving of certain lessons.

In selecting school furniture it is well to remember that the best material is generally the most economical, and that the comfort of the scholar is of prime importance. Elegance in design is most desirable as tending to develop taste, but this must not be obtained at the cost of comfort. The mechanical skill which has been expended in producing desks and benches best adapted to health and comfort in school has done much to brighten school life and lessen school work.

2. School Galleries.

The idea of a gallery originated with Mr. Stow. He arranged his scholars in short rows behind each other instead of placing them in the semi-circular or rectangular manner of the monitorial system; then he raised the back rows so that the children in these rows could both see and be seen. The gallery, under the Glasgow system, became an essential feature of school furniture, and was frequently constructed sufficiently large to allow all the children in the school to be assembled upon it. The tripartite system continued the use of the gallery, but only for the accommodation of about one-third of the school at a time. Galleries are still considered essential to the furnishing of an infant school, where very much of the instruction is collective. In schools for older children the gallery idea is seen in the raised platforms upon which the back desks are placed.

3. Desks and Benches.

Upon no article of school furniture has more thought and skill been expended than upon the school desk. The importance of a desk constructed so as to conduce to the child's healthy and symmetrical development becomes more evident when it is remembered that the 'new instructions' upon school

outfit require the supply of a desk and bench for every child in average attendance. In past years it was deemed sufficient to have desk accommodation for $\frac{1}{3}$, or at most $\frac{1}{2}$, of the children. Children were moved from the desk to the gallery, and thence again to the floor, so that only about $\frac{1}{3}$ of the school time was spent in the desk. The following diagram sets out, in general outline, the arrangement and dimensions of the different parts of a school desk. Modifications to meet special requirements will be stated and illustrated in succeeding paragraphs.

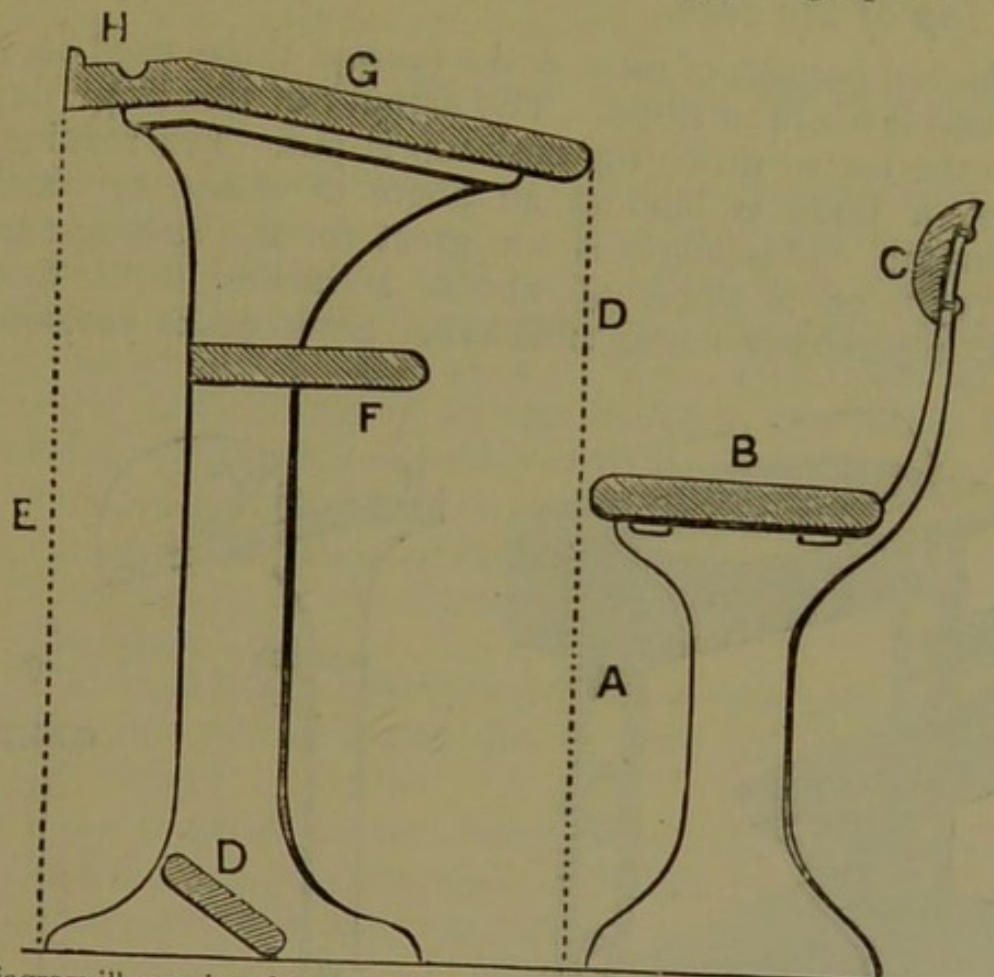


Diagram illustrating the proportions of the different parts of a school desk as stated below.

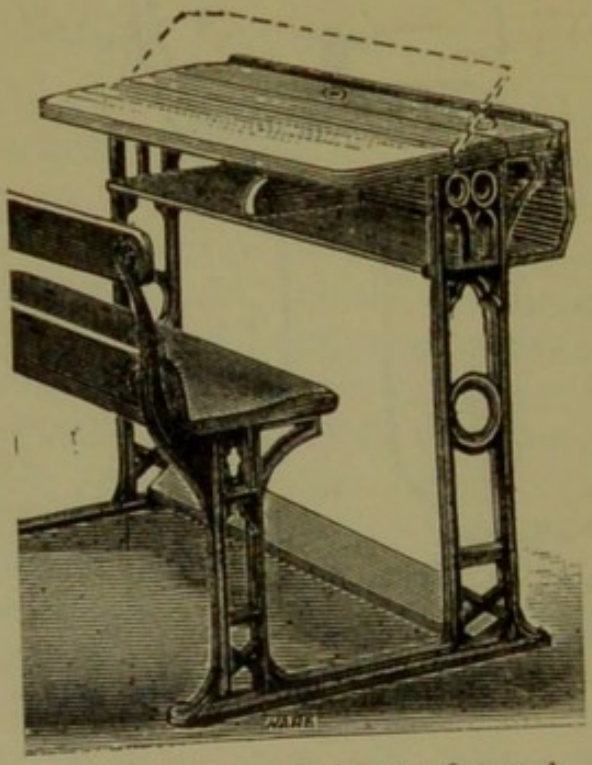
(a) The Seat or Bench.

The height (A) of the bench should be from 12 to 16 inches, according to the size of the child. It should be high enough to allow the child when seated to place his foot on the ground or foot rest, with the upper portion of the leg in a horizontal position; in other words, the height of the bench should equal the length of leg from the sole of the foot to the joint of the knee, when this portion of the leg is perpendicular to the ground. The seat (B) may be from 8 to 10 inches in width,

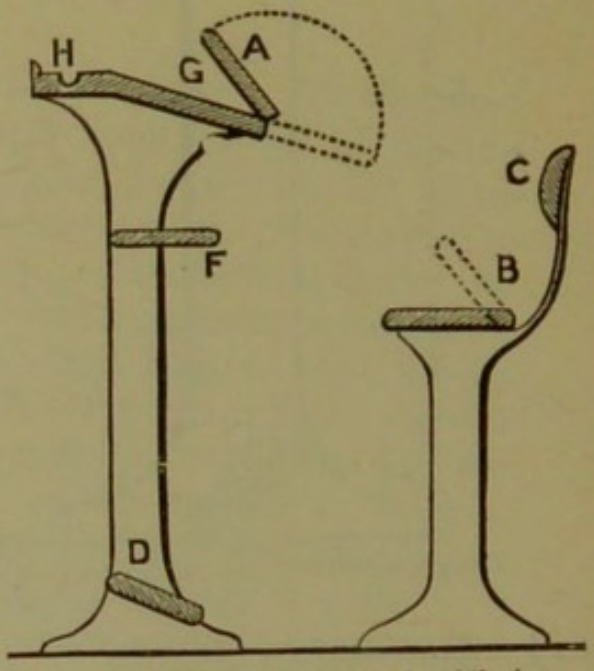
and may be slightly tilted up in front. No seat is considered complete without a rest (C) for the back. This is placed from 7 to 10 inches above the seat, so as to support the scholar in the hollow of the back, immediately below the shoulder blades. A foot-rest (D) placed immediately beneath the front portion of the desk, and at right angles to the direction of the leg, when stretched forward, completes the arrangements for a comfortable seat.

(*b*) *Top of the desk.*

The top portion of most desks (except those used in infant schools) is made to slope. The amount of this slope depends upon the use to which the desk-top is put. For reading purposes, a book is held at an angle of about 45° with the horizontal. This angle is too great for the writing exercise, and 15°, or a slope of about 2 inches from front to back, is generally found sufficient. Some desks provide both



The Reading desk manufactured by the North of England School Furnishing Company.



Transverse section of a school desk, to show the two slopes, G for writing and A for reading. Sometimes the seat B falls back to allow standing room.

of the above slopes, as shown in the figures above. A portion of the sloping part of the desk is made to lift up and to remain at the angle suited for reading purposes. Besides the sloping part of the desk, which has a width of about 12 inches, a horizontal portion, 3 to 4 inches wide, and grooved along its

entire length for pens, with holes also at intervals for the insertion of ink-wells, extends along the front of the desk-top. The height of the front edge of the desk varies from 20 to 26 inches.* This measure is determined by the slope of the desk being of a height sufficient to allow the fore-arm to rest upon it without displacing the shoulder.

Some desks are made with a beading along the lower edge of the sloping portion. This prevents slates and books from slipping off the desk; but at the same time provides a very uncomfortable rest for the left arm whenever the scholar is writing.

(c) *Distance between the front edge of the seat and that of the desk.*

Desks were formerly nearly all of the longitudinal type, and in order to enable scholars readily to move into them the bench was either detached from the desk, or, if joined to it, the space between the bench and the front edge of the desk was considerable, being sometimes as much as 5 inches. The constant effort of leaning forward, caused by this distance, was found in time to develop several serious bodily defects, such as—

(1) Curvature of the back.
(2) An undue elevation of the left shoulder.
(3) Contraction of the chest, and consequent weakening of the lungs.
(4) The head being held forward and on one side, an uprush of blood followed, and this in time was found to affect the sight.

In order to avoid the evils enumerated above, it is necessary that the front edges of the desk and seat be brought into, or nearly into, a straight and vertical line.

Summary of conditions which a model desk must fulfil.

From the foregoing account it is evident that a school desk professing to be strictly hygienic must possess the following features—(1) The front edges of both desk and seat must be brought into, or nearly into, a vertically straight line. (2) The desk must provide for facility of movement both into and out of it. (3) It should present a change of slope for the reading and writing exercises, respectively; and (4) adequate support must be given for both the feet and the back of the occupant.

* See line AD on figure, p. 145.

In many German and in some English schools the distance between the seat and the front edge of the desk has been reduced to 3 inches. (*This arrangement fairly satisfies demands* 1 *and* 2.)

The entire sloping area of the desk-top may be made to move forward into writing position, as in the 'Victor' desk by Hammer and Co., and the 'University' desk of the North of England Furnishing Company. A portion of the top of the desk may be made to lift up, as in the desk shown on p. 146. (*This desk satisfies demands* 1, 2 *and* 3.)

Objection is sometimes taken to the latter desk on account of the slight unevenness in its top, and because of the danger arising from careless children placing their fingers in its iron workings. Good material and workmanship will lessen the former of these objections, and suitable desk drill will obviate the latter.

Dual desks versus long desks. *

The dual desk arrangement provides more accommodation for scholars at benches and desks than do the long desks for the same length of school-room. For example, a school-room 53 ft. long allows 5 groups of long desks. Each desk is 9 ft. in length and accommodates 6 scholars—thus room is obtained for 90 scholars in all. In the dual desk arrangement the same length of school would allow 11 groups of desks each 3 ft. 4 in. long, together with passages between each group 1 ft. 4 in. wide, thus providing accommodation at bench and desk for 110 scholars.

Again, in a school 22 ft. wide, allowing 2 ft. 4 in. for the width from front to back of each of 5 dual desks, the floor space in front would be 10 ft. 4 in., whilst in a school 20 ft. wide with three† rows of long desks each 2 ft. 4 in. wide, and with passages behind of 18 inches width, the available floor space would be reduced to 8 ft. 6 inches.

The dual desk permits ready access to every scholar. This facility of movement amongst the members of the class is very valuable in all such exercises as writing, drawing, composition, or the practice of the rules of arithmetic. The scholar can also be brought out readily to point to a place on a map, to watch the progress of an experiment, and to work on the board a stage in a sum.

Against the increased accommodation and the ready inter-communication between teacher and pupil, the only set-off worth considering is the proximity into which the dual arrangement brings the pupils. They are certainly near each other measuring from the front of the group of desks to the back, and the continuous working together of two scholars in the same desk may tend to weaken independent effort.

The long desks, three or four deep, spread the class out laterally more than the dual desks, and this makes the class more difficult to control. To lessen the width of the class by increasing the depth, causes the teacher to raise his voice to a correspondingly higher pitch. This effort becomes exhausting, and, at the same time, adds to the general noise. Any attempt at access by the teacher and at movement by a pupil, disturbs several members of the class.

* When comparing dual with long desks, it should be remembered that 18 in. is sufficient width for a scholar using the long desks (never more than 12 ft. long), whilst 20 in. each scholar is needed when using the dual desks.

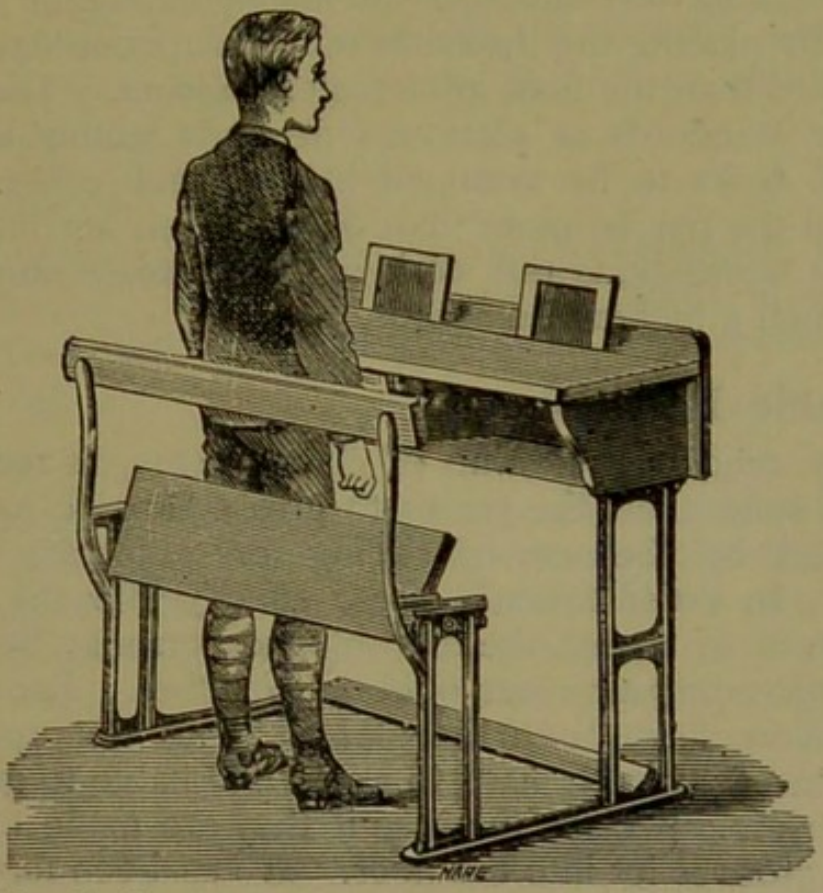
† Four rows of long desks are allowed in schools 21 ft. 6 in. wide. (1898.)

In favour of the long desk it may be urged that these desks supply more complete control over the independent working of each pupil, scholars being too far removed in front for those behind to see over without manifest effort, and lateral copying is almost sure to be detected.

In the matter of cost the long desks have the advantage, the price per seat in the long desks being about 7s., as against 11s. to 12s. in the dual desks.

Remaining forms of desk arrangement.

Desk with seat hinged to fall back for standing room. The following desk is taken from sketches by the North of England School Furnishing Company.



Convertible desks, i.e.,

Desks made to serve for school use during the day, and readily changed into seats with backs for meetings of adults during the evening, and further made to flatten into tables for occasional social gatherings, can never be entirely satisfactory for any of the above purposes, and are least satisfactory for school use. The seats are liable to be too high for children and a movable top is likely to become unsteady.

Single desks,

When constructed on the principles of the model school desk,* are the best. They provide complete isolation, they

* See page 100.

allow the scholar to have complete control of the movements of the desk and of his working material, and they do much to foster the habit of independent effort. The large amount of space they require, and their increased cost, when compared with other desks, are the only objections which can be raised to their introduction into elementary schools.

Desks on raised Platforms.

When desks are arranged five or six deep, it becomes a great convenience in teaching to have the two back rows raised, either by making the standards of the desks higher by 4 to 6 inches or by placing the desks on raised platforms each 4 to 6 inches higher than the floor immediately in front. The amount of rise for standards or platforms depends mainly upon the number of desks to be arranged behind each other. In no case should the rise be more than 6 inches, on account of the facilities for overlooking the work of the scholars immediately in front which a higher rise affords.

4. Movable Partitions.

In many schools the value of class teaching is recognized, and, at the same time, the power to give collective instruction is preserved by the use of sliding or otherwise movable partitions. In order to make these effective for the purpose of isolation as to sound, the movable portion may be double, with an intervening air space of about 6 inches. For purposes of supervision they should be glazed along the upper half. Partitions are frequently hard to work, and liable to get out of order. This is especially the case if they are made to run on wheels, in grooves let into the floor. It has been found to be much more effective both as to ease of movement and continued order to run them on wheels at the top. In the schools under the Manchester School Board partitions weighted and moved vertically on the principle of the ordinary sash window are found to work easily and well.

The excessive use of movable partitions should be avoided. (1894.)

5. Miscellaneous articles of Furniture.

Curtains.

These are sometimes used in place of partitions, and are more easily moved, but they are not so effective in lessening

noise. The chief requisites in a curtain are—(1) a strong material, neat in appearance, and held firmly in position; (2) a ready and orderly mode of extension and withdrawal. A green baize curtain hung by means of rings upon an iron rod, hinged to the wall and extending outwards to the required distance and at a height of about 7 feet, serves very well to screen classes from view of each other. To withdraw the screen easily the rod is sometimes raised by a rope attached to the end furthest from the wall and passed round a pulley in the roof. When the rod is raised the curtain falls back towards the wall. The chief objections to the use of curtains are that they soon become dirty, are liable to harbour vermin, and unless carefully managed, they tend to give an untidy appearance to the school.

Window Blinds.

Wherever the light is excessive, as, for instance, from windows with a S., S.W., or S.E. aspect, blinds of a drab or cream colour will be found a sufficient protection from excessive light.

Cupboards.

No school can be orderly in appearance unless sufficient accommodation is provided for the storage of books and other working appliances. The cupboard should not only store the reading books and other school appliances; it should be so arranged within, by being divided into suitable compartments, that its contents may be preserved in good condition, and readily available. A cupboard for every class, under the supervision of a responsible teacher, and provided with lock and key, so that he or she alone can be held accountable for the state of its contents, forms a necessary arrangement in every well ordered school.

Article 8 of the Code holds the Managers responsible for the provision of all needful furniture, books and apparatus, and in particular of (*a*) suitable registers, (*b*) a portfolio to contain official letters, (*c*) a diary or log-book, (*d*) a cash-book, (*e*) the Code and revised instructions for each year, and (*f*) a book for recording minutes of managers' meetings. Besides the class cupboards already mentioned, therefore, a special store closet should be provided for the set of articles just enumerated. This might further be used as a receptacle for new school books and for the old registers, which must be preserved for at least 10 years.

Writing Materials.

Schools differ in their procedure respecting the supply and the storing of pens and copy books. Ink is invariably supplied by the school; it should be good in quality and well kept. *Copy books* are liable to spoil if carried about in the scholar's satchel. If stored in the school they should be kept ready for rapid distribution. A small square cabinet, placed near each class, with divisions equal in number to the number of groups or rows of children in the class, would be found a great convenience. At the end of the lesson the books should be passed to the end of each group or row of children; a monitor then collects each packet of books, places them in their compartment, and thus leaves them ready for distribution when next required. *Pen boxes* are generally found in schools, and *Pen-wipers* should be as generally provided, and their use insisted upon. At intervals the pens may be passed under review, in order to change a bad pen for a new one. Children often attempt to write with material which a skilled penman would never use.

Ink supply.

This is one of the most important of the minor articles in constant school use. Its supply is difficult to control, and its waste causes an appearance of great untidiness. Furthermore, unless the ink is fairly fresh, and kept free from dust and other impurities, all paper work suffers, and thus one of the best means of presenting the school work to parents and others in neat and attractive form is lost.

> Small porcelain pots, open sufficiently to admit the pen, and supplied frequently with a small amount of fresh ink by means of a long funnelled jar or tin vessel, with the addition of a frequent oversight by the master to see that no paper is inserted, and finally, an occasional cleansing by the school keeper—these appear to be among the best conditions for maintaining a good supply of ink for every pupil.

6. Management of school furniture.

The condition in which the school furniture is maintained depends almost entirely upon the regard the children are taught to have for it. In classes where excellent intellectual results are obtained, and a remarkable brightness and activity of thought is aroused, there may be only slight regard paid to

the school furniture and fittings; the result is that these suffer more, in such a school, than they would in one where less activity is aroused. In the recent instructions issued to Her Majesty's Inspectors, the following significant passage is found. 'The condition of the school furniture and premises will also be considered, and the higher grant of discipline and organization should not be recommended unless you are satisfied that the school is a place for the formation of right habits as well as a place of instruction.'

The presentation of the school furniture and premises in a condition which will satisfy the close scrutiny of an inspector, will not be the result of an occasional spurt in their careful and orderly treatment by the children. It will proceed solely and only from the most watchful and constant supervision by every member of the school staff.

1. The children must be trained to the orderly disposal of their hats and other clothing on their numbered hat pegs.
2. They must be marched in order to their respective positions, either for general assembly or class work.
3. When passing into or out of their desks, the movement of either desks or seats should be simultaneously effected after signals or commands by the teacher in charge, *e.g.*, when the movable portion of the desk is to be raised, the command may be 'desks lift'; instead, however, of saying these two words together, the teacher first says 'desks,' at which every boy prepares to lift the desk, and only when (after a pause to see that every boy is attending) the word 'lift' is uttered, does the class raise the flap; similarly with the commands 'flap down,' 'stand out,' &c., one of the words should be the signal for attention, the other for simultaneous action.
4. The use of the ink upon either desks or clothes must be forbidden. Children who write on desks will see no reason why they should not disfigure either their books or the walls of the school. A pen-wiper is of service in instilling a care in the use of ink.
5. Marking desks in any way should be strictly forbidden. The desks, in which children are now required to spend so much of their time, will reveal the kind of discipline which prevails throughout the year more completely, perhaps, than any other article of school furniture.
6. The box for chalk, and the hook for duster; the nail, tape and hammer for the immediate repair of the map and roller, the neat and parallel arrangement of pictures, the frequent visits to the offices, and the examination of school books, are matters of detail which no teacher aiming at the formation of right habits can afford to neglect.

SCHOOL APPARATUS.

Introduction.

The value of suitable and sufficient apparatus, whereby instruction may be imparted in the most attractive and effective form, is becoming more and more recognized. The additions to the school curriculum made in recent Codes are of a nature such as to demand the introduction and use of apparatus. The time has gone by when the entire day's work in school required no more than a slate, blackboard, chalk, and a reading book. The Kindergarten, with its gifts and occupations, drawing, manual instruction, elementary science, cookery, and laundry work are very recent additions to the work of the elementary school. All necessitate the use of apparatus.

It would take us beyond the limits of our enquiry to present anything like a complete array of apparatus for teaching all the subjects of school instruction. Instead of repeating long accounts of familiar apparatus, it may be well that most attention and space be given to the newer subjects, and the apparatus needed in teaching them.

APPARATUS FOR INFANT SCHOOLS AND CLASSES.

In an infant school the greater portion of the work* is in actual contact with objects and apparatus of various kinds. The entire work is divided into three parts, viz.:—(1) suitable instruction in the elementary subjects, (2) simple lessons on objects and on the phenomena of nature and of common life, and (3) appropriate and varied occupations. It is proposed to pass briefly under review the apparatus needed in each of these three divisions of infants' school work.

A. Apparatus for teaching the Elementary Subjects.

Reading.

The *Alphabet forms* may be constructed by means of sticks, similar to those used in stick laying. Cardboard, coloured and

* A circular setting forth important modifications in Infant School work and appliances is printed on pp. 234 *et seq.*

cut into straight and curved pieces, makes still better letters. Accompanying both these exercises should be the forming of similar letters on the blackboard by the teacher, and on slates by the pupil. The *Spelling frame* is useful for word building, and *Reading sheets* become necessary at a later stage, these finally giving place to the *Reading book*.

The character of the Reading Sheets will be determined by the method of teaching to read adopted in the school. There are certain general conditions which all reading sheets should fulfil, as for instance:—(1) They should begin with the short vowel sounds, because these enter into the shorter words, and are more consistently represented by the same letter forms than are the long vowel sounds. (2) The vowel, when introduced, should be of the same sound throughout the first lessons into which it enters. (3) Exceptions to rule two should only be granted in the case of very common and necessary words, such as 'is,' 'was,' 'are,' etc. (4) The common and necessary words which present irregularity of sound should be gradually introduced, and after introduction should be frequently repeated until familiar. (5) The consonants must be introduced in a systematic way, as, *e.g.*, (*a*) the labials, (*b*) dentals, &c., and (*c*) double consonants at the beginning and end of the word. (6) Long vowels, and the different methods by which these are represented; and (7) the embodiment of the words which the children have learned, as soon as possible, in simple sentences.

Reading Primers should present lessons following the same order as that indicated above for the reading sheets. All books for use in infants' schools should be printed in bold, legible type, and well illustrated. There is some danger in over illustrating, as children are more inclined to read pictures than they are to remember words.

Writing.

Writing, in the early stages, is closely connected with drawing. The effort is practically the same, and there is no reason why the same method should not be adopted in teaching the subject. Early exercises in both writing and drawing should be upon slates ruled on one side for writing, and on the other side for drawing, care being taken that the children are supplied with long and properly sharpened pencils. Besides slates and pencils for the scholars, a blackboard ruled in the same way, but on a larger scale, as the slates, should be used by the teacher. This is sufficient, and at the same time the best equipment for first lessons in writing, granted always that a good copy is presented to the child for its pattern, and a sufficient stimulus is given to arouse its powers of imitation.

Ruling of Slates.—For writing purposes, slates are commonly ruled across with three lines in succession down the entire length of the slate. All the joinings, the beginnings, and the endings of letters come then on the middle line. The space occupied by the three lines should be, together, three-eighths of an inch in width, and the middle line may with advantage be less distinct than the other two. For drawing exercises, the slates may be ruled in squares of a quarter of an inch side.

The use of pen and pencil.—In the exercises with the pencil, practice should be given in the mode of holding it, similar to that of holding the pen, so that the transition from the pencil to the pen becomes as easy as possible. **Kindergarten copy-books** afford first exercises in wielding the pen. Dots are first formed, developing into straight lines—upright, horizontal and oblique. Afterwards simple curves are formed, *i.e.*, in one direction only, as in the letters **c** and **e**; these are then doubled until the full elliptical curve of the letter **o** is completed. The curve and straight line are then combined into such letters as **a, d, g.** A kindergarten copy-book forms an introduction to a series of copy-books published by Messrs. Johnstone & Co. **A blackboard** ruled like the copy-book and used by the teacher in giving oral instruction is an essential piece of apparatus at this stage.*

Infant Arithmetic.

Simple notions of number in the concrete are afforded throughout almost the entire series of kindergarten exercises—counting, adding, subtracting, multiplying and dividing, together with concrete notions of fractions; these are all taught by the recognition of what are termed the 'useful' forms of Froebel's gifts, *e.g.*:—

The balls in gift I. are counted, the chief care here being that when the words two or six are used the notion is not associated with the 2nd or the 6th ball only, but with the group 'two,' and the group 'six,' respectively. In gift II., the cube differs from the sphere in having sides, edges and angles; these may be counted, and thus *six sides*, *twelve edges* and *twenty-four angles* may be taught. In gift III., the divided cube, by the first movement, forms *two oblongs*, each $\frac{1}{2}$ of the entire cube; these again, by a second movement, are sub-divided, and *four oblongs* are presented, each of which is again $\frac{1}{2}$ of the former oblong, and $\frac{1}{4}$ of the entire cube. By a third movement, each oblong is again divided, and *eight small cubes* are produced, each of which is $\frac{1}{2}$ of the previous oblong, and $\frac{1}{8}$ of the original cube. In this

* These are supplied ruled on one side by the Westminster School Book Depôt, S.W.

See p. 166.

exercise not only are whole numbers presented in the concrete, but simple, yet exact notions of fractional numbers are supplied. Concrete ideas of number may be equally well taught, whether the exercise be based upon the six gifts, or paper folding, stick laying, lath or mat plaiting, or upon pea-work.

Value of a variety of apparatus for giving first notions of number.

Formerly it was considered sufficient to have a ball frame, or abacus, for teaching the initial stages of number. No truth, however, is now more clearly recognized than that to teach number in connection with only one piece of apparatus prevents the child from readily passing from number in the concrete to number in the abstract. Progress in this matter is most effectively secured when the number to be taught is associated with a variety of objects, such as cubes, sticks, desks, window panes, dots on domino cards, &c. In teaching the number 'six,' for example; it is first associated with each of the above materials in turn, the number is soon recognized as the most striking common feature of the entire series, and it is finally associated with a purely mental notion, separate from all objects, *i.e.*, it has become a number in the abstract. If, instead of this variety of apparatus, the six dots of a domino card alone are used, it is evident that the name six will simply recall the arrangement of dots associated with it, *i.e.*, a concrete representation of the number will be maintained. On no account should we in teaching encourage the use of fingers for purposes of counting. Concrete numbers are only intended for first notions, and for very simple arithmetical operations. As soon as the learner has passed into the region of abstract number, he ought to be encouraged to leave the clumsy operations of the concrete. If, however, counting has been practised by means of the fingers, it will be very difficult to break the habit, and the transition to abstract number will in consequence be seriously retarded.

B. Object Lessons.

The following paragraph is quoted for guidance in the selection of object lessons from the 'Revised Instructions to Her Majesty's Inspectors':— 'In order to satisfy the second of the three requirements of Art. 98*b* (New Code), the mistress, early in the school year, should draw up, and enter in the Log

book, a course of about 30 collective lessons—*e.g.*, on animals; on such objects as coal, glass, and salt; on common employments, as paper making, cotton mill, house building, one of the trades of the district being chosen in preference; on form and colour, food, plants, and clothing; on simple facts in nature, as rain, frost, the seasons; and on familiar scenes in common life, as the post office, a shop, a railway, washing, or harvest. Each of these should, in the course of the year, be given two or three times, and, on the day of inspection, the Inspector may select one or two lessons to be given by the teacher in charge of the class; then, at the point of the lesson where questioning begins, he may himself intervene and ascertain how far the lesson has had an intelligent effect.' As the series of object lessons is intended to cultivate the observing powers of the children, rather than simply to store their minds with information about things with which they have no previous knowledge, it is evident that the lessons should be determined by the material available for examination and inspection by the class; the course will necessarily, therefore, vary somewhat with the locality and surroundings of the school.

Infant School Museum.

The consideration of the apparatus necessary for giving a series of object lessons, such as that enumerated above, suggests a school museum, which may be supplied with the following amongst other materials:—

1. **Animals.**—Models, pictures, especially outline and enlarged drawings of some of the more minute structures. These should show the adaptation to the habits and conditions of life of particular animals, *e.g.*, the webbed foot of the duck; fins and gills of fishes; foot of cow, cat, horse and mole, etc.*
2. **Minerals.**—Specimens of peat, and different kinds of house coal; sand, potash and different kinds of glass; salt—rock, bay and table salt; slate, chalk, sandstone, marble, granite, pebbles, angular flints, etc.
3. **Common Employments.**—*Paper Making.*—Different kinds of rags, esparto grass, pulp, blotting paper, glazed and tinted paper, with picture of a paper factory, supplemented, if possible, by taking the children, a few at a time, and after the lesson, to see some of the more important operations. *Cotton Mill.*—A model of the working of a hand loom, cotton material partly unwoven by the children, raw cotton in the pod, picture of the cotton plant, specimens of

* Specimens of animals (caged or stuffed) which are in any way associated with cruelty must be omitted.

material in the various stages of manufacture, calico, and printing, with specimen of cotton thread. *House Building.*—Clay, moulded and burnt, and different kinds of bricks; building stones, such as the common kinds of limestone, marble, and sandstone; sand and lime, with mortar and cement in the soft and hard states; slates and tiles. Different kinds of wood for floors and roofs, for painting and polishing. Miniature doors and hinges, windows and glazing. A doll's house furnished.

4. **Articles of Food.**—*Bread*—with stem and ear of wheat separated into grain and husk; a picture of threshing machine; ground wheat, showing bran, whole meal, and fine flour; picture of a mill. *Butter.*—Milk, cream, cardboard model of churn; butter and buttermilk for a special lesson, with picture of dairy. *Sugar.*—Pieces of sugar cane and beetroot; specimens of crystal, loaf, and powdered sugar, with molasses; picture of a sugar plantation and mill. *Tea.*—Seeds, with plant growing in school; pictures of plant and leaves, and a Chinese tea garden; tea ship, and route of ocean race. *Salt.*—Brine, crystals formed by evaporation, rock and other kinds of salt. *Fruits and Vegetables.*—Specimens of finest of those grown in the locality, and a few of others imported from foreign countries. The best form of museum for the study of ordinary garden growths is a small cultivated plot in connection with the school. These existed years ago, and fruits and flowers adorn some school-rooms now.*

5. **Articles of Clothing.**—*Wool,* raw, spun, and woven into cloth; with picture of sheep-washing and shearing. *Calico*—as above. *Linen,* with linseed, line stem with pods, fibre separated from husk, spun into thread, and woven into linen. *Silk,* with eggs, silkworm, cocoon, and moth; silk thread, and woven with specimens of silk material. (The series of changes from egg to moth should be watched each year. Instead of mulberry leaves, clean lettuce leaves for feeding the silkworms may be used.)

6. **Natural Phenomena.**—*Rain.*—To show vapour, a boiling flask and a spirit lamp, with a small slate as condenser, are needed; pictures of clouds, and of a rain shower. *Frost.*—A small tray, like a tea-cake mould, blackened on the outside; place in the mould some pounded ice mixed with salt, hoar frost soon collects on the outside. *Seasons.*—No attempt should be made with very young children to explain the scientific causes of the seasons. The most obvious truths, based upon their observation of warmth and sunshine with the luxuriance of flowers, of fruit and growth of trees in connection

* This list may be extended in the direction indicated almost indefinitely. It is not well to make the list too numerous, and at times it would be advisable to replace one set of objects by a fresh group.

with summer, and of the cold and short days with ice and frost in connection with winter, together with the intermediate experiences of spring and autumn—these are sufficiently difficult for the infant mind to grasp, without attempting to explain the astronomical and physical changes upon which the changing phenomena depend.

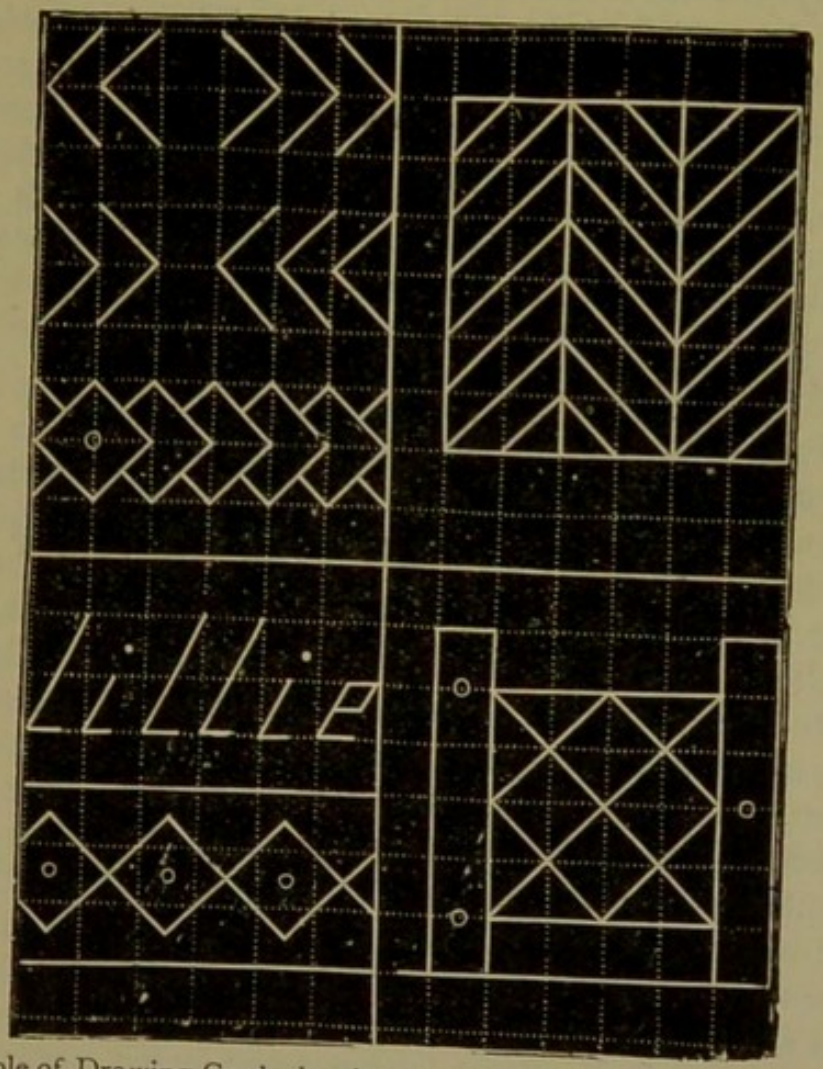
7. **Familiar Scenes of Common Life.**—*Post Office.*—Besides the ordinary experience of every-day life, a few postage stamps, with specimens of addressed envelopes, will illustrate a lesson on the postman, his work, and how he is paid. The saving of labour by the collection at, and distribution from, a central office might be worked out by a game at posting and distributing envelopes addressed to school-fellows. Someone is made postmaster, who arranges the envelopes according to the several classes, a child from each class being selected as postman to deliver the letters. In the same way the notion of a *shop* might be practically illustrated. Models of coins for payment and exchange can be obtained and might find a place in the museum. *A Railway.*—Model of engine (working if possible) with railway carriage on rails to show structure of wheels; a railway ticket, with lesson on payment of porters, guards, etc.; a picture of a railway station, and of a train in motion running through a country scene. *Washing.*—Portions of soiled material, specimens of soap and soda; flask and spirit lamp for boiling; models of drying appliances; materials after boiling, rubbing, and drying. *Harvest.*—Pictures (*a*) of cutting and reaping corn, with small specimens of gathered and tied-up sheaves; (*b*) rain, and delay and disappointment; (*c*) fine weather, busy scene, children gleaning, men and horses carrying, the farmer stacking the corn; and (*d*) picture of 'harvest home.'

C. Appropriate and varied occupations.

'The manual or other employments which best satisfy the third of the requirements of Art. 98 (b) of the New Code are modelling, simple geometrical drawing, weaving, plaiting, building with cubes, drill, singing, recitation, and other exercises, such as will relieve the younger children, especially during the afternoon, from the strain of ordinary lessons, and train them to observe and imitate. It should be borne in mind that it is of little service to adopt the "gifts" and mechanical occupations of the *Kindergarten* unless they are so used as to furnish real training in accuracy of hand and eye, in intelligence, and in obedience.'

Modelling and Drawing.

The educational and practical values of the early occupation of children in these arts have been dealt with at length in another place.* The apparatus required in modelling in infants' schools is very simple and inexpensive. One stone of modelling clay can be obtained for less than 2s., and, if kept moist, may be worked over and over again, thus providing raw material sufficient for a large class, and for a long time. A small planed board 11 inches by 9 should be provided for each child as a working surface. Natural objects, such as an egg, a pear, a lemon, a plum, an acorn, a pod of peas, an ivy leaf, are easily obtained, and models in terra cotta may be purchased at a cost of about 8d. each.† *Drawing* requires the



Sample of Drawing Card, showing lines horizontal and oblique, with patterns, letters, and common objects developed from them.‡

* 'The Principles of Oral Teaching and Mental Training,' pp. 141 to 146.
† See Catalogue of Kindergarten occupations—Myers & Co., 15, Berners St., W.
‡ Cowham's Drawing Cards for Infants' Schools.

supply of chequered boards for the teacher, and chequered slates and books for the scholars. The latter can be bought ruled in squares to any size. Ordinary slates may be adapted by ruling horizontal and vertical lines $\frac{1}{4}$ of an inch apart.

Practice should first be given in drawing lines of given length, (1) horizontal, (2) oblique, (3) enclosing angles, and (4) forming squares and rectangular figures. Simple curves may follow, developing gradually into symmetrical figures. Drawings should as far as possible be representations of figures and designs with which the scholars have already become familiar in their Kindergarten exercises; common objects and letter forms should also be selected for drawing when these can be made by a combination of the lines already familiar. *See figure on p. 161.*

Drawing from natural objects.

One of the chief objects of drawing in the infants' school is to develop a power of close observation of things. This power is not increased so much when drawings are made from flat copies, as when the natural object is drawn. Hence, objects like ivy-leaves, the side of a cube, a triangular prism, an apple, &c., may be drawn with advantage. The models for this exercise may be the same as those used for modelling in clay—in fact, the two exercises might with advantage be combined, and thus, when a clay model has been made, a flat representation of it may be attempted by drawing.

Weaving or Plaiting and building with cubes.

These exercises are familiar in every Kindergarten. They all demand the use of material, and in sufficient quantity for every child to have its own supply. The six 'gifts' of Froebel are made in two sizes, one for the use of the scholar, the other, a much larger set, for the use of the teacher. These larger 'gifts' are indispensable for class instruction. In addition to the gifts, *desks* are now provided, with a portion, or the whole of the top, ruled in squares, the size of each square being that of one side of the Kindergarten cube. A *teacher's table*, with larger squares to suit the larger cubes, will be found very valuable in oral and class teaching.

For the exercise of weaving or plaiting, a supply of strips of coloured paper and of mats or groundwork, with plaiting needles of either wood or steel, is required Paper folding, tablet laying, paper cutting, stick plaiting and laying, pea work, wood and cork work, ring laying, pricking, and embroidery, are other occupations which a fully equipped Kindergarten possesses. All require for successful effort a plentiful supply of material.

Pictures.

The walls of an infants' school should always be bright with pictures. Mention has already been made of those needed in giving lessons on objects and natural phenomena. Pictures of typical animal forms—birds, beasts, and fishes; of trades and industries; of views of the district; the harvest field; a ship at sea in full sail, another caught in a storm, a fishing fleet; the Black Country by day and by night; a coal mine, &c.—these might be found in most schools. Every district, however, provides topics of special interest to its own children, and a few of these should find a place amongst the pictures of the school.

APPARATUS FOR SCHOOLS FOR OLDER CHILDREN.

A. Reading Books.

(1) Code requirements.

Two sets of reading books must be provided for Standards I. and II. and three sets (in small schools only two), one of which should relate to English history, for each Standard above the second. In Standard VI. one of Shakespeare's historical plays, and in Standard VII. Shakespeare or Milton may be read. As a guide to the further selection of reading books, the following may be quoted from the *Instructions to Her Majesty's Inspectors.*—'Among instruments of instruction in geography and elementary science, reading books have been found of great value. In Standards I. and II. it will not, however, be necessary for you to insist on the use of a reading book for this special purpose. The best reading books for higher standards are those which are descriptive and explanatory, are suitably illustrated, and contain a sufficient amount and variety of interesting matter. The chief use of the reading book is to give greater definiteness to the teaching, to make thorough recapitulation easier and more effective, and to invest the subject with new interest.'

In reading books, not less than 80 pages of small octavo* text should be required in Standards I. and II., and not less than 120 pages in higher standards. Two pages may be considered as the minimum for an effective reading lesson; and engravings, lists of words and names, and supplementary questions or exercises

* This foot-note is in octavo text.

are not to be taken into account in computing the contents of the books, except to a small extent in those for the first standard. A book containing twice the amount of matter prescribed for a single year may remain in use during two years, *e.g.*, for both the *fifth* and *sixth* standards; but may not count as two books for use in a single class in one year. Longer lessons than those of two pages are clearly desirable for the elder children. To the ordinary narratives and poetical extracts there may be added lessons illustrating the importance of thrift and temperance, and the relation of conduct to well-being. Passages impressing on children the duty of gentleness and consideration for others and of the humane treatment of animals, may be added with great advantage. It is in no sense desirable that all books in use in schools should conform exactly to one type in regard to their length or arrangement, without reference to the proper treatment of each subject, or the literary unity of each volume. Text-books or manuals should not be accepted as reading books.

The Revised Instructions (1898) state, in substance, as follows, viz.: 'The mechanical difficulties of reading, which are to be found in the shorter words of irregular spelling, should be mastered before the III. Standard is reached; but even in lower standards an attempt should be made to teach children to read in a natural tone, and to break up sentences rather into phrases than into single words.

'In all classes the greatest importance should be attached to the right method of breathing, distinctness of articulation and clear utterance; the sounds produced, especially the final consonants, should be made distinctly audible by a free use of all the organs of speech. Avoid simultaneous following of pattern reading, except, perhaps, when some local defect of intonation may render the practice necessary. Encourage scholars to read in a natural voice, and with such natural emphasis as they use in ordinary speech.'

(2) *Selection of a good reading book.*

Two kinds of reading books are clearly required, each determined by the age and attainments of the scholar. These are (1) those used in the lower classes, where the mechanical difficulties found in the shorter words of irregular notation are systematically introduced, and (2) those which are specially prepared to cultivate the art of reading with fluency and intelligence, and to foster a love of reading for the pleasure the exercise affords, and for the knowledge it provides. Another question should be settled before finally determining upon a reading book in the higher classes. The ordinary readers (leaving out of account those which relate to history, geography or elementary science) consist, for the most part, of selections from a variety of standard prose authors, with ballads and other poetical compositions interspersed here and there. These selections are especially valuable for the information they supply, and for the points of literary excellence they present; at the same time, the disconnected reading material which these selections provide appears to have developed a remarkable taste for literary fragments. These fragments, whilst they occupy the thought and, to some extent, satisfy the appetite for reading which school days have roused, supply no solid mental food and develop very little intellectual power.

Reading books are, however, being provided of another kind, viz., those containing one or more continuous narratives. It will be necessary to decide between the relative merits of these two kinds of reading books, and in order to do this it may be well to indicate the special value which the latter form of reading book possesses. The advantages of the continuous narrative arise from the fact that new matter is introduced in a gradual and natural order, and thus the knowledge gained in a previous lesson becomes available as a basis of instruction in the new lesson; moreover, by continued contact with the persons of the narrative, their experiences and actions, the pupil's interest is maintained from lesson to lesson, and thus the feeling necessary to intelligent expression is readily awakened; furthermore, the power to sustain the reading effort over a lengthened period, and to grasp the relations existing between an extended series of associations, is strengthened, and finally a more or less thorough preparation for reading, with pleasure and success, a complete work is gained. It may be that the best books will in future aim at uniting the good features of both readers, and leave the school library and home reading to stimulate the exercise of reading a complete work.*

The type, binding, illustration, and general appearance of English reading books leave little to be desired. With competent teachers, the aids, in the form of words, meanings and glossary, are a positive hindrance to the reading lesson being made as completely an intellectual exercise as might be desired.

B. Apparatus for teaching writing.

Copy Books.

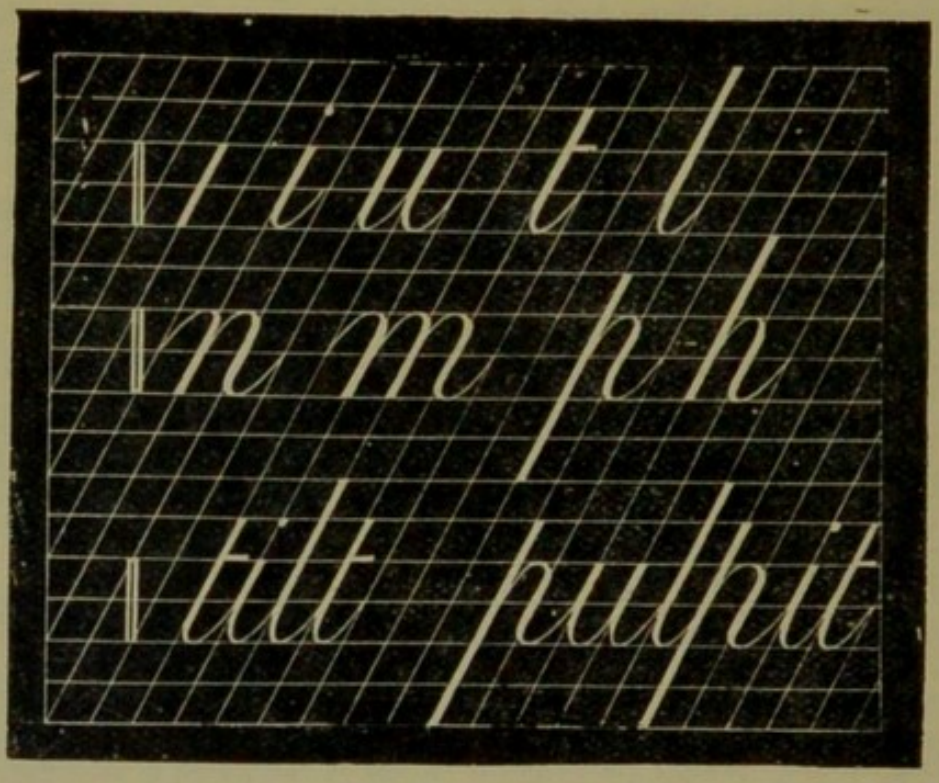
The Code requires the exhibition of copy books in all standards but the VII., in which note-books and exercise-books are to be shown. In the *Instructions* the following direction should be noted, viz., 'that any system of copy book exercises or of slate ruling which produces a bold and legible style, and in which the forms and proportions of letters are duly shown, may be accepted as satisfactory.'

* Since writing the above paragraph, the Code 1892 issued the following statement.—'The chief requisites of a school reading book are that it should be written in good English, that its style and contents should be calculated to stimulate thought, to be attractive to scholars, and to establish in their minds pleasant associations with the act of reading. Though the subjects may be properly varied, it is desirable that some of the lessons should be in a series and should afford, especially in the higher classes, means of sustaining the serious interest of the scholars.'

Copy books for the younger children should introduce the learner to the simplest elements of our script characters, and should therefore present abundant practice in straight lines, simple curves, and their combinations into letters and easy word examples. There should furthermore be some aid by tracing in the early numbers, gradually lessening in amount, however, as ability to write is acquired. The question of multiplying copies to two or even three on the same page, in order to secure attention to the pattern, has received much attention; most copy books now present at least two copies on the same page. The old **copy slip** had the following advantages—the copy could be suited to the learner's ability, and could be repeated until a satisfactory result was obtained. The difficulties attending the selection and distribution of the slips, and the untidy appearance they frequently presented, have lessened their usefulness.

Mulhauser copy books.—Besides the systematic arrangement of the writing exercise, proceeding from elements to their combination into letters and words, these copy books are ruled into rhomboids, by means of which the exact size, shape, position of joining, and slope of every letter are mechanically determined. The following objection to the system is raised, and not without some reason, that with beginners the multiplicity of lines tends to confusion. It is, however, a most thorough system, and should be fully mastered and practised by every teacher of writing.

Writing taught without copy books.—There is no doubt in the minds of teachers that their own writing on the blackboard and in the



Blackboard ruled with Mulhauser's Rhomboids.*

*Drawing of a Blackboard supplied by the Westminster School Book Depôt, S.W

pupils' exercise books, has more influence upon the writing of their scholars than the copies set in any series of copy books. Children are impressed more fully by what they see actually produced in their presence, and by their own teachers, than by the most beautifully engraved pattern their copy books can supply ; the pupils, moreover, can all be exercised in the same copy and at the same time ; they thus secure the advantages of a carefully-graduated system of lessons from the teacher. Given, then, a teacher with good writing ability, the only forms of apparatus necessary to produce a bold legible style of writing are a suitably ruled blackboard for class teaching, and plain ruled exercise books for the individual practice of the pupils.

The figure on the preceding page represents the ruling suited for teaching purposes ; it enables the teacher to show, by reference to the oblique and horizontal lines, the exact size, shape, position of joinings, and slope of every letter.

N.B.—The apparatus for the custody and ready distribution of books and pens has already been described. Unless some such appliances are used much of the value of the most careful teaching will be lost.

Note and Exercise Books.

These should be supplied to the entire school. The examination of these books will, in future, form a most important means of gauging the character of the work done throughout the year. They should be of good size, should be duly dated and corrected, should be well bound, and, when completed, they should be preserved for display on the occasion of the Inspector's visit.

C. Apparatus used in teaching Arithmetic.

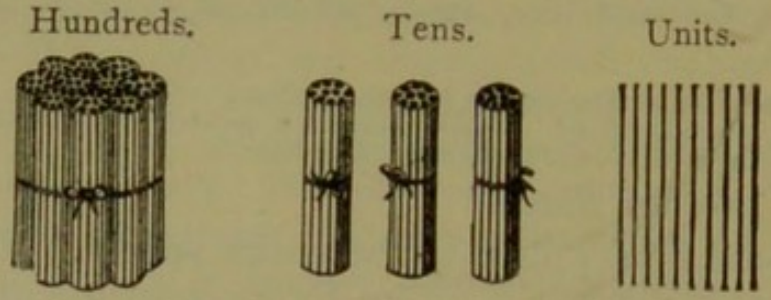
(*1*) *Introduction.*

The value of a variety of appliances for giving first notions of arithmetic has been already pointed out, and the use to be made of the different objects introduced into infant school work for the purpose of teaching concrete number indicated. In schools for older children apparatus may be introduced in teaching arithmetic at various stages, in order to explain the reasons of the processes used. 'This is a department of school work much overlooked. There is, as an elementary school course, scarcely any more effective discipline in thinking than is to be obtained from an investigation of the principles which underlie the rules of arithmetic. It is therefore desirable that you should very frequently ask the teacher of the class to give a demonstrative lesson on this subject, and he should so work out an example on the blackboard as to make the reason for every step of the process intelligible and interesting to the scholars.' *(Instructions to Inspectors.)*

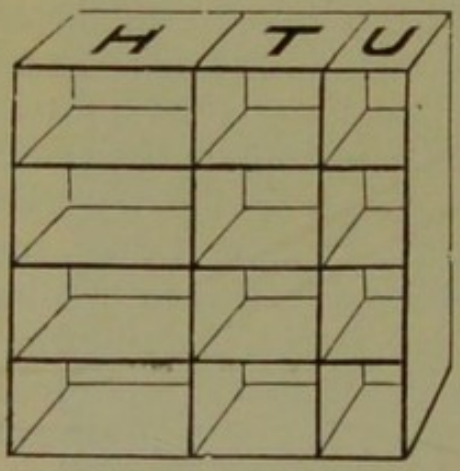
I propose to indicate some of the appliances of service in making the rules of arithmetic interesting and intelligible.

(2) *Apparatus for giving notions of place value.*

The apparatus used for stick-laying in the Kindergarten is cheap, and can be provided in sufficient amount for distribution throughout an entire class. This abundance of material is a most important condition, because, in order to be effective for teaching purposes, the operations should be performed by every scholar, and not merely by the teacher. The sticks may be made to represent *units*, *tens*, and *hundreds* in the following way:—The single sticks represent units, the small bundles tens, and the large bundles hundreds.



By means of this simple material the following operations may be performed in the concrete:—(1) The decomposition of numbers, as, for example, the above group into 13 tens and 10 units, or into 1 hundred and 40 units; (2) the addition of small numbers, together with the process of carrying; (3) subtraction, by either decomposition or equal additions; (4) multiplication and division. In order to facilitate some of the latter operations, and to bring the concrete process into closer association with the abstract rules, a 'numerical box' may be introduced, to be used in the following way:—



The numerical box.

Suppose the numbers 165, 46, and 152 are to be added together. They would ordinarily be arranged as follows:—

H.	T.	U.
1	6	5
	4	6
1	5	2
3	6	3

In using the apparatus, sticks to the number of 5, 6, and 2 would be placed in the respective compartments under the letter U. These, when added together, would make one ten bundle, and leave three single

sticks to represent the units in the lowest or answer compartment. The next step would be to add together the 6, 4, and 5 bundles of tens already arranged in the compartments under the letter T. These, together with the one bundle carried from the units column, make 16 bundles of ten each. Ten of these make a large hundred bundle, leaving 6 of the bundles of tens to be placed in the answer compartment below the tens. The operation is completed by putting together the three large bundles to represent the hundreds. At the end of the above operation all the sticks will be in the lowest or answer set of compartments, and the actual numbers added together will have disappeared. The difficulty might be obviated by retaining the numbers, in figures, on an adjoining blackboard. This practice would lead to the use of numbers in the abstract, which is the result aimed at; and as soon as it is secured it is well to throw aside all concrete expedients.

For the rapid and intelligible mastery of tables the 'Tables at Sight' prepared by Arnold of Leeds are admirably fitted.

(3) *Apparatus for use in teaching the Compound Rules and those of Weights and Measures.*

(*a*) Actual coins, or models of them, are useful in changing farthings to pence, pence to shillings, and shillings to pounds, as well as for the reverse set of processes.

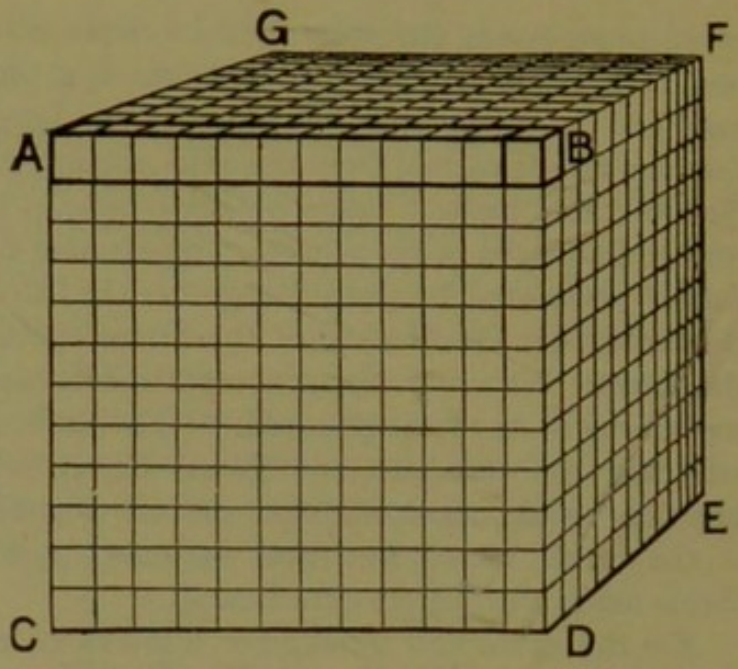
(*b*) Measures of capacity may be constructed out of stout cardboard. As the form of these is a regular cylinder, the making of a set of measures should be a part of the cardboard exercise of the manual training class. They should be tested by comparison with standard measure, sand or other dry material being used for this purpose.

(*c*) Measures of length may be readily provided by having feet and inches marked on the upright side of a blackboard, or on a doorway, and by having a height line marked in feet and inches from the floor to the ceiling of the principal school-room. Longer and well known distances may be measured by the chain, and the result placed in a prominent part of the school.

(*d*) The areas of the school-room and the play-ground should be obtained, and placed for reference conspicuously on a plan drawn on the school wall.

(*e*) In order to show the connection between long, square, and cubic measures, a box may be made of wood, one inch in thickness, or of stout cardboard, and marked as shown in the accompanying figure.

1. If the portion AB be made movable it will represent a long or lineal foot divided into 12 inches.
2. Twelve such strips make up the entire side ABCD, *i.e.*, a square foot. This is seen to be divided into 144 square inches.
3. Make the front portion ABCD movable, and it will be seen that twelve such areas, an inch in thickness, make up the entire cube ADG, or a cubic foot, *i.e.*, 1,728 cubic inches.



Apparatus for showing the relation between long, square, and cubic measures.

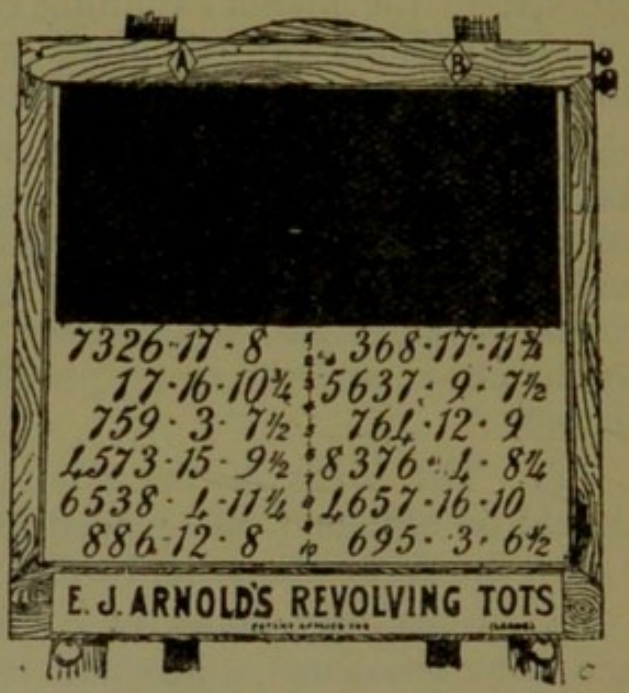
4. If, further, the cubic inch at B be made moveable, the entire piece of apparatus will show completely the relationship between long, square and cubic measures, so far as the inch and foot are concerned.

(*f*) A box of weights with a pair of scales will also be serviceable in teaching this branch of arithmetic.

(*g*) In the compound rules the scholars in the Fourth Standard and upwards are required to add up columns of £ s. d. within a specified time in order to show readiness and accuracy.

The adjoining effective apparatus has been prepared by E. J. Arnold of Leeds for practice in the rapid calculations required by the Code.

By moving the screen in front of the numbers, sums varying in difficulty are provided, and by rotating the sheet a great variety of exercise is supplied.



The full size of the apparatus is 29″ × 27″.

(4) *Apparatus of service in teaching vulgar and decimal fractions.*

The divided cubes of the Kindergarten 'Gifts' form excellent material for giving exact notions of a fraction. They form equal divisions of the whole, and this is the quality of a fraction to be impressed and kept constantly before the pupil at the early stage of teaching the subject. If apples or sticks be divided, care again must be taken that the divisions are such as to provide *equal* parts of the whole. It is a good practice, in beginning lessons on fractions, to allow the scholars to use the foot rule or tape, in order to measure off the fractional parts of the stick or string.

The following simple piece of apparatus has been constructed by the author for the purpose of comparing vulgar fractions with each other, and with decimal fractions. It is in use in the practising schools of the Westminster Training College.

FRACTIONS AT A GLANCE.

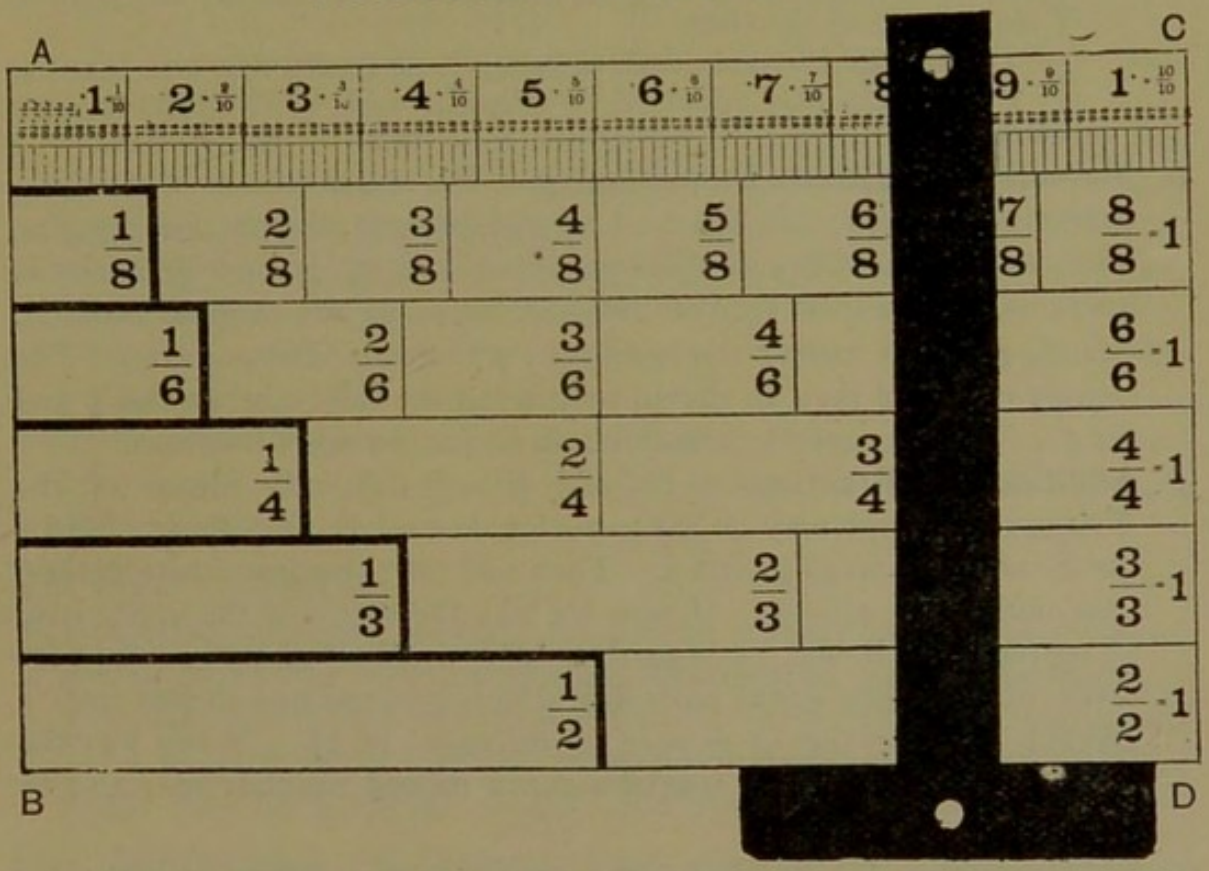


Diagram for making the rules or vulgar fractions interesting and intelligible.*

*This drawing, enlarged and mounted for class teaching purposes, is copyright. It is published by the Westminster School Book Depôt, S.W., and may be obtained through Simpkin and Co. Limited.

How to use the apparatus.

1. Begin instruction with the lowest space or strip, *i.e.*, with the $\frac{1}{2}$, and gradually work upwards to the smaller fractional parts.
2. **To give a correct notion of a Fraction.**—Each strip is divided into a number of **equal** parts, *e.g.*, the lowest strip into **two equal** parts, called halves; the next strip into **three equal** parts, termed thirds; the next into **four equal** parts, called fourths, and so on. A Fraction is thus seen to be either one or more of the **equal** divisions into which a whole number or numbers may be divided. Contrast also with irregular portions, termed fragments.
3. **Comparison of Fractions.**—Suppose it is wished to show that $\frac{3}{4} = \frac{6}{8}$, a T-square or ruler may be placed as in the figure, so that one edge is level with the $\frac{3}{4}$ths mark: it is at once seen that the $\frac{6}{8}$ths mark is level with the same edge. Hence the two portions of their respective strips are equal, and the fractions they represent are also equal.

   The same device illustrates the truth that 'if the Numerator and Denominator of a fraction are multiplied by the same number, the fraction is not altered in value,' thus, $\frac{3 \times 2}{4 \times 2} = \frac{6}{8}$.

   Exercises like the following may be readily worked by moving the T-square along the sheet.

   (*a*) In one-half there are four eighths, three sixths, and two fourths.

   (*b*) Four-sixths are equal to two thirds, and two-eighths to one fourth, etc.
4. **Meaning of Common Denominator.**—The above process of changing halves to sixths, to fourths, and to eighths, will prepare for bringing fractions having different Denominators, like $\frac{1}{2}$, $\frac{1}{4}$, and $\frac{3}{8}$, to other fractions, each respectively of the same value as the original fraction, viz., $\frac{4}{8}$, $\frac{2}{8}$, $\frac{3}{8}$, but having the same (*i.e.*, a Common) Denominator. The change of $\frac{1}{2}$ to $\frac{4}{8}$ may be shown by placing the ruler against the $\frac{1}{2}$ and the $\frac{4}{8}$. They are seen to coincide; so on for the other fractions.
5. **Addition of Fractions.**—To add $\frac{1}{2} + \frac{3}{4} + \frac{5}{8}$. By means of the T-square the class may be led to see for themselves that the $\frac{1}{2}$, $\frac{3}{4}$, and $\frac{5}{8}$ can be changed to $\frac{4}{8}$, $\frac{6}{8}$, and $\frac{5}{8}$. Then add the three fractions together, thus making in all, $\frac{15}{8}$. If now we take the whole of the upper strip to represent **1**, it will be seen that $\frac{15}{8}$ is equal to an entire strip, plus seven of the eight equal parts into which a second and similar strip is divided. Hence the $\frac{15}{8}$ is seen to be equal to $\mathbf{1}\frac{7}{8}$. In this way the meaning of an **improper fraction** and a **mixed number** may also be shown.
6. **Subtraction.**—To illustrate the subtraction of $\frac{1}{3}$ from $\frac{1}{2}$. The class may be first allowed to feel the difficulty of finding what is left after $\frac{1}{3}$ of the entire strip has been taken from $\frac{1}{2}$. They can see what is left but cannot state what fraction of the whole it is. Now take both the $\frac{1}{2}$ strip and the $\frac{1}{3}$ strip up to the strip divided into sixths; the class at

once sees the use of the Common Denominator and states the answer to be $\frac{1}{6}$.

7. **Multiplication.**—To illustrate the multiplication of $\frac{3}{4}$ by $\frac{1}{2}$. Place the edge of the T-square against the $\frac{3}{4}$: we cannot tell by looking along the fourths strip what the half of $\frac{3}{4}$ is, but $\frac{6}{8}$ is seen to coincide with the $\frac{3}{4}$, and the $\frac{1}{2}$ of $\frac{6}{8}$ may be read off, and found to be $\frac{3}{8}$.

   We get the same answer by the following reasoning:—If we multiply by **1**, the answer would be $\frac{3}{4}$ or $\frac{6}{8}$, but this would be twice as much as is required when we multiply by $\frac{1}{2}$. Hence $\frac{3}{8}$, which is one half of $\frac{6}{8}$, is the correct answer. Again, this answer may be obtained by multiplying the Numerators together for the Numerator in the answer, and similarly the Denominators together for the Denominator in the answer, thus, $\frac{3}{4} \times \frac{1}{2} = \frac{3}{8}$.

8. **Division.**—To illustrate the division of $\frac{1}{2}$ by $\frac{1}{8}$. Place the edge of the square against the $\frac{1}{2}$ division in the lowest strip: it is seen to coincide with $\frac{4}{8}$ in the eighths strip. Now, $\frac{1}{8}$ may be seen to be taken **4** times in $\frac{4}{8}$, *i.e.*, in $\frac{1}{2}$. Hence $\frac{1}{2} \div \frac{1}{8} = \mathbf{4}$ times.

   N.B.—If we divide $\frac{1}{2}$ by **1**, the answer is $\frac{1}{2}$, but here we have divided by a figure eight times more than $\frac{1}{8}$. Hence we must multiply the answer thus obtained by **8** and, thus again, by reasoning we get the answer, **4**. In actual working, the same result is obtained by inverting the divisor fraction and then proceeding as in multiplication, thus, $\frac{1}{2} \times \frac{8}{1} = \frac{8}{2} = \mathbf{4}$.

9. **Reduction of Vulgar to a Decimal Fraction.**—To illustrate this change, put the edge of the T-square against one of the Vulgar Fractions, say the $\frac{3}{4}$; look then at the division with which the same edge coincides in the Decimal Fraction scale. It is beyond the ·**7** line, and exactly coincides with the ·**75** line in the hundredths division. The Vulgar Fraction $\frac{3}{4}$ therefore is seen to equal ·**75**. Similarly the $\frac{1}{4}$ line coincides with ·**25** and the $\frac{1}{2}$ with ·**5**. It may also be shown that $\frac{1}{3}$ in the Vulgar Fraction divisions will not coincide with any of the lines in the Decimal Fraction divisions. It is somewhere between ·**33** and ·**34**.

The Metric System.

A lath, about 40 inches in length, divided on one side into feet and inches, and on the other side into **metre, decimetres,** and **centimetres,** is essential. Cardboard cubes, representing (1) a cubic centimetre, and (2) a cubic decimetre, will be of service in associating the measures of length with the **gramme** (weight) and **litre** (capacity).

D. Apparatus required for teaching Descriptive Geography.

1. *Globes* and *wall maps* are well-known appliances, and their description and use need not be enlarged on. The tendency to lessen the amount of matter printed on maps and to give a more natural appearance to

the vertical contour by shading, and finally, the use of more delicate and artistic tints in the colouring, are effects to be welcomed. English map-makers have not kept abreast of their continental neighbours in these respects. Outline maps and maps without names are very useful for purposes of revision. Some of these have been prepared on a blackened ground (silhouettes). They are very useful for filling in the additional geographical facts, as these are taught during the progress of a lesson. In order to give exact notions of direction (the teaching of which by means of a map is often erroneous), the meridian line should be marked on the floor of the school.

2. *Sketch maps by the teacher.*—These are, after all, the most effective appliances for a geography lesson. The map should be sketched as the lesson proceeds, and at the end it should show all the facts taught, and no more. The scholars should be encouraged to prepare similar sketches to illustrate the reproduction of their lesson in home exercises.

3. *Models.*—The physical aspects of a country or district are best illustrated by means of models constructed of moist sand, of putty, or of Parian cement; the latter does not dry so quickly as plaster of paris, and is for this reason more readily moulded. Paper-pulp models are durable and light; they can, furthermore, be readily tinted and written upon.

   The most difficult model to prepare will be that of the immediate surrounding of the school; at the same time, no other model will be so serviceable for educational purposes. In preparing this, help should be obtained from the ordnance map of the district. The relative positions and heights of important features are recorded on this map, and it therefore supplies the necessary data for the construction of a correct model. Unless the features surrounding the school are very bold and striking, it will be necessary to exaggerate the vertical scale considerably; an attempt, however, should be made to do this uniformly, and a drawing of a vertical section across the model, done to the natural scale, should accompany the model for purposes of comparison. A meridian line should be drawn on the school floor or ceiling and the model should be placed so that its north and south points agree with those on the line.

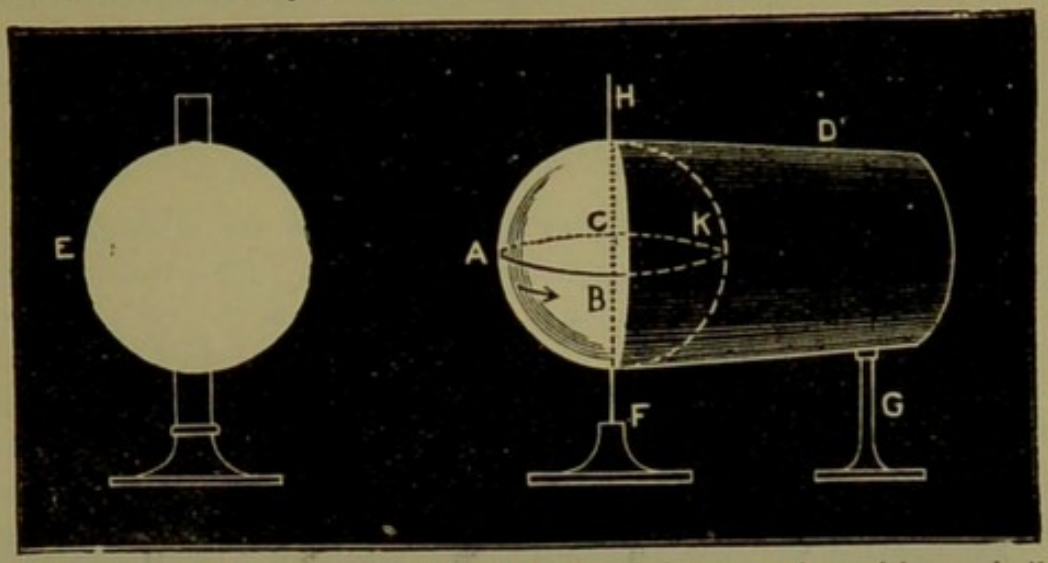
4. *The School Journey.*—A means of teaching physical and descriptive geography has been introduced during recent years into the training course at Westminster. This first-hand acquaintanceship with geographical features, together with the attempt to associate each prominent geographical fact with the natural conditions causing it, enhances the interest in the acquisition of geographical knowledge, and, at the same time, raises the study into the realm of scientific enquiry.*

E. Apparatus for teaching Astronomical and Physical Geography.

1. *Introduction.*—The phenomena of day and night, the seasons, the relative positions, sizes, and movements of the planetary bodies, the eclipses and tides and ocean currents, are dependent upon operations

* A fully illustrated account of this mode of teaching Geography is now published entitled 'The School Journey.' It can be obtained through Messrs. Simpkin, Marshall & Co. Ltd., and the Westminster School Book Depôt, S.W.

which occur on too vast a scale both of time or space for children to observe them. The apparatus available for assisting the learner to realise these grand movements in nature is very complicated and expensive. That which can be made by the teacher himself is best adapted to the purposes of instruction. Apparatus thus prepared is of great interest both to the teacher and the class; moreover, it will be made for special ends, and all considerations not conducive to those ends will be carefully excluded.*



F and G are wire mounts. They hold the ball and the screen in position and allow the teacher's hands to be free to turn the ball by means of the extended wire at H.

2. *Day and Night.*—A plain globe and a cylinder made of blackened cardboard, constructed so as to enclose one half of the globe, serve admirably for illustrating the phenomena of day and night.

3. *The Seasons.*—Two globes fitted with cardboard cylinder screens as above, and placed (with their axes inclined $23\frac{1}{2}°$ in the same direction) on opposite sides of a light to represent the position of the sun, bring out clearly the causes of the seasons, viz., the earth moving round the sun with an inclined axis, constant in direction.

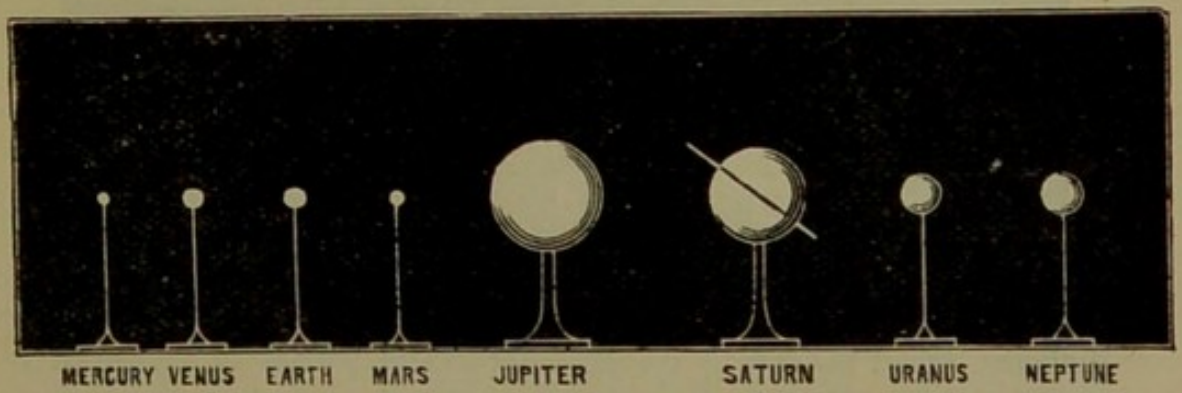


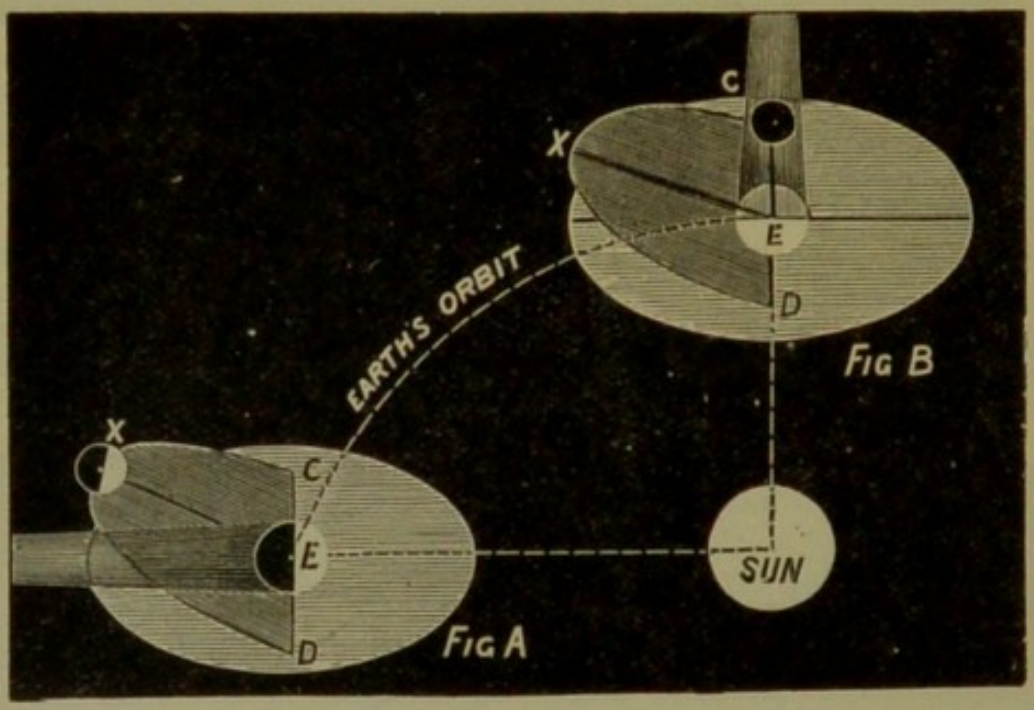
Diagram of models drawn to scale illustrating the relative sizes of the bodies named.

* A complete set of diagrams illustrative of such appliances as are needed for teaching the above is found in the author's *Graphic Lessons in Physical and Astronomical Geography.* The appliances therein illustrated are home-made; they were exhibited at the International Education Exhibition, London, 1884, and gained the 'Diploma of Honour.'

4. *The positions and relative sizes of the planets.*—Simple apparatus consisting of balls turned to scale, and then mounted on wire as in the above diagram, illustrates the positions and relative sizes of the planets.

5. *The phases of the Moon.*—The changes in the moon's appearance during its progress from *new* moon, through *crescent*, *half*, *gibbous* and *full* moon, and back again through gibbous, half, and crescent moon to the *new* phase, are well illustrated by mounted balls, one half being painted black, and one half yellow. These balls should be placed round a globe representing the earth, and should be placed with their yellow halves turned in the direction of the sun.

6. *The Eclipses of the Sun and Moon.*—These are amongst the most difficult phenomena of Astronomical Geography for a learner to understand, and very little advance is possible without the aid of apparatus. The following home-made appliance has been devised and found successful. Take a cardboard or wood surface to represent the earth's orbital plane, and cut out the ellipse representing the earth's orbit.



Then at the positions occupied by Figs. A and B, as in the annexed diagram, insert differently coloured cardboard planes to represent the moon's orbit. (The horizontal and lightly shaded planes in the figure represent portions of the plane of the earth's orbit; the oblique and deeply shaded planes are those of the moon inclined 5° to that of the earth.) By means of turned balls, represent the positions of the sun, and the positions E and E of the earth—an interval of three months being supposed between the two positions of the earth. The movable

balls C and X, in figs. B and A respectively, represent the moon; there ought not to be much difficulty in showing that the moon must enter the earth's shadow at C when the satellite is in *full* phase, and that it will escape being eclipsed when *full* and in the position X. In this way it may be shown that the moon is eclipsed when full and at or near its node.

7. *Remaining Apparatus.* (1) A long trough with glass sides, three-parts filled with tepid water, and fitted with an ice box at one end to admit coloured iced water, illustrates the interchange of water between the poles and the tropics. (2) A model of the Atlantic or Pacific Ocean filled with water in the depression, and fitted with leaden pipes to direct a current of air blown through them by means of bellows, and made to take the direction of the 'Trade winds' and 'Anti-trades,' will cause a set of artificial water currents in almost perfect imitation of the currents found in the Atlantic and Pacific Oceans respectively.

Objects and pictures.

The objects necessary in a geography lesson are specimens of the mineral and vegetable productions of the countries described, together with the stages of manufacture through which the raw material passes before assuming the finished article. Only those of importance in the productions and commerce of a country need be treated in this detailed manner. Pictures are very valuable aids to the mastery of descriptive geography. Photographs of natural scenery are being cheaply produced, and may be expected to become of service in the acquisition of geographical knowledge in the near future. They will be of especial value if hung so that children may inspect them at their leisure.

The picture, whether a photograph or a drawing, should as far as possible be associated with a map of the scene. The map and atlas will, in the end, be the most convenient form of preserving and recording the facts of physical and political geography, and its association, therefore, with model and picture should be as constant as possible, until the symbolic form of presenting geographical facts (*i.e.*, the map) sufficiently calls up the geographical features it illustrates.

F. Object lessons and Varied occupations for Standards I., II., and III.

The introduction of Object lessons and 'Varied Occupations' into the work of Standards I., II., and III., will necessitate the use of objects and materials suited to the courses selected. The Education Department have issued circular 369, giving specimen and suggestive courses of lessons (see p. 198 and also appendix p. 240).

CLASSIFICATION.

1. Introduction.

A class is a number of children of equal or nearly the same attainments, grouped together for purposes of collective instruction. In large schools it is possible to secure the most effective classification, a sufficient number of children of equal attainments and ability being present to form a group capable of profiting by the same instruction. In small schools, on the other hand, the teacher is often compelled to group together children of varying knowledge and of unequal ability. In the former case all the advantages of class teaching are secured, whilst in the latter the disadvantages are fully manifest.

2. Advantages of class instruction.

When children of equal ability and attainment are taught together, the fullest effect of the teacher's work is secured, and the instruction imparted to each pupil is rendered both continuous and direct. A class stimulates the teacher to the exercise of his best effort, and rouses each pupil to fullest activity. Children working side by side at the same lesson desire to do themselves what they see others do, and thus to keep their respective positions in the class. This feeling of emulation is natural to all, and is utilised by the class teacher in his effort to obtain the united and constant application of his pupils.

Children are often influenced more by the ability to acquire which their class-fellows manifest, than by the mere display of knowledge on the part of their teacher. Whilst instructing a class, a teacher rarely fails to carry the intelligence of some of his pupils with him; the knowledge thus acquired by the more active scholars is most effectively imparted to the slower members by a clever scholar's statement of it. Further, the presentation of new matter, first by the teacher, then by the apt scholar, and finally, by the less successful pupil, is a direct gain to the permanence of the knowledge imparted. This varied form of repetition, whilst it secures permanence of effect, does not carry with it the personal reproach which would be felt by the slower members of a class if they alone were called upon to make the repeated effort.

3. Dangers to be guarded against, and objects aimed at, in class teaching.

A few scholars are generally found in every class who make rapid progress on account of their natural aptitude for ready acquisition. The teacher must guard against accepting the mental condition of these clever pupils as that of the entire group; for if he do this frequently, the slower members, by reason of their failure to grasp all that is presented to them, will soon lose heart, and instead of the entire class being taught, a section only will be benefited. Considerable tact on the part of the teacher is required in order to bring forward the slower members of the class, and at the same time to maintain the active co-operation of the rest. Again, the ease with which information may be presented by the teacher, compared with the tact and resource demanded for its complete acquisition by his class, explains the great temptation which class instruction offers for the teaching to assume the form of a lecture rather than that of a lesson.

The art of teaching a class mainly consists (1) in supplying a certain amount of information, or of providing an illustration, or of performing an experiment; (2) in fixing the thought of the members of the class upon facts and experiments, so that they shall seize the truth illustrated, or the law explained, and (3) of providing an effective review of facts, illustrations, and experiments, together with the truths or principles with which they are connected, so that the entire class shall understand them, and at the same time feel that they have themselves done something towards both acquiring the facts and establishing the truths.

4. Classification affected by mental inequality, and by school organization.

It is not difficult to group children in suitable classes for any one subject of instruction—for example, reading—but in consequence of the unequal progress made by scholars of the reading group in some other subjects—arithmetic, for example—it will be found that the best classification for reading may not be best also for arithmetic. In theory it may appear well to have a separate classification for every subject. Such a

classification, however, would need a re-arrangement of the groups for every lesson, and would further require that throughout the school the same subject should be taught in all the classes at the same time. This *synchronous* method of working can be readily adopted in schools organized on the Prussian or class-room system. In those, however, taught by a mixed staff of pupil teachers, assistants, and certificated teachers, where, in order to secure the complete supervision and training of the pupil teachers, it is advisable that two or more classes be at work in the same room, the synchronous system of working cannot be easily adopted in its entirety. In all such schools it becomes a matter of careful enquiry as to how often it may be necessary to change the classification of the scholars, in order to secure a grouping most effective for instruction in different subjects, and at the same time best for the harmonious and efficient working of the whole school. In all small schools where a mixed staff is employed the following conditions will be found generally applicable, viz., (1) that the fewer the changes in classification adopted the better, and (2) that each subject demanding a re-classification be taken at the same time throughout the school.

5. Bases of classification.

It may be well to apply the general conclusions arrived at above to the case of a school with a mixed staff where the subjects of reading, writing, arithmetic, drawing, and two additional subjects are attempted. In such a school we may select *Reading* as the chief basis of classification; it will then be found that spelling, geography, and either elementary science or grammar may very well be taken on the reading classification. There is then left for consideration the subjects of arithmetic, writing, and drawing. The first demands a separate classification, and must therefore be taken throughout the school at the same time. This re-grouping of the scholars for arithmetic is readily effected when the children assemble after play, and it may remain in force until the end of the morning session. For the drawing and writing lessons a similar method of re-grouping might follow the afternoon playtime, and remain in force until the dismissal of the school.

Summarizing the above, the bases of classification forming a practical scheme for the effective working of most schools are as follows :—

1. **Reading,** with Spelling, Grammar, Geography, or Elementary science.

2. **Arithmetic.**

3. **Writing** and Drawing.

In schools taking specific subjects and manual instruction, the former may generally be taken on the reading classification. This follows from the fact that the intelligence of a pupil is frequently found to bear a striking relation to his or her ability to read. In manual instruction the classification should take some account of the size and muscular development of the scholar. As no child under 12 will, as a rule, be allowed to take the course very little difficulty will be experienced in classifying the pupils in this subject on the basis of individual proficiency.

6. The special difficulties of classification in small schools.

In schools with an attendance ranging from 70 to 120, the difficulties of classification are very great. This arises from the fact that the classes exceed in number that of the staff. Children whose different attainments would warrant their being distributed over two or more classes, are brought into one group under the same teacher; thus Standards I. and II. are frequently placed under a senior pupil-teacher, whilst the head-master is responsible for the group embracing Standards IV., V., and VI., and possibly a few of Standard VII. In these cases of extreme difficulty, and they form a large proportion of the rural schools of England, the teacher finds his chief relief in the variety of work which he is able to provide at the same time for the different standards in any given group. For example, Standard IV., in his own division, has had class instruction in writing, whilst Standards V. and VI. have been writing out, as a spelling exercise, the most difficult words of the passage to be read. The head-teacher now leaves the writing class in charge of a monitor, whilst he proceeds to take the higher class for reading. After the reading lesson, with its accompaniment of explanation of new or unknown

words, has proceeded for the space of half an hour, the teacher may require his reading class to write out the difficult words he has explained, together with their meanings, whilst he proceeds to the writing class to examine their work, and perhaps to supplement the instruction imparted at the beginning of the lesson. When, in turn, the Fourth Standard takes the reading lesson, the upper division of the group may be set to copy-book writing, and now the attention of the teacher may be mainly concentrated upon the work of Standard IV., diverting from them only such effort and time as may be needed to stimulate the higher class to a careful writing exercise. In this way, by varying the work of the different divisions of his large group, he is able to distribute his own teaching over the greater number of pupils, and to place himself at the lesson which more especially requires his skilled and immediate direction.

With the synchronous method of teaching—a necessary condition whenever children are grouped afresh for different subjects—this advantage arising from the variety of work disappears. The teacher in the case above, if working by the synchronous method, would need to devote his attention equally to the two divisions of the group for both the reading and the writing exercises, whereas it is seen that the teacher may obtain better results by devoting two-thirds of his time to reading in both groups, leaving about one-third to be devoted to the exercise of writing. Besides the above consideration there is another of almost equal importance, viz., that of securing the orderly working of a number of classes in the same room. For example, when two classes, in proximity, read at the same time, they are apt to disturb one another, whereas one class may read near another engaged in writing without disturbing the latter.

It may be said that teachers ought not to be required to devise means for overcoming difficulties like the two mentioned above, and that all such difficulties would disappear were schools made sufficiently large, and provided with a sufficient staff. In reply it is only necessary to state that rural schools must in very many cases be small schools, and the difficulties in organizing and teaching them are not cleared away by saying that these schools ought to be large. The difficulties can never be entirely removed. The way to lessen them forms an interesting problem for the student of school management to solve. In these cases evidently a compromise must be effected. It will be almost

impossible, even if it were desirable, for the teacher of a small rural school to place his scholars in a different class for every subject; at the same time, he must recognise, in some way, the truth that children do not make equal progress in every subject; hence he must avail himself of the liberty of classification he possesses for re-grouping his scholars wherever he finds he can do so with advantage. In practice it will be generally found that a two-fold classification on the *reading* and *arithmetic* bases in the morning session, and on the reading and drawing bases in the afternoon, affords a variety of classification of reasonable service in the pupils' instruction, and of least complexity in the organization and mode of working the school.

7. Classification of large schools, and some dangers which it is well to avoid.

It has already been pointed out that in large schools organized on the class-room or Prussian system the fullest advantage may be taken of classification according to attainment. All the classes may very well be at work throughout the morning hours of the day at the same subject. At each change of lesson it will be easy to transfer a few children from each class to those classes better suited to their proficiency, and as a result the classes will be maintained in the possession of children of equal or nearly equal proficiency. This result at first sight appears most satisfactory; it is not, however, without its dangers, and these should be carefully guarded against. In the first place, the class as a whole loses the stimulus which the more able members provide. It is true that the industry and progress of the clever members of a class should eventually be recognized by promotion; their removal will, however, for a time weaken the stimulus to effort their presence has afforded. Again, the transference of children to different classes for different subjects will lessen the desire on the part of both the pupil and teacher to concentrate effort upon subjects in which the scholar is defective, amends for deficiency in certain branches of study being made by more than ordinary advance in others. Lastly, the removal of pupils for special subjects too frequently may result in a one-sided education—a wise and even advisable course to be followed only after a good all-round attainment has been reached.

The promotion of the scholar who in the first half year has completely mastered the whole year's work is undoubtedly a great boon to teacher, to scholar, and to class. To keep such a pupil at the effort of revision for the remaining half of the year is a strain on the pupil's obedience, and no

the teacher's authority; furthermore, it is a discouragement to effort on the part of the pupil himself and that of the other members of his class. On the other hand, the promotion with the class of a pupil year by year who is unable successfully to accomplish the work in the allotted time is disheartening to the scholar; he becomes discredited in the eyes of his fellows, and owing to the repetition of effort which his dulness demands, he becomes a hindrance to the progress of the whole class. In each of these cases removal to other classes is followed by the greatest advantage; at the same time, care must be exercised not to make small differences of proficiency and progress a reason for immediate and frequent removal.

8. Summary of conditions which must be taken into account in fixing upon any mode of classifying the school as a whole.

1. *The building.*—(*a*) If each class has its own room and is provided with a competent teacher, the classification may be such as will allow every child to be placed for every subject in the class best suited to its attainment in such subject. If changes are made in the grouping for every subject of school instruction, the school should be organized so that the same subject is taught throughout the school at the same time. Such classification is termed *multiple* or *manifold,* and the organization is that of the *synchronous system.* (*b*) In buildings with but small class-room accommodation, and where two or three or even more classes are taught together in one large room, the orderly working of the classes will necessitate either the dual or a modification of the tripartite mode of working during the greater part of each day. In the latter case one group would be with the head teacher for oral instruction in either a class or a specific subject; another class would be occupied in the desks, or in silent exercises such as dictation, transcription, writing in copy books, and the reproduction of an oral lesson, whilst a third class might be reading in the class-room. Towards the end of the morning, or better still at the commencement of secular instruction each day, all the classes might be arranged in their arithmetic groups, this subject being taken throughout the school at the same time. For drawing and writing, a re-arrangement might be made in the afternoon. In the school whose working is thus detailed the classification is a three-fold one, being based upon reading, arithmetic and writing or drawing respectively; the organization is two-fold or mixed, being synchronous for arithmetic and drawing, and tripartite, or a modification of the tripartite system, for other subjects.
2. *The Staff.*—Classes must not be more in number than can be efficiently officered. In the lower classes where scholars have not acquired the power of independent effort, a teacher must be constantly in charge;

in the upper classes the effect of good discipline should show itself in the ability children manifest to work for a time independently of constant and immediate direction. Good discipline renders possible the successful working of two or more classes under the direction of the same teacher. This doubling of classes is permissible on the assumption that either the subject allows of both groups receiving the same instruction, as is the case with geography after the initial stages are mastered, or, if the classes take different parts of the same subjects, that the classes are capable, in turn, of independent effort.

3. *Size of classes.*—The classes must be made neither too large in numbers, nor too varied in attainment for one teacher to manage and teach. The size of the class must also be made to depend somewhat upon the subject of instruction. For example, individual reading is best secured when the class is small. Singing is best taken with a large group; but drawing, in which individual direction is necessary, must be taught in smaller classes.

9. Special conditions to be taken into account in classifying individual pupils.

1. *The attainment of the pupil.*—This is the prime consideration to be taken into account. Anything in the organization of the school which prevents every pupil taking his class position according to ability and knowledge must be looked upon as an evil to be removed as quickly as possible.
2. *The age of the pupil.*—Attainment, as has been stated, is the all important condition for position in any class; at the same time, a big boy whose education may have been neglected should be placed as high as his ability will allow, and progress should be stimulated by removal as frequently as his condition of knowledge will permit.
3. *The health of the pupil.*—A scholar whose bodily condition is weakly must not be kept in a condition of too great a mental strain. With children of an excitable temperament, intellectual activity should not be stimulated by too rapid an advance through the classes of the school.

SCHOOL STAFF.

The recognized teachers who may be employed in any elementary school, and thus form the school staff, are—(*a*) certificated teachers; (*b*) provisionally certificated teachers; (*c*) assistant teachers (including provisional assistants); (*d*) pupil-teachers; (*e*) probationers; (*f*) additional teachers (women); and (*g*) evening-school teachers. In determining the staff of any particular school, it is necessary to take the

following conditions into account, viz., whether the school is for boys, for girls, or for infants respectively, or whether the school is mixed and intended to accommodate boys, girls, and infants collectively. There is the further consideration of the number of scholars for which, according to the Code regulations, each member of the staff may count. With respect to the latter, the Code of 1897 states (Art 73)—

'In estimating what is the minimum school staff required, the Department consider :—

	Average Attendance.
'The principal teacher sufficient for	50
Additional certificated teacher for	60
Assistant teacher	45
Provisional Assistant	30
Additional teacher (woman)	30
Pupil-teacher	30
Probationer	20

As a guide to the distribution of the several grades of teachers according to the size and kind of school, *i.e.*, whether mixed or otherwise, the following suggestions are taken from official forms :—

Average attendance not exceeding	Principal certificated teacher (50)	Additional certificated teacher (60)	Assistant teacher (45)	Provisional assistant, pupil teacher or 'Woman over 18' (30)	Probationer (20)	Maximum number for each staff
100	1	—	—	2	—	110
160 a	1	—	1	1	1	145
160 b	1	—	1	2	—	155
200 a	1	—	2	1	1	190
200 b	1	1	—	2	1	190
260 a	1	1	1	2	1	235
260 b	1	—	2	3	1	250
300 a	1	1	2	2	1	280
300 b	1	—	3	2	2	285

In a note affixed to the official form it is significantly stated that this staff is not sufficient to produce the highest results in any school.

In order that a school may be properly organized, *it should be arranged that* the number of children *habitually present at any one time*, under the *instruction* of any teacher or teachers, should not exceed by more than 15 per cent. the number for which such teacher or teachers is or are considered to be sufficient.

Qualifications of Head Teachers.

Head-teachers in all day schools with an average attendance of more than 50 scholars must possess certificates from the Education Department. These are granted to King's scholars and teachers who (1) pass successfully the certificate examination, (2) present birth and medical certificates, and (3) who undergo probation by actual service in schools. The conditions of the examination for certificates demand some preparation in the art of teaching from all who present themselves; non-pupil teachers who obtain a King's Scholarship or who pass the London Matriculation and other University Examinations and enter a Training College may obtain certificates with an experience of actual teaching in schools limited to a period of six weeks. The Code recognizes graduates who hold certificates of proficiency in the Theory and Practice of Teaching approved by the Department, and Irish Teachers, Trained, with 1st Class Certificates, as certificated teachers in English Elementary schools.

There are other and higher qualifications for successfully conducting and teaching a school than those of experience and knowledge. They have been already referred to in the chapter on School Discipline.

Duties of Head Teachers.

These must necessarily vary with the size of the school. In a small school very much of the work of teaching must be done directly by the master, and but little of general direction and stimulus of subordinates will be needed; in a large school, on the other hand, the greater portion of the teacher's effort must be devoted to the direction of his subordinates, and but little time will be left for actual teaching. It has, however, been held in previous chapters that it is of the utmost importance to the thorough and efficient working of a school that the head-teacher should, even in the largest schools, frequently make himself responsible for the teaching and control of one or more of the divisions of his school. By this means alone may we hope to make progress in the teaching art. The multiplication of large schools, attracting the most successful teachers, instead of providing such teachers with the conditions in which to make further advance, tends to withdraw them from further teaching effort; and in consequence, the younger members of the profession, by having subordinates only for their patterns, may lose immensely. Besides setting the highest standard of

professional excellence, and thus stimulating in the most thorough and practical manner the teaching efforts and aims of his subordinates, the head-teacher must undertake the following duties:–

(a) The construction of the Time Table.

The sum of conditions involved in this duty is stated under Time Tables.

(b) The appointment of subordinates to their several classes.

This duty demands much judgment, and sometimes no little tact. A really effective and successful subordinate teacher is of immense service, not only for the work he does himself, but for the example of success which he sets the others. His removal to strengthen the work of a weaker teacher is sometimes advisable, and then considerable tact is required to adjust matters agreeably to all concerned.

(c) The curriculum of work.

This has frequently to be determined for several months in advance. Courses of study need to be mapped out. The books and material necessary for successful work must be obtained. Schemes for the regular examination of the work done must be devised, and the results of such examination recorded.

The substitution of inspection for examination will necessitate the keeping of very complete records of the work of individual scholars. Each pupil should be provided with a well-bound note book. In this book his daily work should be dated and preserved. All examination papers and the tabulated results of each examination should be kept ready for immediate production. This exhibition of steady, progressive, and continuous work will provide the inspector (who calls without notice) with material upon which he will be able largely to base his estimate of the school and its work.

(d) The instruction of pupil-teachers.

This part of the teacher's duty, so far as book work and study are concerned, may be transferred to special teachers in central classes. The strictly professional training, however, must always devolve mainly upon the master of the school in which the pupil-teacher is engaged. In order to have the superintendence of pupil-teachers at all, it is necessary to have passed in the papers of the second year, and be recognized by the Department as suitable. A third division certificate must be raised to the higher division, qualifying for the superintendence of pupil-teachers, by subsequent examination. A significant note to Art. 62 of the Code states that 'the right to superintend pupil-teachers may be suspended or withdrawn, if the Department, on the report of the Inspector, consider that a teacher has neglected his duty in this respect.'

Pupil Teachers may receive their instruction in Secondary Schools under conditions approved by the Department. They may be engaged in schools where the principal teacher is certificated but not entitled to superintend them, provided (1) they are taught in central classes and (2) the teacher is specially recommended by the Inspector for practical skill.

* Graduates and Irish Teachers who qualify as certificated teachers may superintend pupil teachers.

(e) The marking of registers.

The head-teacher alone is held responsible for entries in the admission register, and in the log-book. The marking of the daily attendance register may be done by pupil-teachers after having completed their second year of apprenticeship, but the head-teacher will be held responsible for its being regularly and properly kept.

(f) The general discipline of the school.

It has already been pointed out that the discipline of the school will largely depend upon the tact and skill in management which the head-teacher displays. There are special features in school discipline which the teacher cannot, with safety, delegate to his subordinates. All references to parents respecting the attendance, the behaviour, and the progress of the pupils should be made on the responsibility of the head-master.

Assistant and Provisionally Certificated Teachers.

Assistants may be either of the following classes:—

1. Pupil-teachers and others who have passed the King's scholarship examination. All persons qualified as assistants under previous Codes will continue to be recognized as such.
2. Graduates of any University in the British Empire, or persons qualified by examination to become graduates, and persons over 18 years of age who have passed University and other examinations, Irish teachers certificated Second Class by the Commissioners, and those certificated (First Class) but not trained. Also those recognised in the first or second grade by the Irish Commissioners of National Education.*

The above Assistants, if recommended for practical skill, may take charge of schools of not more than 40 in average attendance for purposes of an annual Government Grant.

When pupil-teachers have obtained a place in the first class in the Queen's scholarship examination, they may, on the completion of their engagement, if specially recommended by the Inspector on the ground of practical skill as teachers, be recognized as **'provisionally certificated teachers,'** and as such may have charge of schools under 50 in average attendance. Provisionally certificated teachers cease to be recognized after the completion of the school year in which they complete the 26th year of their age, or after two reports of inefficiency. Persons who passed the 1st year's certificate examination, June 6th, 1891, or subsequently, are also recognized as 'provisionally certificated.'

Graduate and undergraduate assistant teachers after one year of service, and 'women over 18' after two years of service as assistants and after passing scholarship in the first class, may become 'provisionally certificated.'

Provisional Assistant Teachers.

Persons who have completed their engagement as pupil-teachers, but have failed at the King's Scholarship Examination

* See New Code, Art. 51.

during their engagement, may, on the special recommendation of the Inspector, be recognised as provisional assistant teachers during the two years immediately succeeding the last examination taken by them during their engagement. They count for 30 in average attendance.

The period of assistantship is frequently the most trying of the teacher's entire professional career. The assistant is frequently, and very wisely, placed over the lower classes of the school; at the same time, his own studies are more in harmony with the work of the upper classes. The work of teaching in these lower classes is within a very limited range, and he is familiar with every stage of it. Carrying out the plans of another, he does not realise the full effect of his own success. He needs much patience and not inconsiderable enthusiasm (especially if he work throughout the year with the same scholars in a class-room) to keep that cheerful and hopeful spirit so necessary to the bright and happy work of his class. The association of a pupil-teacher with an assistant—the two being responsible for a group of from 70 to 80 scholars—provides more variety of work for the assistant, and at the same time gives him the opportunity for a more complete preparation for the duties of head-master.

> The assistant will find considerable relief, so far as school duties are concerned, in taking part, whenever opportunity occurs, in matters relating to the general welfare of the school, *e.g.*, the control of the playground; drill and singing exercises; relief of a fellow teacher; preparing by special work for any new development in the school curriculum; school entertainments, &c. The class teacher who shuts himself up simply to do the work connected with his own section, and who never manifests a desire to share in some of these extra duties, may do the work of his class very well indeed; he may, however, expect to be limited to the work he does so well.

Pupil-teachers.

The number of pupil-teachers in any school is limited to three for the principal teacher, and one for each additional certificated teacher. The Code makes it incumbent upon managers and teachers to take care that pupil-teachers are properly instructed during their engagement. The right of the managers to continue the engagement of pupil-teachers is threatened if they neglect their duty in this respect. The teacher also may lose his right to superintend them, and the pupil-teachers themselves, after two consecutive failures to pass the examination required, may be no longer recognised by the Department. It is evident from these regulations that the Department expects

generally that increased attention shall be devoted to the instruction and professional training of pupil-teachers.

No candidate Pupil-Teacher will be admitted for an engagement of more than three years except where the Inspector specially consents to their admission under 15 years of age. In the latter case the examination will be the elementary subjects of Standard VII. together with the elements of Geography, Grammar, and History. Candidates who have passed the Local Exams. for Junior Students or the Second Class Certificate Examination of the College of Preceptors or other approved examination not more than two years previously may enter for one or more year's pupil teachership, provided at the end they are over 18 years of age.

The choice of a pupil-teacher.

In some localities it is extremely difficult to secure the boy or girl who promises to make a successful teacher, because the qualities which make the good teacher are those which in most other occupations command success. As a rule, the pupil-teacher who is to succeed as a teacher must have made a good position in the school as a scholar. Besides good intellectual attainments, he should possess a cheerful and buoyant spirit, should manifest a sympathy with child life, be thoroughly at home in the sports and pastimes of the scholars, and be free from bodily defect. The influence of the home training of a pupil-teacher should not be overlooked.

The school work of a pupil-teacher.

It is a mistake to suppose that the work of the lowest class is the easiest and, therefore, the fittest for the pupil-teacher. These children require more skill and more patience than those in the higher classes. The higher classes, again, from which the pupil-teacher has recently been withdrawn, should not be put under his tuition; these would be sure to rebel, and nothing is more likely to be fatal to the prospects of the beginner than frequent failure at the outset. The pupil-teacher's proper sphere is amongst the classes midway between the upper and lower divisions of the school. With these classes, again, he should at first merely help an older teacher, and gradually, as his ability develops, he should be entrusted with the more responsible work of independent management and tuition.

A pupil-teacher is required to serve in keeping and teaching in his school not more than five hours upon any one day, nor more than 20 hours per week.

*The instruction of pupil-teachers.**

Under the new regulations already referred to, it may be expected that considerable stimulus will be given to the intellectual training of pupil-teachers. There are already several organizations at work whose aim it is to systematise the studies

* A digest of the 'Memorandum of the Department,' February, 1891, on the instruction of pupil-teachers, is printed in the appendix.

of the pupil-teachers, and to bring both them and their studies under the direction of specialists. As a result of this direct and systematic tuition, and of the competition of pupil-teachers with each other in centre-classes, a considerable advance may be expected in their intellectual attainments. It must, however, be borne in mind that if the pupil-teachers' intellectual training is to be thus stimulated, their teaching responsibilities must be lightened. Up to a certain point this balancing of matters in the direction indicated will be of advantage to both the teachers and their scholars. Care must, however, be taken not to push the intellectual effort so far as to produce clever pupils who have lost touch and sympathy with the work of teaching.

Any systematic course of instruction for pupil-teachers should take into account:—(1) the number of subjects of study; (2) their relative values as shown by the Department's scale of marks; (3) the admixture of subjects so as to secure the advantage arising from variety of exercise; (4) the condition of the pupil's knowledge in the different subjects; (5) the time required for the examination of the work done; and (6) the time for private study at the disposal of the pupil.*

The number of subjects and their relative values have been as follows:—

	Total
Reading 40, **Recitation** 40, **Spelling** 40	= 120
Arithmetic	= 100
Mathematics: **Euclid** 60, **Algebra** 60, **Mensuration** 20 ...	= 140
Grammar 80, **Composition** 40	= 120
History 80, **Geography** 80	= 160
Teaching: Good, Fair, Moderate or Fail.	
Music: Theory 15, Practical Skill 25; **Needlework**: Garments shown 40, Examination in 60	= 140
Elementary Science	= 50

Suggestions for a course of pupil-teacher study.

1. The subject demanding most attention is that of arithmetic, including the mathematical subjects of euclid, algebra, and mensuration. A selection from these should occupy not less than an hour per day.
2. In order to get a variety of subjects for study, grammar, geography, history, and school-method may in turn be associated with the mathematical subjects. Each subject should be taken twice during the week, and one hour per day be allowed for one or more of the four subjects above-named.
3. The work thus far arranged would demand 2 hours' study per day for six days in each week. Some time must be obtained for religious instruction and music, and for needlework for girls. The Saturday mornings might be available for these subjects, and for one science subject and a language.
4. The subjects remaining are reading, penmanship, composition, and spelling. As good handwriting enhances the value of all the other papers, the wisdom of paying more attention to this subject

* After April, 1902, pupil-teachers will not be required to pass any examination after admission until the final or King's Scholarship Examination.

becomes evident. Composition finds sufficient notice if all the reproduction exercises in history, geography, &c., are made with a view to each being an exercise in composition and style. Marks should be given for the style and composition as well as for the matter in the exercises on these subjects. Spelling, similarly, should be involved in the reading and composition exercises. Reading should find a place every day in the review exercises. Whether the pupil is reading his own composition or that of some author, the effort should be always with a view to proficiency in the art of reading. The recitation exercise would be a special study in expression and style. The *general reading* of the pupil-teacher should be directed. Note-book records such as the following might be encouraged, viz.: (1) Title and author of the book; (2) Date of beginning and finishing the reading, and (3) A short criticism of the matter and style of the work read.

5. The two hours per day stated above are intended for the private study of the pupil-teacher. The time for review of work done, and for special instruction in new work under the head-teacher, must not be less than five hours per week. 'Such special instruction, and any instruction in secular subjects given to the pupil-teacher during school hours, must be in subjects in which the pupil-teacher is to be examined pursuant to the Code.'
6. The value of the criticism lesson, as a means of encouraging the practice of the teaching art, has already been referred to. The friendly advice and direction by the teacher during and after his pupil's teaching, and the opportunities given to observe and note the methods of teaching used by his superiors, will form the best training in actual teaching.

The above articles afford suggestions for the construction of a pupil-teacher's time table.

Probationers.

Probationers over 13 years of age count on the school staff for an average attendance of 20 scholars each. They must be approved by the Inspector and be employed with the intention that they subsequently become pupil-teachers and must produce certificates of health and character. Probationers may be retained until they become eligible as pupil teachers, or until they are 16 years of age. They will be allowed to teach only half the time the school is open and must receive suitable instruction during the term of their engagement.

Besides the above members of a school staff, the following persons may be employed, and their payment out of the school income will be allowed by the Department:—

1. **An additional teacher** (**woman**) over 18, and approved by the Board, may take the place of a pupil-teacher in a school, and may count for 30 scholars. She must be employed in the school the whole day, and take part in the general instruction of the scholars and in teaching needlework. An engagement in a boys' school needs the special approval of the Board.

2. **Monitors** for temporary employment in place of teachers causing vacancies during the school year, each monitor counting as equivalent to a pupil-teacher, 'provided always that the vacancies are supplied not later than the first day of the next school year by the appointment of duly qualified teachers.'

3. **Organizing teachers,† and peripatetic teachers** of drawing, manual instruction, drill, cookery, laundry-work, or any other special subject, employed by the managers of several schools, are allowed by the Department to have their salaries paid out of the school funds.

Vacancies in School staff occurring during the School Year.

Whenever these occur they should be duly, *i.e.*, immediately, reported to the Department. Temporary monitors will, in that case, be allowed to supply the vacancy under the conditions stated above. Notice must at once be given of the appointment of a new teacher, and the name of the school in which the new teacher was last employed should be specified. The Board will allow an interval not exceeding three months (exclusive of ordinary holidays) between the leaving of one and the coming of another qualified teacher to take charge of a school, provided the school is kept open and the registers are duly marked during the interval.

SCHOOL CURRICULUM.*

In the code of 1900 the curriculum for schools of older scholars has been recast, and the arrangement of subjects into *elementary*, *class*, and *specifics* has disappeared. The list of subjects and the order in which they are to be taught remain practically as before. The following is the new arrangement:—

i. *To be taken, as a rule, in all schools:*—**English,** by which is to be understood reading, recitation, writing, composition, and grammar in so far as it bears upon the correct use of language, **Arithmetic**, **Drawing** (for boys), **Needlework** (for girls), lessons including **Object Lessons** on geography, history, and common things, **Singing**, as a rule by note, and **Physical Training (Schedule III. code).**

* Circular 322, issued February 6th, 1893, deals with the curriculum of Infant Schools. It is printed in Appendix, p. 234.

† This term includes teachers in P.T. centres

The above list includes the subjects previously known as the elementary and class subjects. Whilst all the subjects are, as a rule, to be taught in schools, it is not deemed necessary to insist upon all of them being taught in every class. It is further stated that 'one or more of them may be omitted in any school which can satisfy the Inspector and the Department that there is good reason in its case for the omission.'

ii. *One or more of the following to be taken when the circumstances of the school in the opinion of the Inspector, make it desirable:—*

Algebra, Euclid, Mensuration, Mechanics, Chemistry, Physics, Elementary Physic, and Chemistry, Animal Physiology, Hygiene, Botany, Principles of Agriculture, Horticulture, Navigation, Latin, French, Welsh, German, Book-keeping, Shorthand, Domestic Economy.

iii. Cookery, Laundry Work, Dairy Work, Household Management (for girls), Cottage Gardening, Manual Instruction and Cookery in seaport towns (for boys). When Manual Instruction is taken, suitable occupations leading up to it should be taken in the lower classes.

The subjects in paragraphs ii. and iii. are those which formerly were termed 'Specifics.' Grants are paid only for individual scholars who are suitably taught the subjects in paragraph iii. A block grant of 22/- or 21/- is paid for teaching subjects in paragraphs i. and ii. after considering the report and recommendations of the Inspector upon each of the following four points :—

(*a*) The suitability of the instruction to the circumstances of the children and the neighbourhood.

(*b*) The thoroughness and intelligence with which the instruction is given.

(*c*) The sufficiency and suitability of the staff.

(*d*) The discipline and organization.

At the beginning of each year a syllabus of the work in the subjects of paragraphs i. and ii. must be prepared and submitted to the Inspector. In order to guide teachers in drawing up a suitable scheme, the Board is prepared to supply typical schemes suited to schools in various circumstances.

SCHEMES OF INSTRUCTION.

The Board of Education has recognized the advisability of encouraging a wide area of selection in the schemes of instruction for schools in various circumstances. No less than eleven schemes are detailed in a small pamphlet issued by the Board.* These schemes are intended to serve as guides to teachers in preparing their own curriculum. They are merely suggestive, and the Board trusts that teachers will exercise their own discretion freely upon them. The liberty of selection thus accorded to teachers will necessarily involve them in considerable responsibility. Hitherto the Code has set out in somewhat rigid detail the course of instruction which all schools must follow. Now, however, the teacher (under the approval of the Inspector) must suit the curriculum to the circumstances and needs of his school.

*This pamphlet can be obtained upon application to the Board of Education, Whitehall. It should be carefully studied.

Variations in Schemes and their limits.

When the Schemes are carefully analysed it will be found that the variations are not so great as they at first sight appear. All schools must spend more than half their time in acquiring a fairly full and accurate knowledge of Reading (with Spelling), Writing and Arithmetic. Then, again, the schemes provide in all classes of schools a simple course of Geography lessons and lessons on Common Things and Elementary Science. Finally Grammar and History do not find place, as a rule, in any scheme until the classes in the middle and upper regions of the school are reached.

A Board of Education Memorandum recently issued states :—'The first object of the alterations in the Code is to extend the liberty of classification and of the choice of methods of instruction which teachers already possess. The other object, not less important than the former, is to make the course of instruction in all schools more comprehensive so as to give all scholars the rudiments of general information, while enabling the details of the instruction to be adapted to the special needs of various kinds of schools.

In all schools the rudimentary instruction admits of little variety, for in all schools the younger children must learn to read and to understand what they read, to express their own meaning correctly whether in speech or writing, and to acquire some mastery of the elementary processes of arithmetic. In all schools also boys should learn to draw and girls to sew, and both should learn something of their own country, and be taught to observe and to acquire for themselves some knowledge of the facts of nature. In this last detail of the course of instruction there will from the first be some variety ; for the "common things" that provide experience for a town child are necessarily different from those which a child can observe in the country. As the children grow older greater diversity will be necessary. In country schools lessons on the objects and work of country life are valuable that would be inappropriate in town schools, while in the latter, the instruction given in lessons on Common Things and in Elementary Science should be varied with reference to the probable future occupations of the children.

The course of instruction already pursued in many large schools probably needs little alteration. In some, the instruction in subjects hitherto styled specific, such as elementary mathematics or modern languages, may begin at an earlier age than at present. In others, for example in girls' schools in which needlework has been taken as a class subject, an enlargement of the scheme of instruction may be necessary. In the smaller schools, in which hitherto the instruction has been narrower in its scope, the changes proposed may seem greater. But if the scheme of lessons is made more comprehensive, the lessons in each branch of learning need not include such minute details as when fewer subjects were studied. Teachers of small schools who have to depend for the most part on their own resources need not fear that any addition is to be made to the work, already sufficiently arduous, that is required of them. On the contrary, the introduction of a wider and more generally interesting course of instruction will, it is hoped, be a welcome

relief from the continued repetition of the restricted course of lessons which has a tendency to become lifeless and wearisome. Any change, however, should be gradual. Examination of the Schemes will show that the number of distinct subjects for which provision must be made in the Time Table need not be much, if at all, increased, for it is suggested that the technical parts of Grammar should be taught incidentally in lessons on Reading and Writing; that History and Geography are kindred subjects, and both may form material for reading lessons: and that similarly Physical Geography can be taught in connection with Elementary Science.'

In approval of the changes indicated above, the following paragraphs taken in the main from previous editions of this book are here reproduced.

Necessity for maintaining the three Elementary Subjects:

—In many of the best schools considerably more than half the entire time is devoted specifically to teaching the three elementary subjects. The following reasons may be urged in explanation of so much importance being attached to these subjects:—(*a*) They are the forms in which knowledge is mainly stored; (*b*) They provide the means by which knowledge is communicated; (*c*) They are necessary to advance being made in the higher subjects of instruction; (*d*) Their study provides a good intellectual training.

A rational course of study for subjects beyond those termed Elementary.

Object Lessons and Geography for the Lower Classes.
Grammar and History for the Upper Classes.

In favour of the above arrangement it is urged that children in the Lower Classes should not be taught the definitions and rules of grammar before they have the opportunity of becoming fairly well acquainted with the natural objects surrounding them. It is urged that this latter knowledge will provide the material for the exact use of language, and consequently that with the more perfect acquaintance with words (as to their meaning and use in a sentence) the pupil will be in a condition of knowledge and of intelligence to render him capable of a profitable study of grammar. Besides the advantage of a rational sequence, it is further urged that a more thorough acquaintance with the child's object surroundings, with their qualities and measure, together with the modes of ascertaining and presenting them, will more completely fit him for industrial pursuits than could the study of grammar, whose rules at this early age are rarely understood and scarcely ever applied. It will be seen that history is put somewhat late in the school curriculum. It is true that simple stories relating to English History may be told so as to interest a very young pupil, but the serious study of this subject requires preparation in the following amongst other directions, viz. :—(1) a knowledge of political geography sufficient to place the learner in possession of the main facts concerning the position, power and pursuits of the chief nations of the globe; (2) some experience of the social relations which regulate the actions of communities, and of the political relations which regulate the actions of the State.

This experience will be gained in a natural and interesting manner if lessons (after the nature of object lessons) be given on such subjects as the following viz. : a policeman, postman, water-rate ; an election (parish, borough and county) a treaty, alliance, &c.

The Alternative Courses in Geography :—The variations in this subject are very slight. The courses begin with notions of Home Geography, followed by those of District, County, Country, and of Continent. Whichever course in geography may be selected, the following general direction applies with equal force. 'Geographical teaching is sometimes too much restricted to the pointing out of places on a map, or to the learning by heart of definitions, statistics or lists of proper names. Such details, if they form the staple of instruction, are very barren and uninteresting. Geography, if taught to good purpose, includes also a description of the physical aspects of the countries, and seeks to establish some associations between the names of places and those historical, social or industrial facts which alone make the names of places worth remembering. It is especially desirable that attention should be called to the English Colonies, and their productions, government and resources, and to those climatic and other conditions which render our distant possessions suitable fields for emigration and honourable enterprise.'

English :—This term includes Reading, Spelling, Recitation, Writing, Composition and Grammar, in so far as it bears upon the correct use of language. Taking the last two divisions of the subject, viz., Composition and Grammar, the schemes throughout present an almost uniform course. Beginning with conversations on matter of every day experience, and making use of simple oral statements, the course gradually advances to connected statements oral and written, and finally expands into the more formal exercises of composition and letter writing. Grammar, in the form of parsing and analysis, does not take place in the course until considerable ability in the use of words and sentence, both oral and written has been developed. The course of instruction which is thus broadly described has long been advised by the most enlightened teachers. The scholars must know the things they have to classify. To attempt the classification of words into nouns, adjectives, verbs, &c., before clear notions exist of the meaning and use of these words in written and spoken language is an illogical and impossible task.

History :—The schemes suggest the study of Historical readers in the upper divisions. In two of the schemes these reading lessons are prepared for by simple history stories in the lower classes. In all schools a preparatory course of instruction in the geography of home and country is arranged.

The *latter* plan has been commented upon above. It appears to present a rational course of instruction. A study of political and descriptive geography will supply much material upon which to base the study of history. A knowledge of our own country at the present time,—its people, their several communities, industries, modes of life, government, character, and religion, supplemented by similar if less full knowledge of other important nations must make a very substantial

foundation on which to construct reliable notions of History. For the plan, which begins with a series of stories and biographies, it may be stated that the biographies of statesmen, warriors, kings, and other remarkable characters provide much of the matter out of which history is constructed. With young children the recital of the events as they occurred in the life of some great man has a reality which attracts the attention, and when the interest is thus aroused it is not difficult to impart the historical facts and truths interwoven with the life and character of the subject under review. A series of lessons covering the chief events in the lives of Palmerston, Wellington, Pitt, Cromwell, Cecil, Sir Walter Raleigh, Wolsey, Becket, Richard I., Hereward, The Conqueror, Canute, and Alfred, could not fail to convey much historical knowledge in an attractive way.

*Object Lessons and Elementary Science** Object lessons find a place in all the schemes. These lessons should be made, as far as possible, a preparation for the subjects of the upper classes. For example, lessons on a mariner's compass, a vane, and the common natural products of the district form an admirable introduction to geography; the grammar course may be anticipated by making the object lesson a means of exercising the scholars in the right use of words; and history, as has been already stated, may be commenced by means of object lessons on the various elections, a gas or water rate, a postman, &c.

This subject provides the greatest amount of selection, there being several alternative and suggested courses mapped out in the Schemes of Instruction. The choice between these subjects will be determined by taking into consideration :—

1. The surroundings of the school, the productions of the locality, and (dependent upon them) the probable industrial pursuits of the children, *e.g.* (*a*) Agriculture and botany will be favourite and profitable studies in rural schools; (*b*) Domestic economy will be useful in girls' schools; (*c*) Mechanics, chemistry, and magnetism and electricity, in schools for boys in manufacturing districts.

2. The special qualification of the teacher and the supply of apparatus and material; thus, one teacher will deal most successfully with the subject of animal physiology, another with sound, light, and heat, and so on.

> 'Whatever the subject selected, it is necessary that the scheme should be well graduated, that it should be suitable to the age of the scholars, that it should make them acquainted not with words only, but with facts and materials of the outer world, and that it should be well illustrated by models, by diagrams, and pictures of sufficient size, and when practicable by specimens and experiments. If these subjects are taught by definition and verbal description instead of making the children exercise their own powers of observation, they will be worthless as means of education.'

*The Department issued Circular 369 on June 25th, 1895, setting forth the scope and aim of 'Object Teaching.' The same document sets out schemes of lessons for different schools. This circular should be carefully studied. It is printed in the appendix.

SPECIMEN SCHEMES OF INSTRUCTION.

(ISSUED BY THE BOARD OF EDUCATION.)

SCHEME 8, FOR LARGE COUNTRY SCHOOL WITH AVERAGE ATTENDANCE OF ABOUT 120 OLDER CHILDREN.

Staff: Head Teacher and two Assistant Teachers (besides Teacher of Infants), or of Head Teacher, one Assistant Teacher, and two Pupil Teachers (besides Teacher of Infants).

Class 3.	Class 2.	Class 1.
English—		
Reading from suitable reading books, Recitation. Oral reproduction by children of (1) stories told by Teacher, (2) passages read in class, and (3) information obtained in object lessons. Transcription of sentences bearing on object lesson, and copy-writing.	Reading from suitable reading books. Recitation. The formation, orally and in writing, of two or three sentences about some familiar object, and the oral reproduction of stories told by the Teacher. The chief parts of speech. Copy-writing.	Reading from suitable reading books, one of which should be a History of England. Recitation. Composition, as in the second class, but at rather greater length. Letter-writing. Simple grammatical rules.
Arithmetic—		
Lower group as for Standard I. in Schedule I.	Lower group as for Standard III. in Schedule I.	Lower group as or Standard V. in Schedule I.
Upper group as for Standard II. in Schedule I.	Upper group as for Standard IV. in Schedule I.	Upper group as for Standard VI. in Schedule I.
Geography—		
Elementary ideas illustrated by models of sand and clay, and by the neighbourhood of school.	England, with special reference to neighbourhood.	The continents in turn.
History - - - - - - - - -	- - - -	Exposition of contents of History of England used as a reading book.
Elementary Science and Common Things—		
Object lessons on common animals and birds and their food, and on common wild and cultivated plants. Observations on growth of plants in school gardens.		Experimental lessons on the constituents of air, water, and soil, and on the food of plants. Visits where possible to nursery gardens, creameries, poultry farms, &c.
Manual Work—		
Modelling in clay, objects, *e.g.* apple, carrot, plum, acorn, nut, discussed in object lesson -		Harder exercises in Modelling, *or* Sloyd, *or* wood-work of common type.
Drawing—		
Drawing, freehand and with ruler, the simplest right lined forms from actual objects, *e.g.* rake, mallet, cupboard, door, &c. The use of set squares.	Drawing as in Class 3, but with the introduction of curves, *e.g.* sickle, scythe, leaves, &c. Scale Drawing from actual objects, the use of compasses.	Drawing as in Class 2, and also Drawing from rectangular and circular models and from easy common objects. Geometrical figures with instruments.

Needlework, Singing, and Physical Exercises, as in former Codes.

SCHEME 9, FOR BOYS' TOWN SCHOOL WITH AVERAGE ATTENDANCE OF ABOUT 200.

Staff: Head Teacher, three or four Assistant Teachers, and two or three Pupil Teachers.

Class 5.	Class 4.	Class 3.	Class 2.	Class
English— Reading from suitable reading books. Recitation. Oral formation of sentences about common objects. Transcription.	Reading from suitable reading books. Recitation. Oral formation of sentences about common objects. Dictation of very easy sentences and passages.	Reading from suitable reading books. Recitation. Formation (orally and in writing) of sentences about common objects. Easy Dictation.	Reading from suitable reading books, one of which should be a History of England. Recitation. Formation (orally and in writing) of sentences about common objects. Easy Dictation. Division of sentences into subject and predicate.	Reading from suitable reading books, one of which should be a History of England. Recitation. Letter-writing and reproduction in writing by children of passages read in class. Accounts of familiar objects and scenes. Parts of speech, grammatical rules and very easy analysis.
Arithmetic— As for Standard I. in Schedule I.	As for Standard II. in Schedule I.	As for Standard III. in Schedule I.	As for Standard IV. in Schedule I.	Group (a) as for Standard V. in Schedule I. Group (b) as for Standard VI. in Schedule I. Group (c) as for Standard VII. in Schedule I.
Geography— Definitions, illustrated by models in sand or clay, &c.	The Geography of the neighbourhood, and the meaning of a map.	England and Wales.	The British Isles, with North America in outline.	The Continents in turn, also England revised.
History - - -	- - - - - -	- - - - -	Study of contents of Historical Reader with oral exposition.	Study of contents of Historical Reader with oral exposition.
Elementary Science and Common Things.	- - - - - -	The simpler physical properties of Water, Alcohol, Glycerine, Mercury, Ether, &c.	The lever, pulley, inclined plane experimentally treated; the syphon, barometer, and diving bell.	Effects of heat on solids, liquids, and gases; methods of measuring temperature and heat.
Chemistry - -	- - - -	- - - - - -	First notions, elements and compounds, examples of chemical action.	Manufacture of the common gases, and their elementary properties; the composition of air and water, acids and alkalis, &c.

Drawing, Singing, and Physical Exercises, as before.

FOR GIRLS' SCHOOL in Town, nearly the same as above, except:—

1. Needlework takes the place of Drawing.
2. Elementary Science, &c., includes Lessons on familiar Animals, Plants and Substances in Classes 5, 4 and 3, and Lessons on Air, Ventilation, Respiration, Water, Washing and Cleaning in Class 2, and Lessons on the choice of Food and Drinks, Management of Health, Common Ailments, Colds, &c., in Class 1.

SCHEME 1, FOR SMALL COUNTRY SCHOOL WITH AVERAGE ATTENDANCE OF FROM 20 TO 60 OLDER CHILDREN.

Staff (exclusive of Staff for Infants): One or two Teachers, according to the number of Children.

Lower Division.	Upper Division.
English— Reading from suitable reading books (to be changed from year to year). Copybook writing and transcription. Formation of easy sentences both orally and on paper.	Reading from suitable reading books (to be changed from year to year), one of which should be a History of England, and another a Geography book. Reproduction of passages read by children, letter writing, written descriptions of simple objects discussed in object lessons.
Suitable Recitation in each Division.	
Arithmetic— Group (a) as in Schedule I. for Standard I.	(a) as in Schedule I. for Standard IV.
Group (b) as in Schedule I. for Standard II.	(b) as in Schedule I. for Standard V.
Group (c) as in Schedule I. for Standard III.	(c) as in Schedule I. for Standard VI.
Geography— Simple lessons on Geography of neighbourhood, and outlines of England. Explanation of Geographical terms as they occur.	Study of contents of Geographical Reader, with oral exposition. Easy Map drawing.
History - - - - -	Study of contents of Historical Reader with oral exposition.

Common Things and Elementary Science—
A course of lessons, to be given to the whole school, dealing with objects familiar to the children, and with matters likely to bear upon the children's lives.

Where there are two teachers, simple practical instruction in Horticulture or Domestic Economy may be added.

Singing, Drawing, Needlework and Physical Exercises, as in former Codes.

SCHEME 5 PRESENTS A CURRICULUM FOR SEASIDE TOWN SCHOOL.

It differs from that of other Town Schools in its Elementary Science Course. This Course is as follows :—

CLASSES 5, 4 AND 3.—A course of lessons on Marine Animals and Plants, on Local Rocks, Pebbles, &c.; various sorts of Boats, Ships, &c.; Lighthouses and Lightships; the Local Tides; Flags of different Nations, &c.

CLASS 2.—The Magnet and Compass. Practical methods of finding the Cardinal Points. Apparent movements of Sun and Moon. Measurement of Sun's altitude by shadows.

CLASS 1.—Practical measurements of Areas and Volumes. Lever; Pulley; Inclined Plane; Practical examples of Parallelogram of Forces and Parallelogram of Velocities. The chief constellations and the apparent movements of heavenly bodies.

THE CURRICULUM OF THE RURAL SCHOOL.

[Issued by the Board of Education to Managers and Teachers of Rural Elementary Schools, April, 1900.]

Sir,—The Board of Education are anxious to call the attention of Managers and Teachers of Elementary Schools situated in the agricultural districts of England and Wales to the importance of making the education in the village school more consonan with the environment of the scholars than is now usually the case, and especially of encouraging the children to gain an intelligent knowledge of the common things that surround them in the country. From experience gained in various districts it is found that by a suitable arrangement and handling of the school curriculum this object can often be attained without necessarily adding any new subjects to the time-table, or demanding any undue burden or work from teachers or scholars.

The Board would deprecate the idea of giving in rural elementary schools any professional training in Practical Agriculture, but they think that teachers should lose no opportunity of giving their scholars an intelligent knowledge of the surroundings of ordinary rural life, and of showing them how to observe the processes of Nature for themselves. One of the main objects of the teacher should be to develop in every boy and girl that habit of inquiry and research so natural to children; they should be encouraged to ask their own questions about the simple phenomena of Nature which they see around them, and themselves to search for flowers, plants, insects and other objects to illustrate the lessons which they have learnt with their teacher.

The Board consider it, moreover, highly desirable that the natural activities of children should be turned to useful account—that their eyes, for example, should be trained to recognise plants and insects that are useful or injurious (as the case may be) to the agriculturist; that their hands should be trained to some of the practical dexterities of rural life, and not merely to the use of pen and pencil, and that they should be taught, when circumstances permit, how to handle the simpler tools that are used in the garden or on the farm, before their school life is over.

The Board are of opinion that one valuable means of evoking interest in country life is to select for the Object Lessons of the lower Standards subjects that have a connection with the daily surroundings of the children, and that these lessons should lay the foundation of a somewhat more comprehensive teaching of a similar kind in the upper Standards.* But these Object Lessons must not be, as is too often the case, mere repetitions of descriptions from text-books, nor a mechanical interchange of set questions and answers between teacher and class. To be of any real use in stimulating the intelligence, the Object Lessons should be the practising ground for observation and inference, and they should be constantly illustrated by simple experiments and practical work *in which the children can take part*, and which they can repeat for themselves at home with their own hands. Specimens of such Courses can be obtained on application to the Board of Education. These may be varied indefinitely to suit the needs of particular districts. They are meant to be typical and suggestive, and teachers, it is hoped, will frame others at their discretion. Further, these lessons are enhanced in value if they are connected with other subjects of study. The Object Lesson, for example, and the Drawing Lesson may often be associated together, and the children should be taught to draw actual objects of graduated difficulty, and not merely to work from copies. In this way they will gain a much more real knowledge of common implements, fruits, leaves, and insects than if these had been merely described by the teacher or read about in a lesson book. Composition exercises may also be given—after the practical experiments and observations have been made—for the purpose of training the children to express in words both what they have seen, and the inferences which they draw from what they have seen; and the children should be frequently required and helped to describe in their exercise-books sights of familiar occurrence in the woods and in the fields. Problems in arithmetic connected with rural life may also be frequently set with advantage.

The Board of Education also attach considerable importance to work being done by the elder scholars outside the school walls, whether such work takes the form of elementary mensuration, of making sketch-plans of the playground and the district surrounding the

* The important points to be observed in all Object Teaching were set out in the Official Circular (No. 369) issued on this subject on June 25th, 1895, copies of which may be obtained from the Board of Education.

school, of drawing common objects, of paying visits of observation to woods, lanes, ponds, farms, and other suitable places under the guidance of the teacher, or of the cultivation of a school garden.

The teacher should, as occasion offers, take the children out of doors for school walks at the various seasons of the year, and give simple lessons on the spot about animals in the fields and farmyards, about ploughing and sowing, about fruit trees, and forest trees, about birds, insects and flowers, and other objects of interest. The lessons thus learnt out of doors can be afterwards carried forward in the schoolroom by Reading, Composition, Pictures and Drawing.

In this way, and in various other ways that teachers will discover for themselves, children who are brought up in village schools will learn to understand what they see about them, and to take an intelligent interest in the various processes of Nature. This sort of teaching will, it is hoped, directly tend to foster in the children a genuine love for the country and for country pursuits.

It is confidently expected that the child's intelligence will be so quickened by the kind of training that is here suggested that he will be able to master, with far greater ease than before, the ordinary subjects of the school curriculum.

The Board would further urge upon any teachers now in rural schools who happen themselves to be of urban up-bringing, or to have been trained in urban centres, to seize every opportunity of gaining a closer insight into the special conditions and problems of rural life, and they trust that those whose previous education has not enabled them to obtain full knowledge of the main principles and phenomena of rural life and activities, will be able to attend such holiday courses and classes as may be placed within their reach for this purpose by County Councils or other Local Committees; since it is only when the teacher is genuinely interested in, and well informed about, the occupations of country life that any such results can be looked for in the children as have been referred to as the proper object of rural schools in the present Circular.

I have the honour to be, Sir,
Your obedient Servant,
G. W. KEKEWICH.

MANUAL INSTRUCTION.

Manual instruction is defined to mean 'instruction in the use of tools, processes of agriculture, and modelling in clay, wood, &c.'

'In some foreign schools manual exercises in continuation of the employments of the kindergarten, are graduated in difficulty, are carried onward through all the classes of the school, and are found to be not without a useful reflex influence on all the ordinary school studies. Such exercises sometimes consist of modelling, the cutting, fixing, and inventing of paper patterns, the forming of geometrical solids in cardboard, and the use of tools and instruments.' These simple exercises form the 'suitable occupations' of the three lower standards.*

* A special circular on the extension of Kindergarten principles, and on the introduction of object lessons and of some form of hand and eye training to the lower standards is printed on pp. 237-8. The same circular contains also valuable suggestions on the teaching of the various class subjects.

Manual Instruction in Standards V. and upwards.

With a view to develop this instruction in a practical direction and to assist and encourage the formation of classes for Manual Instruction, grants of 6s. or 7s. will be made on account of any boy who has been satisfactorily taught in accordance with Schedule M (New Code).

SCHEDULE M :—

'1. The instruction must be—(*a*) carried on continuously throughout the school year for two hours weekly, including half an hour special drawing (*see d below*), and at least 1½ hours weekly of actual use of tools by the boys at the bench ; (*b*) in the use of the ordinary tools used in handicrafts in wood or iron ; (*c*) given in a properly-fitted workshop, wholly devoted to manual instruction ; (*d*) connected with the instruction in drawing :—that is to say, the work must be from drawings to scale previously made by the students.

The intention of the rule laid down in par. (*a*) is that the manual instruction should be given continuously throughout the school year for two hours weekly to all scholars, including half-time scholars, if any, in respect of whom a grant is to be claimed ; and that scholars in respect of whom a grant is to be claimed, but who are in attendance on the ordinary instruction for a part only of the school year, should also receive manual instruction for two hours weekly throughout the whole period of their attendance on the ordinary instruction.

Early notice of any alteration of the time or times as provided in the time-table for manual instruction should be sent to Her Majesty's Inspector ; and also of times when the class may have to be closed for any special reason, such as the teacher's illness, epidemic, &c.

'2. The instruction may be given by one of the regular teachers of the school or centre at which the manual instruction is given, if he is sufficiently qualified;* if not, he must be assisted by a skilled artisan, and care must be taken to make such arrangements as will insure the maintenance of good order and discipline. The number of children receiving practical instruction under one teacher at one time should not exceed 20.

3. The work of the class will be judged by an inspector at a visit or visits which he will make in the course of the school year, generally without notice.

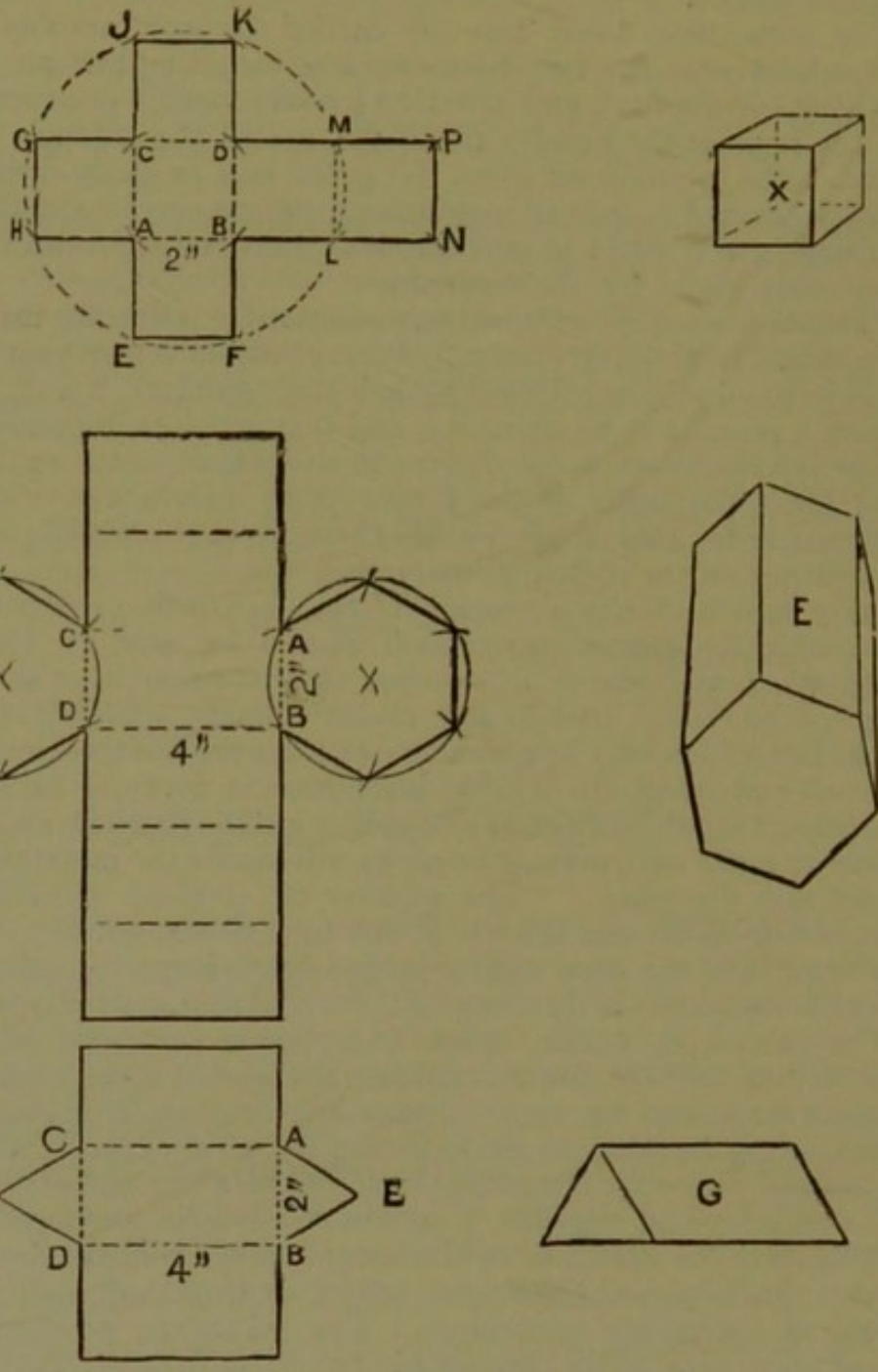
'4. The school, or centre, must be properly furnished with plant for instruction, and the managers must certify (*a*) that every scholar for whom a grant is claimed has received manual instruction for at least two hours a week for not less than 20 weeks during the school year for which the grant is claimed, and while attending the school with reasonable regularity ; and (*c*) that a special register of attendance is kept and supervised by the managers of the school, or by the committee of the manual class when the instruction is given at a central school or workshop under the management of a separate committee. The managers, or members of the committee, visiting the class should record on the attendance register the number of scholars present at the time of each visit, attesting the same by their dated signatures ; and they should also see that the registers are properly kept.

'The managers must inform the Board as soon as manual instruction is commenced in connection with their schools.

'5. Attendances of boys under 12 will not, as a rule, be recognized for purpose of a grant.

* Whilst not at present insisted on for purposes of grant, the teacher should, if possible, be certificated by the City and Guilds of London Institute or similar qualification.

'The course of manual instruction must be adapted to teach the use of tools employed in handicrafts, not so much as an initiation in a special handicraft as a disciplinary educational course to train the hand and eye to accuracy by a progressive series of exercises connected with freehand drawing and drawing to scale.'



Specimens of drawing and cardboard exercises.

1. A square is described on the line AB in the uppermost figure.
2. Similar squares are described on each of the sides AB, BD, CD, and AC; the square MLNP is described on ML. Cut the cardboard along the unbroken lines and fold over along the dotted lines to form a cube similar to X.
3. On AB, and on DC, in the middle figure, hexagons are drawn by the rules of geometry; the lines AB and CD are extended as shown in the figure, and two portions equal to AB are marked off on the line above A, and three portions equal to AB on the line below B. Rectangular figures similar to those in the sketch are then drawn. After the cardboard has been cut along the unbroken lines, and folded along the dotted lines, the hexagonal prism E is formed.
4. Similarly draw and fold the triangular prism G.

'The following observations must be considered more in the light of suggestions than regulations :—

'1. Before commencing to work with tools it will be found very useful to practise the children in cutting out and putting together solid models in cardboard* or paper from plane projections (known technically as 'nets').

'2. All work with tools must, as stated in the minute, be from careful full-size drawings prepared by the scholar, the dimensions being taken off this drawing in the workshop.

'3. The tools required for the early stages of manual instruction in carpentry are the saw, the plane, and the chisel. Exercises in Slöjd, by the clasp-knife only, do not meet this requirement. The construction and mode of use of these tools, the proper methods of sharpening them and of keeping them in good working order should form the subjects for preliminary lessons. A great variety of exercises may be arranged, suited to the strength and ability of the scholar, in use of these tools, which will give an elementary knowledge of the principles of construction, and at the same time teach accuracy and carefulness. Scholars of the second year and above may sharpen their edge-tools.

'4. Clear ideas respecting the various kinds of hard and soft woods, the growth and structure of wood, its fibre and grain, may be given by means of a small collection of the different descriptions of timber commonly used in carpentry, with longitudinal and cross sections.

'5. The earlier exercises should include some such as the following :—

(*a*) Sawing off across the grain of the wood, and sawing along the grain of the wood, blocks and strips of given dimensions taken from a drawing prepared by the boy himself from a model, and having marked on it the required dimensions. Many varieties of tenon and of halved joints can be made in the rough by the saw alone.

(*b*) The use of the plane can be commenced by planing small surfaces about nine inches in width and then planing down strips to a given thickness. The planing of two surfaces at right angles to each other, the preparation of a right square prism and of an hexagonal prism, and the construction of a straight-edge with bevelled edges can follow.

(*c*) The joints used by carpenters form a valuable series of exercises in which the use of the chisel may be learnt; such as the various forms of halving, of mortise and tenon, notching, dowelling, dovetailing, groove-and-tongueing, and scarfing with keys or wedges. The teacher should draw up a complete series of simple and graduated exercises for the early stages which all members of the class should execute in turn. No attempts should be made at first to construct small articles of furniture.

(*d*) The proper use of nails and screws should be explained and practised till a fair measure of accuracy has been attained.

* See figures on p. 206.

(*e*) So far the instruction does not involve the use of curved surfaces. If the workshop is provided with a lathe, another graduated series of exercises might be arranged to include the simpler forms of turning, but this is not insisted on.

(*f*) In iron the student should begin by chipping a plane surface, then completing it with a file; filing a cube till the sides are accurately plane and parallel to each other; making an hexagonal prism and an hexagonal bolt-head will be found good exercises for using the file. Drilling a circular hole in an iron plate, screw-cutting and similar exercises will enable a lad to take part in the construction of some useful tool for the workshop. Instruction may subsequently be given in the methods of joining metal work by welding, riveting, &c. The use of cold riveting may be shown even where there is no smith's hearth. A similar series of exercises might be introduced for brass in place of iron. Where facilities exist, a lathe for metal work and a blacksmith's forge will be found extremely useful.

'6. There should be not less than four feet run of bench for each boy under instruction, and he should have a space of at least two feet in width in front of the bench. The room should be well lighted and ventilated. There should be a bench and set of tools for the use of each scholar when under instruction, with a proper place in which to keep them, each bench being provided with a wood or metal vice, as the case may be. A teacher cannot properly direct the manual instruction of more than about twenty boys at one time.'

The Tools required for a class of 20 boys are :—

2 Hand saws
2 Tenon saws.
8 Dovetail saws.
6 Mortise chisels.
10 Jack planes.
10 Smoothing planes.
10 Gauges.
2 Bevels.
10 Mallets.
10 Squares.
6 doz. firmer chisels $\frac{3}{16}$" up to 1".
6 Hammers.
2 Mahogany straightedges 30".
6 2-ft. rules.
1 Brace and bits.

Estimated Cost about £10.

Drawing Courses.

'The standards of examination in Drawing are as follows, and they must be taken consecutively.

'**Standard I.**—Drawing, freehand, and with the ruler, of lines, angles, parallels, and the simplest right-lined forms. (To be drawn on Slates or on paper at the option of the Managers.)

'**Standard II.**—The same on paper.

'**Standard III.**—(*a*) Freehand drawing of regular forms and curved figures from the flat. (*b*) Simple geometrical figures with rulers.

'**Standard IV.**—(*a*) Freehand drawing from the flat. (*b*) Simple scales, and drawing to scale.

'**Standard V.**—(*a*) Freehand drawing from the flat (*b*) Drawing from *rectangular and circular models*, and from easy *common objects*. (*c*) Geometrical figures with instruments and to scale.

'**Standard VI.**—(*a*) Freehand. (*b*) Models of regular form and common objects. (*c*) Geometrical drawing more advanced than Standard V.

'**Standard VII.**—(*a*) Freehand. (*b*) Models of regular forms and common objects more advanced than Standard VI., and common objects and casts of ornaments in light and shade, and geometrical drawing more advanced than Standard VI. (*c*) Plans and elevations of plane figures and rectangular solids in simple positions with sections. N.B.—Girls are not required to attempt the geometry, plane and solid, of Standards VI. and VII.

'In order to interest the children it is advisable to teach them to draw as early as possible from actual objects such as the doors and windows, furniture and apparatus of the schoolroom. It will also be found quite possible and very desirable to go beyond the foregoing standards in teaching. Thus, freehand drawing of bold curves may be introduced in Standards I. and II.; and exercises may be advantageously given in all Standards, in drawing from memory.'

A fully illustrated syllabus of an alternative drawing course has been prepared and published by the Department. In it are specimens illustrative of the drawings to be practised in each standard. It can be obtained at the Science and Art Department, South Kensington. Price 4½d.

Materials needed for teaching purposes in drawing.

Standards I. to III. need drawing charts for class instruction. Blackie and others supply these. For giving first notions of angles, perpendicular lines, &c., boxes, cubes, and common objects may be used.

Standard IV.—Charts for freehand drawing, as above; squared paper, and cards for scale drawing.

Standard V.—Large models are supplied by Gill and Sons. Freehand copies and geometrical test cards as supplied by Jarrold and others.

Standard VI.—*Models* as above, with vases added; two small blackboards hinged together for showing the relation of 'plan' to elevation in *solid geometry*. These are supplied by the North of England School Furnishing Company, Darlington. A few cardboard models for this subject may be made by the pupils, as shown under manual training, some of the models being cut to show sections. *Freehand* from large copies as above.

Standard VII.—For *shaded* drawing, stumps and charcoal powder may be obtained of any educational publisher. Models may be obtained of Vago, Modeller, Gray's Inn Road, London. *Cusack's Shading* is an excellent text-book. For *solid geometry*, a book published by Gill & Sons is useful, especially for sections.

Instruction in drawing is obligatory throughout the school (except for girls). At least 1½ hours of instruction per week is required. The possession of a certificate of Drawing on the part of the instructor will not for the present be insisted upon. The Code of 1898-9 provides a grant of 1s. 9d. per scholar in average attendance for the teaching of Drawing. This grant will not be paid for girls unless cookery is also taught.

MISCELLANEOUS SUBJECTS OF SCHOOL WORK.

Cookery.

In girls' and mixed schools, the girls who, as a rule, are not under 11 years of age, and who have attended not less than 40 hours during the school year (of which not more than 8 hours may be in one week or 4 hours in any one day) at a cookery class of not more than 18 scholars, and have spent not less than 20 hours cooking with their own hands, and not less than 14 hours in attendance at Demonstration lessons, may earn a grant of 4*s.* each. For purposes of demonstration, the class may number not more than 54 scholars. The time for cookery must be entered on the time-table, and should be not less than a continuous 1½ hours. A list of dishes taught during the year and the record of instruction given at each lesson must be submitted to the Inspector at the close of the year. In seaport towns boys over 12 years of age may receive instruction.

'Any class will not be reported to be efficiently taught unless :—

(*a.*) thorough instruction in the first principles and primary methods of cookery is given, and the teaching is systematic and progressive ;

(*b.*) strict attention is paid to order, cleanliness, and economy ;

(*c.*) the kind of cookery taught is suited to the wants of the working classes living in the neighbourhood ;

(*d.*) the children have adequate knowledge of the dietary value of the food cooked ;

(*e.*) the apparatus includes stoves and other appliances usually found in the homes of working people of the neighbourhood. These stoves must be generally used.'

A full account of the methods of teaching Cookery and a list of lessons are printed in Appendix V., Revised Instructions to Inspectors.

Needlework.

Some important modifications are made in Appendix III. of the Revised Instructions, 1902. It should be read carefully.

Laundry Work.

When the grant for Laundry Work is claimed it will be necessary to report on the provision available for the purpose, and especially whether the appliances and methods are those which are possible in the homes of working people, and whether

the teacher holds a certificate recognised by the Board, or is otherwise recognised by the Board as qualified to teach the subject. The grant is 2/- for each child.

The conditions to be fulfilled in this new branch of manual instruction are as follows:—

(*a*) That appropriate provision has been made for the practical direction of the subject by a teacher recognised by the Department as qualified to teach.

(*b*) The children forming the class, and claiming payment, must not, as a rule, be under 11 years of age.

(*c*) Each child must have attended not less than 20 hours (not more than 8 hours per week or 4 hours in one day) during the school year in a class of not more than 14 scholars. Each child must spend not less than 10 hours in working with her own hands.

(*d*) If cookery be taken by the same children, these cannot take any specific subject.

(*e*) The time for laundry work must be entered in the time table, and a record of the instruction and work done must be submitted to the Inspector.

(*f*) Not more than 42 scholars are permitted to be present at a Demonstration Lesson.

The lessons (Laundry Work) are expected to include instruction in:—

(*a*) Washing of linen, woollen, cotton prints, muslins and laces.
(*b*) Starching and stiffening processes.
(*c*) Methods of drying and hanging out of clothes.
(*d*) Ironing and goffering.
(*e*) Cleansing of tubs, copper, irons, etc.

Simple explanations should be given on:—

(*a*) Hard and soft water.
(*b*) Use of alkalies in washing.
(*c*) Different kinds of soap.

Dairy-Work, Cottage Gardening, and Household Management are added to the list of subjects of school instruction.

The instruction in the last named subject may be spread over parts of two years instead of being completed in one year.

Visits to Museums, Art Galleries and other places of educational value or of national or historical interest during school hours and under proper guidance, may be reckoned as attendances up to a limit not exceeding 20 such attendances. The places visited must be approved by the Inspector, and not more than 15 scholars should be under the charge of one teacher.

SAVINGS BANKS.

Preliminary.

A teacher wishing to establish a Penny Bank in connection with a Post Office Savings Bank in his school, should write for forms to the Controller, Savings Bank Department, General Post Office, London, E.C.

1. **Forms.**—He will receive a form of application for permission to deposit the funds of his bank at some specified Post Office (obviously the one nearest his school). This will be filled up and returned to the Controller. No Managers or Trustees are required. The teacher, being styled Treasurer, can make deposits or withdrawals in his own name—a great advantage, because the arrangements should be simple, and the teacher should not be dependent on help which might be difficult to get.
2. **A form of declaration** similar to the declaration made by any depositor in opening an account with the Post Office Savings Bank, must be signed by the Treasurer at the Post Office. The Postmaster will forthwith open an account in the name of the Bank.
3. **Specimen copies of rules.**—These may be adopted as they are printed in the forms supplied, or they may be modified (within certain limits) to meet the convenience of the teacher; but a copy of the rules adopted must accompany the form of application.
4. **Books.**—A ledger and cash book suitably ruled will be supplied at a charge of one shilling and six pence, and any number of Depositors' Bank Books can be obtained free of cost. Full directions for keeping the books will be sent with them from the General Post Office.
5. **Postage.**—No payment for postage is required for any communication on the business of the Bank addressed to the Controller.
6. **Management.**—The teacher will make such arrangements with his staff for collecting and entering deposits as may be most suitable to the conditions of his school. He should himself receive moneys, and sign Bank Books. All posting will easily be performed by pupil-teachers or assistants.
7. **Banking.**—The aggregate deposits (less withdrawals) will be invested in the Post Office in the name of the Bank, week by week or monthly at convenience.
8. **Interest.**—Interest will accrue to the Bank directly the aggregated deposits reach £1, but interest allowed to scholars need not commence until individual accounts amount to £1. This surplus of interest above liabilities will enable the teacher to meet the incidental expenses of the Bank, so that it need not be worked at any personal loss, or if the teacher choose he may either give interest on smaller savings than £1 or increase the interest to 3 per cent.

The advantages of a Savings Bank in a school.*

(*a*) Affords practical lessons in thrift.
(*b*) Scholars learn how safely to invest small amounts before they become wage-earners.
(*c*) Introduces them to the Post Office Savings Bank system. N.B.—They should be encouraged to become members of a Post Office Savings Bank when their deposits reach £1.
(*d*) Children can put away their savings without a journey to the Bank.
(*e*) For once a week at least, it loosens the tension of rigid discipline necessary to the ordinary routine of daily life in school, and introduces the scholar to the teacher in a more friendly and sympathetic relation.

* The Education Department has issued a circular on Savings Banks and their uses since the above paragraphs were written. In France a scholar has often a small Savings Bank account opened for him in lieu of a book or money prize.

(*f*) Will tend to popularize the school with parents, who will delight to see the teacher concerned for the good of his children.

(*g*) It will tend to increase the loyalty of the scholars generally, and be an additional bond of connection between them and their school.

School Libraries.

Why necessary.

1. Children are now almost universally taught to read. Hence they should have ready access to a carefully selected set of books so that the power they have acquired may be developed and directed.
2. Books are not provided (in a great many cases) by the parents in the homes of the children.
3. If not provided by others the child will be left to cheap, scrappy, and frequently injurious literature of its own selection.
4. A good selection of books well read may be expected to secure the following amongst other ends :—

   (*a*) The practice of reading, followed by facility in the art and a taste for it.

   (*b*) The acquisition of knowledge beyond that brought within the range of the child's experience. This will result in a large and varied information.

   (*c*) The cultivation of the power of imagination will be especially exercised. The judgment and reasoning power also find employment in estimating the value of the material supplied by reading, whilst memory finds abundant exercise in storing the various intellectual results.

   (*d*) A recreation and an enjoyment which will tend to elevate the character and life, and at the same time restrain from forms of recreation less valuable.

N.B.—Do not allow too great facilities for changing, as access to too many books often results in none being carefully read.

Selection.

Attractive picture books for little children.
Books of travel and adventure.
A few healthy tales ; all need not be distinctly religious in tone.
History as embodied in the biographies of notable men.
Natural History and Popular Science. A selection of the works of Scott, Cooper, &c.

N.B.—If a number of Schools join and allow the libraries to circulate, a wide selection is placed within the reach of each School.

Subsidiary advantages to School.

Besides the advantages of giving practice in reading and of developing general intelligence in the school, a Library carefully kept may afford lessons in :—

i. *Cleanliness and order.* Books must be kept clean and arranged in proper order in the cabinet.

ii. *Classification.* The catalogue and arrangement of books in the Library would be valuable.

iii. *Punctuality.* Books must be returned at the time stated.

For further official directions as to the use of libraries see Revised Instructions to H.M. Inspectors. Price, 4½d.

TIME TABLES.

A time table is a necessary feature in the organization of every elementary school. In the *Instructions to Inspectors* it is stated that, 'in certifying under Article 79 that a time table is approved on behalf of the Education Department, Her Majesty's Inspector merely declares that it fulfils the requirements of Section 7 of the Elementary Education Act of 1870.* He is not responsible for all its details. Nevertheless, if a due proportion of the time is not assigned in Infant schools to manual exercises and recreative employments, and in other schools to each of the subjects of instruction, including any specific subject which the school professes to teach, it is desirable to call the attention of the managers to the fact. Nothing should be attempted which, having regard to the proper classification of the scholars and to the number and qualifications of the teachers, cannot be efficiently taught in the ordinary school hours. You will report in every case in which you have reason to believe that the scholars are improperly detained beyond the prescribed time, or that it is attempted to make up for neglect or for an injudicious distribution of the work throughout the year by special exertions just before the day of inspection. You will also carefully observe and report whether the time table is conspicuously put up in the school-room, and whether it has been followed throughout the school year.'†

Principles to be observed in making a Time Table.

It is not possible to construct a model time table suited to the conditions of all schools. The examples of time tables submitted in after pages must be taken only as suggestive; they should be examined merely as illustrations of the principles which must be applied in the construction of all such tables, and be altered in their details to suit the varied conditions of different school organizations. The following are the most important conditions to be observed in drawing up a time table:—

1. The number of classes capable of being effectively taught and managed by the school staff.

* The conscience clause.

† It will be convenient if an analysis showing the time given weekly to each subject be entered on the time-table.

2. The number of subjects to be taken beyond those which are compulsory, namely, reading, writing, arithmetic, drawing (for boys), needlework (for girls), singing, object lessons on geography, history, and common things, and physical training.
3. The morning subjects to be those of acquisition, and such as require high concentration of mind and a fresh and bright intellect, as, for example, new rules of arithmetic, mental arithmetic, and elementary science; the afternoon subjects to be exercises of reproduction, such as mapping and dictation; or, those requiring manual dexterity, as writing, drawing, and woodwork; or, those which partake of the nature of relaxation, such as singing, drill, the reading of a story, and map-colouring.
4. The alternation of subjects so as to secure the restful effort which a change in study affords; for instance, a lesson in arithmetic should be followed by one in reading, and that again by a lesson in science; but a lesson in mental arithmetic, another on a new rule, and a third in algebra should not follow one another.
5. The time to be allotted to each subject; the morning lessons, for example, may be longer than those in the afternoon; lessons in infant schools may be about 20 minutes in length, whilst those in schools for older children may be from 40 to 50 minutes' duration.
6. The fair distribution of time over the various subjects, and in accordance with the age of the pupil; for example, the time devoted to arithmetic should be about the same throughout the whole school, but that devoted to special instruction in writing and reading in the lower classes should be in excess of the time devoted to the same subjects in the higher classes.
7. The placing of the classes so that the lesson of one shall not be interfered with by the work of a neighbouring class; for example a simultaneous reading lesson in Standard I. should not be taken in close proximity to an oral lesson to Standard IV. It would be difficult to maintain the attention of Standard V., taking a lesson in grammar by the side of another class having an experimental science lesson.
8. The head-master to be free at times to superintend, and a time for the marking of registers to be distinctly shown.
9. The signature of Her Majesty's Inspector and an analysis to be appended. No alteration to be made in the hours of religious instruction without the express sanction of the Inspector.

Copy of Time Table for a school of 500 scholars taught by a Head-Master and eight certificated Assistants *(in class-rooms).*

Day	Class	8.50 to 9.40	9.45	9.45 to 10.10	10.10 to 10.50	11 to 11.30	11.30 to 12	2 to 2.15	2.20	2.20 to 2.55	2.55 to 3.20	3.30 to 4	4 to 4.30
Monday	1	Assembly and Scripture Lesson (early attendance marked in red ink)	Marking and Final closing of Registers	Writing, C.B	Arithmetic	Reading	Comp'n. Essay	Tables	Marking and Final closing of Registers	Geography	Read. History	Drawing Lesson	Drawing Practice
	2			"	"	"	" Story	"		"	" "	"	"
	3			"	"	"	Dictation	"		"	" "	"	"
	4			"	"	"	"	"		"	" "	"	"
	5			"	"	"	"	"		"	" "	"	"
	6			"	"	"	"	"		"	" "	"	"
	7			" & collect Fees	"	"	Transcription	"		"	" ordinary	"	"
	8									"	" "	"	"
Tuesday	1	Assembly and Scripture Old Test't. (early attendance marked)		Roots, &c. Word Build. Grammar	Arithmetic	Reading	Dictation	Spelling		Grammar	Recitation	Mechanics	Singing
	2			"	"	"	"	"		"	"	"	"
	3			"	"	"	"	Writing		"	"	Object Less.	"
	4			"	"	"	"	"		"	"	"	"
	5			"	"	"	"	"		"	"	"	"
	6			"	"	"	"	"		"	"	"	"
	7			Spelling	"	"	"	"		"	"	"	"
	8			Reading				"		"	"	"	"
Wednesday	1	Assembly and Scripture and Hymns (early attendance marked)		Mechanics	Arithmetic	Reading	Composition (yesterday's	Ment. Arith.		Geography	Drill	Drawing Lesson	Drawing Practice
	2			"	"	"	" Lesson)	"		"	"	"	"
	3			Spelling	"	"	"	"		"	"	"	"
	4			"	"	"	Dictation	"		Drill	Geography	"	"
	5			"	"	"	"	"		"	"	"	"
	6			"	"	"	"	"		"	"	"	"
	7			"	"	"	Transcription	"		"	"	"	"
	8			"	"	"		"		"	"	"	"
Thursday	1	Assembly and Scripture New Test't. (early attendance marked)		Mechanics	Arithmetic	Reading	Paraphrasing	A Letter on Board		Grammar	Mechanics	Geography	Singing
	2			Spelling	"	"	"	"		"	"	"	"
	3			Grammar	"	"	Dictation	"		"	Reading	Object Less.	"
	4			"	"	"	"	Writing		"	"	"	"
	5			"	"	"	"	"		"	"	"	"
	6			"	"	"	"	"		"	"	"	"
	7			"	"	"	"	"		"	"	"	"
	8			Reading	"	"	"	"		"	"	"	"
Friday	1	Assembly and Scripture Geography (early attendance marked)		Recitation	As on Monday, or Examination in Reading, Writing and Arithmetic, and results summarised			Ment. Arith.		Mapping	Reading	Hand and Eye Training	
	2			"				"		"	Mechanics	"	"
	3			"				"		"	Reading	"	"
	4			"				"		"	"	"	"
	5			"				"		Transcript'n.	"	"	"
	6			"				"		"		"	"
	7			"				"		"	"	"	"
	8			"	**Play or drill each day—10.50 to 11 a.m., 3.20 to 3.30 p.m.**			"		"			

Time Table used in a school of 140 scholars.

Day	Class	9 to 9.35	9.45	9.55	9.55 to 10.50	11	11 to 12	2 to 2.45	2.25	2.45 to 3.25	3.35	3.35 to 4.20	4.20 / 4.30
Monday and Wednesday	VI. V. IV.	Worship	Examine Home Work	Final closing of Registers	Grammar and Composition M	Play time	Arithmetic (10′ mental) M	Geography and Mapping M and B	Final closing of Registers	Reading (History) A	Afternoon Play	Drawing M	Singing and Dismissal
	III.	Collect Fees			Reading and Spelling B		,, B	Writing D		Geography B		,, B	
	II.	Admissions M			Reading and Dictation C		,, C	Elementary Science M		Writing M		,, A	
	I.	Tables A B and C			Reading and Transcription A		,, A	Object Lesson A		Reading M		Drawing and Spelling A	
Tuesday and Thursday	VI. V. IV.	Worship and Bible Lesson			Reading and Spelling M and B		Arithmetic (10′ mental)	Composition and Dictation A		Writing A		Repetition M and D	
	III.				Elementary Science M and B		,,	Repetition B		Reading B		Dictation B	
	II.				Reading and Spelling C		,,	Geography C		Dictation C		Repetition C	
	I.				Reading and Spelling A		,,	Writing D		Geography M		,, A	
Friday	VI. V. IV.	Worship and Scripture History			Reading and Composition M		Arithmetic (10′ mental)	Grammar M		Geography B		Singing, and Reading a Story M and B	
	III.				Writing D		,,	Reading B		Geography M			
	II.				Reading and Spelling C		,,	Geography A and D		Writing A			
	I.				Reading and Transcription A		,,	Writing D and A		Spelling A			

Needlework for Girls on Monday, Wednesday and Friday Afternoons. **Staff,** M. Master, A. Senior P.T., B. Junior P.T., C. Additional Female Teacher, D. Candidate.

Specimen of an approved Time Table for an Infant School.

MORNING

	9	9.15	9.45	10.0	10.40	11.0	11.30	11.55	12.0
Monday	Registers, Hymn and Prayer		Scripture Lessons and Singing	Registers marked and finally closed	Number Concrete 20′ Abstract 15′ Tables 5′	Drill or Kindergarten Games	1. Reading 2. Writing 3. Reading 4. Writing 5. Reading	Writing Reading Writing Reading Writing	Dismissal
Tuesday					as above		1. Writing 2. Reading 3. Writing 4. Reading 5. Writing or Gallery Lesson	Reading Writing Reading Writing Reading	
Wednesday					as above		as on Monday		
Thursday					as above		as on Tuesday		
Friday					as above		as on Monday		

AFTERNOON

	2.0	2.10	2.30	2.50	3.0	3.30	4.0	4.15
Monday	Opening Exercises	Registers marked and finally closed	1. Clay Modelling 2. Pricking 3. Drawing 4. Paper Folding 5. Stick Laying	Play or K. Games	Number or Gallery Lesson	1. Repetition 2. ,, 3. ,, 4. ,, 5. Singing	Text, Hymn and Prayer	
Tuesday			Needlework or Drawing (Boys)			1. Singing or Reading 2. ,, 3. ,, 4. ,, 5. ,,		
Wednesday			Gallery Lesson	Play or K. Games	1. Reading or Drawing 2. ,, 3. ,, 4. ,, 5. ,,	Drill ,, Singing ,, Drill		
Thursday			Needlework or Drawing (Boys)			1. Repetition 2. ,, 3. ,, 4. ,, 5. ,,		
Friday			1. Basket Weaving 2. Cardboard Modelling 3. Kindergarten Sewing 4. Mat Plaiting 5. Paper Cutting	Play or K. Games	Number Occupations	1. Miscellaneous 2. ,, 3. Singing 4. ,, 5. Recitation		

Five Minutes are spent at each change of Lesson in Physical Exercises and Song.

REGISTRATION.

Introduction.

The Code requires that before any grant is made to a school the Education Department must be satisfied that suitable registers are provided, accurately kept, and periodically verified by the managers. The grant may be withheld upon the Inspector's report for faults of registration.

The managers' return (Form IX.) will contain a certificate that the registers have been checked at irregular intervals, and at least once in every quarter, by the managers. To check the registers, the managers, or some one deputed by them, should visit the school without previous notice after the registers ought to be closed, and ascertain that the number of attendances marked tallies exactly with the number of children then present. An entry should also be made in the log-book and in the registers at the time of checking them; they should also be signed at the same time by the teachers responsible for them.

In every school or department there should be :—

1. A register of *admission* and progress and withdrawal.
2. Registers of *daily attendance* for all scholars.
3. A book of *summaries*.
4. A log-book, and cash-book.
5. A book for recording minutes of managers' meetings.
6. A punishment book for recording every case of corporal punishment.

These registers and books must be provided by the managers out of the funds of the school, so as to be the property of the school, and not in any sense that of the teacher. Attendance registers, when filled, should be put away and preserved for at least *ten* years. Admission registers and summaries should never be destroyed.

Admission Register.

1. The Admission Register should be kept exclusively by the head-teacher, and be made up immediately upon the admission of every scholar. Successive numbers should be allotted to the children on their admission, so that each child may have its own number, which it should retain throughout its school career. The admission register must have an alphabetical index.

Form of New Admission Register and mode of making entries.*

No.	Date of Admission			Date of Re-admission			Child's Name Christian and Surname	Child's Parent or Guardian		Whether exemption from Rel. Instruction is claimed
	Yr.	Mo.	Da.	Yr.	Mo.	Da.		Name	Address	
540	*87*	*4*	*23*	*90*	*3*	*31*	*Williams, Eli*	*John Williams*	*1, Fort Road*	*No*

Exact date of Child's Birth				The last School † (if any) before entering this School	Date of leaving			Reason of leaving
Yr.	Mo.	Da.	Certificate or other authority		Yr.	Mo.	Da.	
80	*3*	*25*	*Cert.*	*Bridge St., Wes.*	—	—	—	

* By the new rules this register must be filled up immediately upon the admission of each scholar.

† If this is his first school enter 'none.'

No child's name should be removed from this register so long as he is *under legal obligation to attend school*, unless it has been ascertained that the scholar is dead, is attending another school, or has left the neighbourhood. If no information can be obtained the name may be removed after four weeks continuous absence.

The entry for each scholar made in the register on his admission, and retained by the scholar throughout his school career, will be sufficient to identify him, especially when there are two or more scholars of the same name; when, however, more than one entry is made for the same scholar, it will be necessary when he is re-admitted that he should resume his old number, and that cross references should be made to the entries. The matter for entry in the admission register and the mode of entry are given on p. 220.

The keeping of School Records (*taken from the Revised Instructions*).

1 and 2. In addition to the ordinary registers, a log-book and a cash book* must be provided by the managers out of the school funds and be the exclusive property of the school.

3. All entries must be original, not copied from slates, papers, or memoranda of any kind. They must be made from the first in ink. Pencil entries of any kind are altogether forbidden. There must be no erasures nor insertions. If it is necessary to make any correction, this should be done in such manner that the original entry and the alteration made are both clear on the face of the record. The entries should be consecutive; no blanks should be left between them.

4. The name of the school should be distinctly written on the cover or title-page of each book.

Registers.

5. The pages of all the registers in every school or department must be numbered consecutively. Each register should be signed on the title-page by the correspondent of the school, with the date at which it was supplied to the teacher. No leaf should be withdrawn from, or inserted in, any register. The registers presented to Her Majesty's Inspector must be the original registers, which have been in use throughout the year, and on which the returns are based. The head teacher of a school or department will, in all cases, be held responsible for the proper keeping of the records of that school or department, and should not delegate to any subordinate the keeping of any of these registers, except those of attendance. A pupil-teacher who has completed his first year may register the attendance of his own class. A first year pupil-teacher may not be employed in registration.

6. The managers are held responsible for the efficient verification of the registration.† Form 9 contains certificates to be signed by managers (1) that the registers and books of account have been accurately kept in accordance with this Appendix; and (2) that the accuracy of the registers has been tested by the managers on several occasions and the result recorded in the log book. In order that managers may be able to give these certificates, they are required to visit the school without notice, at least once in every quarter, at some time when the attendance registers should have been marked and added up for that meeting of the school and to check the entries.† This should be done by ascertaining (1) that each of the children present at the time of marking has been marked present, and each of the children not so present has been marked absent; (2) that the totals of these attendances have been duly entered; (3) that the instructions for the keeping of these registers, hereafter laid down, have been fulfilled; and (4) that the admission register and summary have been properly kept up to date. The result of each such visit should be entered by the visiting manager in the log-book, dated, and signed by him. The managers should also, at the end of the year, check the number of times the school has been opened, and also a sufficient number of the attendance totals (at least 10 per cent.) to convince themselves of the accuracy of the registration.

Attendance Registers.

11. In each school or department separate registers should be provided for older scholars and for infants (under five separately). The attendances of all children who are being taught with the older scholars or with the infants must be entered in the corresponding register, and attendances must not be transferred from one

* See p. 227.

† See foot-note p. 222.

register to the other. Separate registers should also be provided for recording the attendance of scholars at special classes for instruction in any of the subjects mentioned in Art. 12 (*f*). These registers should show accurately the dates on which the class meets and the time during which the scholar is under instruction at each meeting; and those for cookery classes should also distinguish between attendances at demonstrations and time spent by each scholar in cooking with her own hands.

12. *The approved time-table must provide* adequate time at each meeting of the school for marking the registers, and they must be marked and the attendance totals entered during the time so provided. This time must end before the commencement of the minimum time constituting an attendance as defined by Art. 12, after which no scholar may be marked present except as provided in par. 17. Afternoon attendances must not (without special consent of the Department) be marked until one hour after the close of the morning meeting.
13. The name of the school, department, and class should appear on the cover of each register.
14. There must be columns for the admission numbers and names of the scholars, both of which must invariably be entered at the same time, and a column for the attendances at each meeting in the school year, which column should be properly dated *before any entry of attendances or absences is made in it.* These attendance columns should be grouped in weeks, and at the foot of them should be spaces for totals of the number present when the registers were marked and the number withdrawn before the time constituting an attendance is complete (Art. 12(*d*)). There is no need that the weekly total of attendances of each scholar should be entered; but it will be convenient to add up, and record the total of, the attendances of each quarter.
15. If school fees are entered in the register, they should be kept quite separate from the other entries; the best place will be the extreme left of the page before the names of the scholars.
16. Every scholar whose name has been entered in the admission register and not removed from that register must be definitively marked \ (present) or O (absent) at every meeting of the school.
17. When a scholar leaves before the completion of the minimum time prescribed by Art. 12, his mark of presence must be cancelled immediately on leaving by drawing a ring round it thus, (\) and his attendance must be deducted from the total. But this need not be done in the case of a scholar leaving the school for instruction in any of the subjects mentioned in Art. 12 (*f*), unless it is subsequently ascertained that such scholar has not completed the minimum time constituting an attendance. Any scholar marked absent at any meeting who is found when the registers of a central class for cookery, drawing, science, &c., or for attendance at museums are examined, to have been present during the minimum time constituting an attendance (Art. 12 (*a*) and (*b*)), at such class or partly at such class and partly at the school, may have the letter C, D, S, M, A, &c., entered inside the mark of absence, thus, (C) (D) (S), &c. All attendances so registered should be added to the total attendances of each child at some time not later than the end of the year. Absence for epidemic sickness (Art. 101*) is marked (E)
18. At each meeting the total number of scholars marked present should be checked by counting those actually present before the correct total is entered at the foot of the register.* The attendances of monitors must not be counted.
19. The number of scholars who have left any meeting before completing their attendances (*see* 17 above) must be entered *before the close of each meeting.*
20. When the school does not meet on an occasion for which space is provided in the registers, this space must *before the next meeting* be cancelled by one or more lines being plainly drawn through it. *The reason why the school did not meet should always appear in the log-book.* For longer periods 'holiday' should be written across the column.

* (In order to check the attendance at each meeting of the school, a register monitor should be appointed. This monitor should be a thoroughly trustworthy scholar. It should be his duty to distribute the registers to each class teacher. As soon as this is done the monitor should count, independently of the teachers, the number of scholars in each class, and enter the numbers thus obtained on a form specially ruled for the purpose. By the time the monitor has completed his counting, the registers would be marked. Each class teacher should then check his own register by counting the number of scholars in his class, and comparing it with the number to be placed in the total column on his register. The monitor should now collect the registers, and lay them, open, on the head-teacher's table, together with the form upon which he has entered the number of scholars in each class. If the registers of the class are found to agree with the numbers on the monitor's form, the registers may be accepted by the head-teacher as correctly marked.—J. H. C.)

21. Attendance registers should be preserved *for ten years* after they are filled.
22. The attendance registers must be marked every time the school meets, however small the attendance, and the meeting must be counted in ascertaining the average attendance.

N.B.—Special exception is made in the case of schools in rural districts when, on account of bad weather, the attendance in very seriously reduced. Children with wet clothing may be sent home and the school closed, or those not in danger from wet may be retained without the registers being marked. Full particulars must be entered in the log-book and a record kept of the numbers sent home and retained.

Specimen of New Daily Attendance Register.

1891 February

No.	NAME	Admission No.	Age Y	Age M	Half-Timers	1st week 2nd M	3rd T	4th W	5th T	6th F
1	Johnson, William	310	8	3		\ ◯	\ \	\ |	\ \	\ \
2	Williams, Henry	340	9	10		\ \	◯ \	◯ |	\ \	\ \
3	Simpson, Joseph	296	8	5		\ \	\ ⊘	\ |	\ Ⓢ	\ \
4	Jones, Alfred	415	10	4	H	\ ◯	\ ◯	\ |	\ \	\ \
5	Brown, Richard	379	9	6		\ \	◯ \	\ |	\ \	\ \
No. present daily	Morning ...					5	3	4	5	5
	Afternoon ...					3	4	—	4	5
Nos. withdrawn and added.....							−1		+ 1	
Total attendances each week						B	38		G*	
Times the school has been open during each week	Morn.						5			
	Aftern.						4			

* Space to be used when the same register is used for boys and girls.

Registration of half-timers.

1. A separate *half-time* register will be kept of all half-time scholars.
2. The managers should not enter in this register the name of any scholar unless he has obtained a labour certificate from the local authority of the district, and is actually employed in conformity with such certificate.
3. In this half-time register will be posted, at the close of each week, the number of attendances made by each of the half-time scholars during the week.

4. The class registers will be marked for half-time scholars just in the same way as for other scholars, presence *for not less than two hours of secular instruction* being marked by a stroke, and the entry for the week in the half-time register will be the number of such *two-hour attendances* made during the week. When the yearly total is ascertained, 50 per cent. may be added to it, to obtain the number of 'attendances.'

5. In Form IX. the total number of two-hour attendances, whether made by half-time or whole-time scholars should be stated. The average attendance entered in Form IX. will be found by dividing this number by the number of meetings of the school; the additional attendances (50 per cent. of those made by the half-time scholars) claimed under Article 12 (*b*) should be entered in the space provided for that purpose in Form IX. The average attendance, which will be the basis of the grant, will be calculated from the above data in the office of the Board of Education.

6. At the end of the year a list will be drawn up, signed by the Officer of the Local Authority, and presented to the Inspector, certifying (*a*) the number of two-hour attendances made by each half-time scholar, (*b*) the addition claimed on his behalf under Article 12 (*b*). This addition may not exceed—

   (i.) *One-half* of the two-hour attendances made by the scholar during the year; or during the portion of the year which has elapsed since the scholar became qualified as a half-timer, or

   (ii.) Such a number as, when added to the number of his two-hour attendances will give a total equal to *three-fourths* of the number of meetings of the school during the year or portion of the year that has elapsed since the scholar became qualified as a half-timer.*

In Form X., the Inspector will certify, in answer to question IV., on p. 7, the total number of two-hour attendances, plus the addition claimed and allowed under Article 12 (*b*), in respect of all the half-time scholars.

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* *E.g.*—Suppose a School to have met 420 times—

A half-timer, if quite regular throughout the year, will be present at 210 meetings; and Article 12 (*b*) allows in this case an addition of 105 to his two-hour attendances.

If from any cause, such as illness or residence in the district for less than a year, his attendances fall short of 210, he may still be counted as a half-timer for the number of times he does attend. In such a case, if he attend, say, 180 times, he may have an addition of 90 to his two-hour attendances.

If, on the other hand, he has been out of work for any time, and, therefore, at school, he may have made more than 210 two-hour attendances. In respect of such extra attendances he has no claim to be treated as a half-timer. If he has attended (say) 260 times, he may be allowed an addition of 55 to make up 315, *i.e.*, three-fourths of 420.

Form of Quarterly Summary.

Class	1st Week	
	Boys	Girls
I.		
II.		
III.		
Total weekly attendances		
Gross total of attendances		
Times the school opens A.M.		
Times the school opens P.M.		
Total...		
Average attendance for the week		

Form of Yearly Summary.

Quarter	No. of times School opens			No. of attendances								Quarterly average attendance
				Boys				Girls				
	A.M.	P.M.	Total	Infants under 5	Infants over 5	Older Scholars	Total	Infants under 5	Infants over 5	Older Scholars	Total	
I.												
II.												
III.												
IV.												
Yearly Totals ...												

1. No. of Infants under three .....
2. Total No. of attendances of older scholars over 14 who have passed Standard VII. .....
3. Total No. of attendances of scholars over 15 years .....
4. Total No. of attendances made at Science or other centres .....
5. Total No. of attendances of half-time scholars .....
6. Schools whose year begins after September, 1900, must show in the Summary Register a separate return of attendances of Infants under 5.

Register of Summaries.

In day schools, the attendance totals of each class *and department*, for each week or *part of a week*, the number of times each department has been open for the same periods, and the average attendance of *each department* for these periods should be entered in the Register of Summaries *at the close of each week.*

At the end of the school year the total number of attendances and meetings for that year should be ascertained for each school or department. A separate summary of the attendances of children under five must be kept for Infant Schools or Classes.

The average attendance for the year should also be ascertained for each section of the school for which separate returns are required by dividing the total number of attendances in the year by the number of meetings of the school in that year.

The summary should also show the number of scholars on the registers at the end of the school year classified as required by Form 9.

Registers of Summaries must have an alphabetical index, and be permanently preserved.

Registration of School Fees, Log-book, the School Cash-book, Portfolio, Managers' Minute-book, and Punishment Book.

The registration of school fees may take one of the following forms, viz. :—

(*a*) A separate fee book, involving the writing out afresh every scholar's name, as well as frequent comparison with the attendance register in order to see whether the fees and attendances agree.

(*b*) A set of columns, one for each week, on the attendance register. The columns are placed together, and should be on the left side of the page. This arrangement facilitates the comparison of fees with attendances.

The Log-book must contain not less than 300 pages, and must be kept by the head-teacher. In order to guide teachers as to what should be entered in the log-book, the Code states that 'such events may be inserted as the introduction of new books, apparatus, or courses of instruction ; any plan of lessons approved by the Inspector ; the visits of managers ; absence, illness or failure of duty on the part of any of the school staff, or any special circumstances affecting the school that may, for the sake of future reference, or for any other reason, deserve to be recorded. No reflections or opinions of a general character are to be entered in the log-book.' The managers are to enter a record of their visits to check the registers, and the correspondent is, immediately upon receipt of the report, to enter a list of the school staff as settled by the decision of the Department. An entry is also to be made of any change in the staff occurring during the school year.

Entries in the log book should be made at the end of each school week, and at such other times as occasion may require, by the head teacher.
The log book should contain an explanation of the reason for the closing of the school on all occasions on which it is closed.
It should also contain an account of all important variations in the attendance, and all deviations from the ordinary routine of the school.
Log books should be kept as a permanent record.
A summary of the fortnightly, monthly, and quarterly results of the work of each class should be recorded in the log-book.
No entries should be made by other persons except by the correspondent at the close of the year by the Managers who check the registers periodically, and by the Inspector.

The school cash-book is, by Code regulation, made a necessary part of the school outfit of schools not provided by school boards. It must be ruled so as to show the various items of income and expenditure, under the following heads :—

DR. RECEIPTS—*(left hand or Debtor page).*

A	B	C	D	1			2			4	5	6	7	
Date.	No. of Counter-foil of Receipt Book or Voucher.	From whom received.	Particulars of Receipt.	Grant from the Board of Education			Net Annual Income from Endow-ment.	Voluntary Contributions.		Collections in Churches or Chapels.	School Pence.	Received for Books and other School Requisites sold *to Children*.	Other Sources.	Total.
				Aid Grant	Annual Grant.	Fee Grant.		(*a*) Of Private Indi-viduals.	(*b*) Of Societies.					
				£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.

PAYMENTS—*(right hand or Creditor page).* CR.

A	B	C	D	1		2	3	4	5	6	7	8	
Date.	No. of Voucher.	To whom paid.	Particulars of Payment.	SALARIES.		Books and Stationery.	Apparatus and Furniture.	Fuel, Light, and Cleaning.	Repairs to Buildings.	Rent.	Rates, Taxes, and Insur-ance.	Other Ex-penses.	Total.
				(*a*) Of Principal Teachers.	(*b*) Of all other Teachers.								
				£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.

When this cash-book is accurately kept, the totals of the several columns will furnish the returns required for the summary account in pages 2 and 3 of manager's returns (Form 9).

35. It should be strictly borne in mind that this summary account in Form 9 is not a statement of assets and liabilities, but a cash account, and a cash account having reference only to the maintenance of the school. It follows from this (1) that every amount actually received or actually disbursed, within the period for which the account is rendered, for the annual maintenance of the school, should be included in the account for that period, and (2) that any amount not actually received or paid within the period for which the account is rendered should not be so included. If the simple rule be followed of entering in the cash book each receipt or payment on account of the maintenance of the school, as it occurs, all complication will be avoided.

36. All entries of amounts received and amounts paid should be duly supported by vouchers—the former by the counterfoils of the receipt book, the latter by acknowledgments of receipt properly dated and signed by the persons who rendered the services or supplied the goods paid for, and setting forth the nature of those goods or services.

37. There should be a treasurer and an auditor properly elected by the managers or subscribers. The accounts of every school not provided by a School Board must be annually audited by a member of the Institute of Chartered Accountants or Society of Accountants, or by a Banker or Bank Manager, or (on special application to the Department) by some person (not being a Manager or Treasurer of the school) whose competency is proved to the satisfaction of the Department.

38. The balance with which each account commences should be that with which the previous account ends. The balance with which each account ends—*i.e.*, the difference between the two sides of the account—should show the actual amount of overdraft, or the actual cash in hand, on account of the annual maintenance of the school. The treasurer and the auditor, and the managers through them, are responsible for the accuracy of these balances.

39. No amount should be entered as a voluntary contribution which is not definitively given, without valuable consideration, by persons unconnected with the staff of the school. No amount entered as a voluntary contribution should afterwards be withdrawn.

40. When a receipt is given to a collector for a total amount collected by him, the counterfoil of the receipt book should be supported by his account of the various amounts paid to him by the contributors.

41. The entries for salaries of teachers must include only the sums paid to them for teaching and keeping the school. They must not include any payment made to teachers for discharging other duties, which must be paid for out of a separate fund.

The Portfolio.—All official documents bearing upon the school work, including letters to or from the Department, forms of agreement between the managers and the various members of the staff, and the school report, must be kept in a portfolio. They should be numbered in the order of their date, and indexed for ready reference.

The Managers' Minute-book.—This book will present a continuous record of the meetings of school managers. In the best managed schools the managers meet monthly. They receive a report from the head teacher of each department under their control. This report consists of a statement of the number of children in attendance, their fees (if any), any changes of staff, results of examinations, applications for apparatus, and other matters affecting the school during the month. The resolutions passed are then recorded. At the end of each year the Government report receives special consideration, and resolutions thereon are entered in the Minute-book. The treasurer's monthly statement is also recorded.

Summaries, &c., required for Official Returns.

1. Number of times the School has been open	Morning	
	Afternoon.....	
	TOTAL.....	

		Boys	Girls	Total
2. Total number of attendances morning and afternoon together, of not less than two hours' secular instruction each, in the case of older children, and one hour and a-half in the case of infants, *made* by all the Scholars. See Articles 12 and 13	(*a*) Infants under 5 years of age ...			
	(*b*) While in the Infant School or Class, over 5 years of age ...			
	(*c*) While under 15 years of age, in the School or Classes for older Scholars ...			
	(*d*) While over 15 years of age.			
N.B.—Are any children under 3? If so, how many? The names of such must not be entered in the Registers.				
3. Annual average in past year (Art. 14) ..... NOTE.—In the calculation of the annual average no additional attendances claimed under Article 12*b* are to be taken into account.				
4. Annual average of scholars over 3 and under 15. Exclusive of attendances of scholars over 14 who have been instructed for more than one year in the three elementary subjects in Standard VII. (Art. 13)				
5. How many additional attendances for Half-Timers are claimed under Article 12*b*? ..... For how many Scholars?				
6. How many additional attendances are claimed under Art. 101?				

Total number on the Admission Register on the last day of the...	1st Quarter of School Year.....	
	2nd Quarter of School Year ...	
	3rd Quarter of School Year ...	
	4th Quarter of School Year ...	
Total number on the Admission Register on the last day of the School Year	3 and under 4	
	4 and under 5	
	5 and under 6	
	and so on up to	
	14 and under 15	
	15 and over	
	TOTAL.....	

APPENDIX I.

DEPARTMENT MEMORANDUM ON THE TRAINING AND INSTRUCTION OF PUPIL-TEACHERS.—*February*, 1891.

Since writing the paragraphs on the instruction of pupil-teachers, and whilst the sheets of this work are undergoing final revision, a most important memorandum on the instruction of pupil-teachers has been issued by the Department. The following is a digest of its more important provisions:—

1. The reports of Her Majesty's Inspectors, and the complaints of the authorities of normal colleges bear witness to the superficial acquirements of pupil-teachers, and point to the need of more systematic preparation.
2. Managers are informed that they are now, more than ever, responsible for the training of their pupil-teachers, and both managers and teachers are invited to co-operate in supplying deficiencies in pupil-teacher training, and in raising their qualification for the work of teaching.
3. *Reading* aloud is to be practised by pupil-teachers, and they are further to be taught the art of good reading. 'Frequent practice, under skilled supervision and criticism, is necessary in order to acquire this art.' When acquired, the art of reading will be of great practical value, as 'no one can hope to teach reading well whose own elocution is not clear, articulate and expressive.' In order to accustom pupil-teachers to reading before strangers, and to give a greater amount of practice, it is suggested that 'a judicious school manager may invite the pupil-teacher to read aloud in his presence, and encourage those whose reading is most accurate, pleasing, and intelligent.'
4. The *Recitation* is to be treated as an exercise in elocution. Proper instruction by means of an excellent pattern, accompanied by such explanations of the matter read, and by knowledge of the entire subject from which it is selected, is required, so that the exercise of recitation may 'familiarize the young student with some of the masterpieces of English literature, and may encourage a taste for reading. Whenever, therefore, an extract from a poem or a play is presented for recitation, Her Majesty's Inspector will expect to be satisfied that the entire poem or play itself shall have been read by the pupil-teacher, or at least that he shall have a good general acquaintance with the scope and purport of the work, and with the relation in which the extract stands to the whole of which it forms a part.'

5. *Text-books* and Manuals prepared to cover for each year the area prescribed for examination and nothing more are strongly condemned, on the ground 'that such books have a narrowing and very injurious effect on the average learner, and are found by all the more intelligent of the pupil-teachers to be meagre and unsatisfactory. For example, if a certain portion of history, geography or science is prescribed, the book put into the hands of the student should not confine itself to that portion, but should treat the whole subject with sufficient fulness to enable him to understand the true significance of that portion of it to which the examination of the year is to refer.'
6. *In Arithmetic* the power to 'work sums' merely will not be considered sufficient, but the reasoning powers of the learners are to be exercised in connection with the meaning and the theory of the rules employed. The teaching received by the pupil-teacher is to prepare him to give a demonstrative lesson in arithmetic before Her Majesty's Inspector so as to make 'the reason for every step in the process intelligible and interesting to the scholars.'
7. *In the Art of Teaching* the double function of apprenticeship is strongly enforced. There is to be exercise in the teaching of a class, combined with directions in teaching by the master. 'The Inspectors of Training Colleges often find on enquiry that the students have, during the four years of their engagement, been merely placed in charge of a class and have rarely given a lesson under supervision, or received any counsel or criticism with regard to the plan of teaching they adopt. The time table of every school should be so framed that the head teacher may be free, once a week at least, to listen to his pupil-teachers while they are conducting their classes, and to point out to them afterwards the reasons why some methods are right, and others wrong.'
8. *Written Exercise and Note-books*, dated to show the succession of lessons, are in future to be considered as a 'matter of much importance in its bearing, not only on the accuracy with which lessons are recorded and remembered, but also on the habits of mind which the young teacher is forming.' The practice of making notes of lessons in small memorandum books, or on loose sheets of paper, encourages carelessness, and causes much waste of labour. Students are much more likely to make finished and exact records of their work when those records are entered in books intended to be preserved. Such books prove hereafter to be useful for reference, and they serve, when methodically arranged and dated, as evidences of progress. At the end of the notes of each lesson a blank page should be left for the insertion of any new facts or illustrations which may subsequently be met with in the pupil-teacher's own reading and experience, and which may enable him, if he gives the lesson again, to treat the subject with more fulness and with better effect. As a further help towards the methodical employment

of the hours devoted to instruction and private study, it is important that a time table should be prepared and carefully observed throughout the year. H.M. Inspectors will be instructed to call for this time table occasionally and to report upon it.'

9. *The skilled instruction and personal attention of the master* distributed over the whole year, together with better methods of instruction and a wiser economy of time, will be needed in order, not only to pass the examination at the end of each year, and for entrance into a Training College, but to give the young teacher 'the habit of application and an interest in intellectual pursuits'; the latter effect cannot be expected 'when the instruction he receives is mechanical and unintelligent.'

10. *Collective instruction* in central class is to be encouraged, and in provincial districts the grouping of pupil-teachers from neighbouring schools for instruction on Saturday mornings is advised. The memorandum states that, 'in nearly all schools it should be possible, by a better adjustment of the work of the day, to secure, especially in the first and second year of the apprenticeship, additional time for the pupil-teachers' private study.'

11. *Prize Schemes* are sketched as follows:—'By the co-operation of Her Majesty's Inspectors with the Head-Teachers of a neighbourhood, and with the leading School Managers and others who subscribe to the funds, local societies have been formed which offer prizes for the best essay or composition, for an excellent specimen of needlework, for a well classified collection of flowers and plants, or for special proficiency in any of the subjects of instruction. Sometimes the prize takes the form of a contribution, helping the holder to proceed to a Training College: sometimes it is available for the purchase of books; and in all cases the schemes have been found to excite a wholesome emulation among the pupil-teachers, to recognise and encourage the efforts of the best of the Head-Teachers, and to awaken the interest of the friends of education in the improvement of the schools of a district.'

12. *In order to stimulate the mental and general culture* of those pupil-teachers, assistant-masters, and mistresses who may be isolated, or at a distance from home, or may be without access to books or means of intellectual or social improvement other than those supplied by the school, the managers are invited to bring such within some or all of the following influences, viz:—A local 'reading circle'; a natural history club; a cricket club; a debating or literary society; a course of University Extension lectures; a visit to a neighbouring factory or picture gallery or famous building, and a well planned holiday excursion. 'These exercises may have no visible or immediate relation to the school duties, but any one of them is in its own way useful in its

influence on the character and general power of the youthful teacher. It should be the special aim of Managers who take an interest in his career to acquaint themselves with such resources as the neighbourhood of the school presents, and when occasion offers to bring them under his notice, and to facilitate access to them. The future usefulness of the teacher depends, not only on what he knows and can do, but on what he *is*—on his tastes, on his aims in life, on his general mental cultivation, and on the spirit in which he does his work. Managers and Teachers are requested to bear in mind that, although such qualifications cannot be formulated in a schedule or made the subjects of examination, they are nevertheless indispensable as conditions of all true improvement in national education.'

INSTRUCTION OF PUPIL-TEACHERS (Art. 34).

(Issued by Education Department to H.M. Inspectors, January, 1894.)

"The following regulations have been laid down by their Lordships for the future guidance of School Managers, and any serious disregard of them, after due warning, may lead to the disqualification of the School as a place of proper training for Pupil-Teachers (*see* Article 34 of the Code). The regulations do not apply to cases where the Pupil-Teachers attend efficiently conducted Central Classes.

"(1.) The hours in which instruction is given should be entered on a Time Table, and the Managers should ascertain by a personal visit, at least once a quarter, that the hours are properly observed, and should record their visits in the Log-Book, or other book kept for the purpose.

"(2.) The time should not be spent in private reading, but in actual instruction by the Teacher.

"(3.) As a rule the instruction should not be given between the morning and afternoon meetings of the School except for a short part of the winter season, neither should it be given immediately after the afternoon meeting, except under very special circumstances. A reasonable interval of time should be allowed between the afternoon meeting and the instruction in all cases where it is given in the latter part of the day.

"(4.) The Managers should provide good reference books and text books for the use of the Pupil-Teachers, such books to remain the property of the School, and to be approved by the Inspector at his annual visit.

"(5.) Note books and exercise books used by the Pupil-Teacher should be shown to the Inspector at his annual visit. All exercises and notes should be dated by the Pupil-Teacher when they are written, and dated by the Teacher when corrected.

"(6.) A book should be kept for the purpose of recording the Pupil-Teacher's progress in skill in the conduct and teaching of his class. Short notes of lessons on one of the subjects prescribed by the Code for Pupil Teachers' practice in teaching should be drawn up weekly in the first two years of apprenticeship, and in the last two years full notes of lessons should be prepared weekly in one subject and the lesson should be delivered in the presence of the Principal Teacher. A report on such notes and on the delivery of these lessons in the last two years should be made weekly in this book.

"(7.) Quarterly examinations should be held by the Teacher or some other qualified person in each subject of the Pupil-Teacher's course for the year, and the worked papers, after being marked by the Teacher, should be submitted to the Managers with a short report upon them, and subsequently produced to the Inspector at his annual visit."

RECENT CIRCULARS OF THE DEPARTMENT RESPECTING INFANT SCHOOLS, OBJECT LESSONS, AND VARIED OCCUPATIONS.

INSTRUCTION OF INFANTS.

WHITEHALL, *6th February*, 1893.

SIR,

You will have observed that in the Education Code of 1892, teachers holding either the Elementary or Advanced Certificate of the National Froebel Union are allowed to rank as assistant teachers in infant schools under inspection. And you will doubtless have rightly inferred from this concession that the Department are desirous of giving further encouragement to the employment of Kindergarten methods.

The circumstances of infant schools have altered considerably in the last few years; the numbers in the lower classes having increased (especially in schools which have accepted the Fee Grant, and have consequently either abolished or largely reduced their school fees) a full four years' attendance at the infant school will be the rule and not the exception. The improvement also shown in passing the standards at an earlier age than formerly gives to infant schools greater liberty and leisure in developing natural methods of education.

As regards the Elementary Subjects the conditions of the Code are fully satisfied if the scholars over seven can pass, as a rule, in the First Standard; nothing more should be attempted in these subjects in the infant schools, except in the few cases in which scholars are allowed to be retained for the work of the Second Standard. The scholars in the lower classes of infant schools may therefore be relieved from any premature preparation for those subjects on methods ill-suited to their tender age.

Two leading principles should be regarded as a sound basis for the education of early childhood:

(1) The recognition of the child's spontaneous activity, and the stimulation of this activity in certain well-defined directions by the teachers.

(2) The harmonious and complete development of the whole of a child's faculties. The teacher should pay especial regard to the love of movement, which can alone secure healthy physical conditions; to the observant use of the organs of sense, especially those of sight and touch; and to that eager desire of questioning which intelligent children exhibit. All these should be encouraged under due limitations, and should be developed simultaneously, so that each stage of development may be complete in itself.

It has been strongly urged that sufficient attention has not been paid in the past to these principles; indeed, it is often found that the Kindergarten Occupations are treated as mere toys, or amusing pastimes, because they are attractive for children, and the intellectual character of the 'Gifts of Froebel' is disregarded, whereas the main object of these lessons is to stimulate intelligent individual effort.

You should direct the attention of teachers to the chief consideration which underlies true methods of infant teaching, viz., the association of one lesson with another through some one leading idea or ideas. The reading lessons, occupations, and object lessons may all be usefully

combined for one purpose, *e.g.*, if the teacher wishes to impress on her class some knowledge of a domestic animal, she may usefully combine the object lesson for general study of its structure; the reading lesson for a knowledge of its habits and character; some occupation, such as pricking the outline, to impress an exact knowledge of its form; a song or simple story bearing on its association with human life; so that familiarity with animals, especially domestic animals, and a kind treatment of them may be fostered.

On the other hand you should caution teachers against the mere repetition of the same exercises and lessons; the progressive character of the whole scheme of instruction should be constantly kept in view; and each exercise should lead up to something beyond itself.

Pictures and flowers have been wisely introduced of late in greater abundance into infant schools and have added much to their cheerfulness and attractiveness. They should be frequently taken down into the class, and made the subject of conversation. It is not enough that the children should be taught to observe these things and to answer questions upon them. They should be encouraged in every way to give expression in their own words to what they know, what they want to know, and what they think.

It will be found that the Elementary Subjects when taught on right methods can be treated with greater variety; Reading becomes a Kindergarten lesson through pictures and word building; Writing becomes a variety of Kindergarten drawing; elementary exercises in Number are associated with many of the Kindergarten occupations.

It is the experience of many good teachers that by the adoption of such methods it is found to be unnecessary before the sixth year is passed to employ books for Reading, except occasionally for a change of occupation, or perform any exercise in Writing except the elements of letters, or to do any formal Arithmetic work on slates.

It may reasonably be hoped that the observance of these suggestions will materially improve the work of the younger children in infant schools and classes, by relieving the teacher from that useless subdivision in the elementary subjects, which has been hitherto generally employed, and by rendering the instruction less formal, but more varied and attractive.

A list of Varied Occupations is appended to this circular.

(*Signed, &c.*) G. W. KEKEWICH.

The following list of Varied Occupations may serve as a guide to teachers especially in infant schools or classes which may be divided into two sections for those lessons.

A. What Children between the ages of five and seven can do :—

Games with Music.
Games without Music (Guessing Games, &c.; Taking Messages).
Picture Lessons. Object Lessons.
Story Lessons, *e.g.*, stories from History; Grimm's Household Tales.
Recitations. Paper Folding.
Mosaic with coloured paper; use of gum.
Drawing. Brush Drawing. Plaiting Paper.
Ruling simple Geometrical Forms.
Measuring Length. Estimating length.
Weighing. Estimating weight.
Setting a table (carrying a glass of water without spilling it. Moving cups without breaking them).
Modelling in Clay. Basket Work.
Cutting out patterns and shapes with scissors.
Word Building.
Number Pictures, with cubes, beads, &c.

B. What Children between three and five years of age can do :—

Games with Music.
Games without Music (Guessing Games, &c.).
Recitations—Nursery Rhymes, &c.
Picture Lessons (Learning to answer in complete sentences as to what they can see in a picture).
Paper Folding. Drawing.
Mosaic with coloured tablets.
Matching Colours (picking out the same shades of wool from a heap of remnants).
Plaiting Paper.
Working patterns with needle and worsted.
Threading beads in twos, threes, &c.
Arranging shells in twos, threes, &c.
Arranging 'Pictures of Number' with cubes.
Word Building.

INSTRUCTION OF LOWER STANDARDS IN SCHOOLS FOR OLDER SCHOLARS.

EDUCATION DEPARTMENT, WHITEHALL,
6th January, 1894.

SIR,

A general opinion was expressed by the Chief Inspectors at their last conference that the condition of the lower part of many of the schools for older scholars is at present the weakest point of the instruction in public elementary schools.

In the best infant schools children are taught by natural methods, and are trained to use their powers of observation and reasoning ; in schools for older scholars they are too often taught by arbitrary and conventional methods, and there is little in the general course of instruction to lead them to observe or to reason. Object lessons are in many cases discontinued, the reading lessons are encumbered with the teaching of spelling even in the 1st Standard, and hand and eye occupations are very rarely found. Arithmetic also often becomes a mere abstract or mechanical exercise, and is not made to rest upon simple questions of common life within the knowledge and observation of the scholars, nor is it always sufficiently an exercise in reasoning.

When the general character of the lesson presents so little opportunity for the cultivation of intelligence, it cannot be expected that the habit of a spontaneous desire to question which ought to be fostered in young scholars will arise ; and it is to be feared that, when examined, they often reproduce knowledge which has been conveyed by methods which are not truly educational.

It should be borne in mind that object lessons cannot be dispensed with if habits of observation are to be duly fostered, and they should be treated as a means for mental exercise and not merely as opportunities for imparting miscellaneous information. Objects should always be present, and in sufficient numbers ; and the chief aim should be to call into activity observation and the construction of clear mental pictures, so that the intelligence of the pupils may be exercised and developed. Geography, where it is a class subject, should be treated in a similar way, and should be taught by visible illustrations and by actual modelling in sand and clay, for the production of miniature rivers, mountains, &c. Tales from History also, if graphically told and well illustrated by striking pictures of sufficient size, will be very helpful in the same direction. Elementary science (the schemes for which as given in Schedule II. of the Code prescribed object

lessons solely for the 1st and 2nd Standards) is obviously an excellent class subject from this point of view.

But, whatever may be the method followed, some system of lessons should be arranged in every school by which an intelligent habit of observation and simple reasoning may be fostered, while it cannot be too clearly pointed out that all the subjects simultaneously dealt with in a curriculum should be kept as closely interconnected and made as mutually helpful as possible, and not be unduly isolated and specialised.

So also as regards hand and eye training, it is much to be regretted that the ingenious and progressive Kindergarten exercises for training scholars in deftness of hand and correctness of eye should be almost entirely discontinued after children leave the infant school ; and the more so when it is remembered that the mind itself is most effectively trained by such exercises, whenever they are the expression of the children's own thought.

Drawing with coloured chalks, modelling in clay, embroidery of outlines, formation of geometrical patterns and models, and building with cubes, &c., have been tried with excellent results and at very small cost, as convenient methods of continuing the instruction given in the infant school.

You will be careful to explain to managers how very interesting, inexpensive, and educational all these methods are.

As regards the elementary subjects, spelling, unless founded upon methodical and well-graduated lessons on classes of words, should be absolutely discouraged in the lower classes ; and in arithmetic, no sums should be set either in the 1st or 2nd Standard which the scholars themselves cannot either put down when set in a concrete form or translate into concrete qualities when set in abstract numbers.

The use of the reading book for spelling lessons should also be discouraged. Otherwise the interest in the subject is lessened, and the time which should be devoted to intelligent conversation between the teacher and the class on the matter of the lesson is curtailed.

In connection with object lessons or other similar instruction, the practice of answering by complete sentences, which largely prevails in infant schools, should, whenever possible, take the place of elliptical or simultaneous answering.

Attention might be also usefully drawn to the desirability of employing, in these lower parts of schools for older scholars, women teachers who have had experience of infant teaching, and especially those who have been trained for Kindergarten work.

It should never be forgotten that, unless the lessons themselves are made attractive to these young children by their simplicity of treatment, by the suitability and variety of the illustrations, and by association with their everyday life, the most carefully drawn curriculum, and the most thoughtful arrangement of time-tables will fail to attract the children of those parents who set little value on the education of their children.

Their Lordships believe that there is nothing in the Code, or in the present system of examination that need in the least degree prevent such simple and natural methods of teaching as have been described, and they would be glad to hear of anything that would remove any impediment, should such appear to exist. They desire also to point out that the general intelligence which these methods of instruction tend to foster is of the highest advantage in improving the teaching of other subjects of instruction which form part of the curriculum.

(*Signed*) G. W. KEKEWICH.

VARIED AND SUITABLE OCCUPATIONS.

SIR,

(1.) KINDERGARTEN occupations have for some time been used in our infant schools, and manual instruction has also been given to the elder boys in many schools for older children, while the elder girls have similarly been taught cookery and laundry work; but the scholars in the First, Second and Third Standards have, as a rule, had hitherto no manual training, except in so far as it has been supplied in the forms of needlework and drawing. Manual instruction is a valuable part of school training, and my Lords desire to encourage managers of public elementary schools to introduce, where circumstances permit, a suitable course of manual occupations for the three lowest Standards.

Kindergarten occupations as used in the infants' school are not suitable for the children in schools for older scholars. The mat-weaving, stick-laying, embroidery, tablet-laying, and building with bricks or cubes, which serve to give young children ideas of form and number, as well as to train hand and eye, seem trivial to the ordinary child of nine or ten years of age. On the other hand, few of the common workman's tools can with safety be put into the hands of children under the age of eleven.

(2.) An occupation ought to satisfy several conditions :—

(*a.*) It must be educative, and should especially stimulate independent effort and inventiveness. Any work that provides a real training for hand and eye is in a true sense educative, but the most valuable work of all is that which imparts a knowledge of form, colour, and the properties of materials, at the same time that it fosters manual dexterity.

(*b.*) It should admit of being dealt with in a progressive course.

(*c.*) It must be attractive to the children, and afford a welcome relief to other studies.

(*d.*) It must not involve the use of needlessly expensive materials.

(*e.*) It must be capable of being practised in an ordinary schoolroom, without risk of harm to children or damage to furniture.

(*f.*) It must, in cases where the classes are as large as the Code permits, be so simple that it does not require an undue amount of individual attention. Large classes should, where possible, be subdivided for these occupations.

(*g.*) It should avoid a long series of preparatory exercises apart from finished results, and the finished article should be one that is attractive to a child. At the same time, the construction of articles for sale is undesirable.

(3.) The manual occupations satisfying these conditions, which have been most commonly adopted as specially suitable for the First, Second and Third Standards, are :—

(i.) Modelling in clay.
(ii.) Modelling in cartridge or cardboard paper.
(iii.) Cutting out in paper or other material.
(iv.) Drawing and colouring designs (some original).
(v.) Brush drawing from the object and from recent impressions.

Other equally useful occupations may no doubt be devised, and any occupation that is proposed, if it is likely to prove satisfactory, will be readily accepted by the Department.

(4.) It appears that the various manual occupations which have hitherto been introduced for the lower standards because of their suitability, resolve themselves into exercises in the studies of (i.) form, (ii.) colour, (iii.) measurement, which should be, where possible, connected with other subjects of instruction.

(*a.*) For acquiring a knowledge of form, the most effective occupation is clay modelling. It demands accurate observation of the object which is chosen as a model, and the accuracy of the observation will largely depend upon previous instruction as to the build or growth of the object in its natural state. Sometimes a lesson on modelling has followed one on natural history or science; sometimes the children, after an object lesson upon the formation of a fruit or the germination of a seed, have modelled the object, thus at once testing the correctness of their impression and driving it home. Clay modelling has been used to illustrate the geography lessons; for example, the children construct a model of the river basin in which they live; and again, illustration has been found for the history lesson in constructing a model of some neighbouring encampment, whether square or circular, Roman or British. As a knowledge of form depends upon a close observation of light and shade, a lesson in modelling greatly furthers instruction in drawing. Clay modelling, however, lacks the charm of colour.

(*b.*) Colour may be studied in the following ways. When care is taken to provide a variety of tasteful shades of coloured paper, it is possible to combine the drawing, cutting out, and mounting of a number of good designs, many of which may be, in respect both of pattern and arrangement of colour, the

original work of the children themselves. The drawing may be done partly by aid of rulers and templates and partly freehand. The use of templates makes it possible to stamp on the mind certain beautiful curves at an earlier age than children can draw them freehand. This kind of exercise has been very fully developed by some of the officers under the London School Board. The advantages of it are that it promotes accuracy and good taste in colour and design, and also a sense of harmony and proportion. The defect of it is that the manipulation is somewhat monotonous, and that it does not lead to much increase of knowledge of varied objects.

(*c.*) Brushwork demands a clear perception of form and some knowledge of natural objects, and cultivates delicacy of touch, but it does not train the student to great accuracy or cultivate the sense of colour. Children, however, can express their impression of a flower, as for instance, a bluebell and its leaves, much more easily by the brush only than by the pencil, and if their observation has been very inexact, the error becomes obvious when they try to draw their impression.

(*d.*) As an exercise in accurate measurement, cartridge paper or cardboard modelling leaves little to be desired. This work is an excellent training in exact measurement and in cutting true to measure, and it furnishes an elementary notion of construction. The manipulation, however, in this exercise also, is somewhat monotonous. This kind of work lends itself readily to the illustration of instruction in simple geometry. The beginner may learn to cut out in cardboard (or more readily still in stout drawing paper) simple plane geometrical figures, and after a time he may proceed to simple geometrical solids. The cube, the cone, the cylinder, the wedge, the prism, and the pyramid can all be drawn, cut out, and put together without much difficulty. The manufacture of various useful articles, such as blotting books, frames, trays, and the like, can be combined with the formation of geometrical figures.

(*e.*) As no one of the branches of manual occupation is complete when taken by itself, the most satisfactory results will follow where it is found possible to make them supplement each other.

(5.) Lastly, very great care is necessary in leading the pupils to acquire correct method in handling brushes, tools, and all the implements required. Another point which demands attention is that of the general posture of children during their lessons. Where much stooping is necessary the work should be occasionally interrupted and a short extension drill given. Unhealthy and cramped postures should be avoided. Whilst fairly accurate work should be aimed at, you must beware of expecting very fine work requiring minute finish, or any work which is likely to strain the eyesight of young children.

(6.) My Lords have noticed with satisfaction that many of the larger school boards have appointed superintendents or instructors of manual training, and have issued by their help excellent schemes of manual occupations for the lower standards. Some of these courses have already been published, and while it is contrary to the practice of my Lords to draw up any lists of educational works, you may remind managers that particulars of such schemes can easily be obtained through the usual channels of trade.

(*Signed*), G. W. KEKEWICH.

OBJECT TEACHING.—Circular 369.

EDUCATION DEPARTMENT,
WHITEHALL, LONDON,
25th June, 1895.

SIR,—It has been observed that in schools in which Object Teaching has been introduced with most success the teachers have carefully distinguished between two kinds of instruction which in other schools are not seldom confused. These two kinds of instruction are—(1) observation of the Object itself, and (2) giving information about the Object. This distinction is of importance, because the scope and method of the lesson differ according to its nature. Object Teaching leads the scholar to acquire knowledge by observation and experiment; and no instruction is properly so-called unless an Object is presented to the learner so that the addition to his knowledge may be made through the senses.

Junior teachers have not unfrequently given lessons before H.M. Inspectors which were wrongly described as Object Lessons because in dealing with the topic selected no suitable appeal was made to the eye of the scholar. A lesson, for example, on the elephant to children in village schools who have no opportunity of visiting either Museums or Zoological Gardens, may convey information and store the memory with interesting facts, but it does not cultivate the habit of obtaining knowledge directly and at firsthand, or develop the faculty of observation. However well the lesson may be illustrated by diagrams, pictures, models, or lantern slides, if the children have no opportunity of handling or watching the actual object which is being dealt with, the teacher will be giving an Information Lesson rather than an Object Lesson. It should be always remembered that in Object Lessons the imparting of information is secondary to the cultivation of the faculty of observation.

Object Teaching should further be distinguished from Instruction in Natural Science. It is Elementary Science only in so far as it aids the child to observe some of the facts of nature upon which Natural Science is founded; but as it deals with such topics without formal arrangement, it differs widely from the systematic study of a particular science. The principles of scientific classification, the continuous study of one group of natural phenomena, the generalization from facts and the search for natural laws, belong to a later stage of mental discipline, which will be much more effectual if it is being based upon the preliminary training of the senses through sound Object Teaching. It is most important, therefore, that if, for example, Object Lessons are given on plant life, no attempt should be made to treat them as a continuous introduction to the study of Botany, or if the lessons relate to animal life, to the study of Zoology. In Object Teaching, the chief interest in the lesson should centre in the Object itself.

The following suggestions, which have been made by practical teachers, will be found useful:—

(1.) The teacher should select only so many of the Objects set forth in the appended or other similar lists as can be dealt with in the year without overburdening the scholars. Habits of observation are better cultivated by the thorough examination of a few objects than by the superficial treatment of many.

(2.) No object should be chosen which the teacher cannot thoroughly illustrate either by the Object itself or by some adequate representation of the Object, or by both. All that is purely technical, whether in the mode of study or the language and terminology, should be carefully avoided.

(3.) The children should be encouraged to bring with them to the lesson illustrative specimens which they have collected or borrowed from friends.

(4.) The children should be encouraged to make simple drawings illustrative of their observations wherever possible, and in certain cases to make simple records on square-ruled paper. Clay modelling and other manual occupations may be employed to test the accuracy of the impressions which the children form, and to fix them in their minds. Teachers also should frequently illustrate details of the lesson by black-board drawings. Children who are jaded in five minutes by a lecture will be open-eyed and receptive or half-an-hour while the teacher draws as well as talks.

(5.) Visits to Museums and other institutions of educational value are now recognized by the Code, and may advantageously be undertaken where possible in connexion with the Object Teaching. Occasional class excursions out of school hours (or, if the instruction be in accordance with Art. 12 (*f.*) of the Code, in school hours), under proper guidance, will enable teachers both to provide suitable Objects and to confirm previous impressions. It should be borne in mind that Objects, when they are brought into the class room, cannot be there studied under their ordinary conditions; and therefore it is important by a proper use of such expeditions to let the children see what part the Object plays in its usual surroundings.

(6.) If the scholars are to learn intelligently from their Object Lessons, the first requisite is trained attention. The right method of securing this is to direct, in a conversational way, the attention of the children to the different parts of the Object in an orderly manner, and explain the relation of each part to the whole. After the analysis or study of separate detail, the Object should be again treated as a whole. It should not be left in fragments, but the division into parts should be followed when possible by the reconstruction of them into their original unity. Through such teaching the vague and indefinite impressions which children receive from Objects when they are first presented to them are gradually converted into clear mental pictures.

(7.) The attempt to teach children to be accurate in observation cannot be separated from the need of making them accurate in description. After the children have been trained to observe a fact they should be practised in making a correct statement of it in a sentence of their own. This oral answering in complete sentences will lead to correct use of the English language, both in talking and writing, and will store the mind with a useful vocabulary. In the higher standards the children will be able to write brief weekly compositions in which they may express in a written form the ideas which they have acquired through oral instruction.

To sum up the main value of Object Teaching, there are three principal uses. The first and most important is to teach the children to observe, compare, and contrast; the second is to impart information; and the third is to reinforce the other two by making the results of them the basis for instruction in Language, Drawing, Number, Modelling and other Handwork.

There, are, however, other important uses of good Object Teaching. It makes the lives of the children more happy and interesting by opening up an easily accessible and attractive field for the exercise of brain, hand, and eye. It gives the children an opportunity of learning the simplest natural facts and directs their attention to external Objects, making their education less bookish. It further develops a love of nature and an interest in living things, and corrects the tendency which exists in many children to destructiveness and thoughtless unkindness to animals, and shows the ignorance and cruelty of such conduct. The value of the services which many animals render to man should be dwelt upon, and the importance of kindly treating them and preserving them should be pointed out. By these means, and in other ways, good Object Teaching may lay the foundation for the right direction of the activity and intelligence of the children throughout the whole school.

I have the honour to be, SIR,
Your obedient Servant,
G. W. KEKEWICH.

OBJECT LESSONS:—

The following lessons deal with the ordinary phenomena of common life and with objects familiar to the children. The teacher's choice is not confined to these lists; other objects will be accepted subject to the approval of the Inspector. Any of the objects may be dealt with at the discretion of the teacher in more than one lesson, and although they have been grouped for convenience of reference, it is not intended to prescribe any specified number of them for a yearly course. With different treatment the same object may be adapted to more than one standard. Some teachers may prefer to deal with the same object in successive years, or to recur to it after a year's interval, expanding the study to suit the growing powers of the scholars. To meet the varying requirements of teachers it will be noticed that in some cases the names of the objects have been merely enumerated, while in other cases a few suggestions have been added as to the mode of treatment.

I. Plant Life.

(a.) The study of plants as growing things.—**Grow an onion** in a bottle of water and note appearance of root and stem. Make a model in clay of the various stages of growth at short intervals. **Grow mustard** seed on damp flannel and note stages of growth. **Notice a few curious roots.**—The carrot. Cut off the top of one and grow it in a saucer of water. Contrast the root of a daisy (fibrous). Roots which walk.

Strawberry or strayberry. Violet root. Contrast root of Iris and Solomon's Seal in their modes of extension. **Stem.**—Count the rings in a trunk that has been felled. Rings, how produced; estimate age of tree; the record of wet or dry seasons. **Climbing stems.**—Ivy. Train bindweed up a stick and note that it turns to the right. If you unwind it and force it the other way (to the left) note how it resumes its old direction again, holding the stick with one of its leaf stalks to get a purchase for the change. **Simple experiments** to show effect of light on (1) leaves and (2) roots. Celery; blanching. **Leaves of deciduous trees** contrasted with leaves of evergreens. Contrast leaves of holly, ivy, and box with leaves of oak, elm, and beech. **Note autumn tints.**—Collect and press leaves of various colours in autumn. **Buds.**—Leaf buds and flower buds. **Parts of a flower. Fruits.**—Different kinds.

(b.) Blossoms, Fruits, Seeds, and Leaves.—Parts of a flower. Flowers of curious shape. Pea blossom. Insects and flowers. Colours of flowers and insects. Fruits. How seeds are scattered. Shooting seeds. Flying seeds. Curious flowers, *e.g.*, primrose; compound flower (daisy); water lily. Leaves. Shape, veining, arrangement. Flowers as supplying (1) weather-glass, (2) clock, (3) calendar. Examine celery plant. Cut leaf stalks into thin sections to see how a plant is built up.

(c.) How plants are adapted to their surroundings.—A bunch of spring, summer, or autumn flowers (according to time of year). Flowers and the soil. Bog plants. Riverside plants. Plants that grow in running water. Plants that grow in still water. Meadow plants. Plants of the heath and moor. Plants of the hills. Plants of the wood. Plants of the sea-coast and salt marshes. Sundew and flesh-eating plants. Ferns. The spores of ferns. Grow some spores in a pan under glass and watch growth and development of a fern. Contrast with growth of mustard from seed. Mosses. Lichens. Funguses. Simple experiments in manuring plants. How plants help or hinder each other's growth. Parasites. Mistletoe. Plants which help or injure man.

II. Animal Life.

(a.) **The Cat** (compare with Dog).—Eyes, rough dry tongue, soft pads and sharp claws, teeth, method of holding prey, drinking, covering of fur, whiskers, tail. **The Cow** (compare with Sheep and Goat).—How she takes her food, teeth, chewing, milk (cheese and butter), tail, hoofs, covering, ears, horns, nose. **The Horse** (compare with Donkey).—Covering, teeth, hoofs, tail, mane. **The Rabbit** (compare with Hare). teeth, legs, feet, claws, covering, tail, whiskers, ears, eyes. **The Mouse** (compare with Rat and Water Rat).—Teeth, paws, tail, whiskers, eyes, ears. **A Fish.**—How fitted to live inwater, weight, shape, covering, temperature, movements. **A Plaice** (compare with Herring).—Fat, eyes on one side of head, gills, movements. **Animals which sleep in Winter.**—Examples: squirrel, dormouse, common snake, frog, toad, snail, slug. Preparation made for sleep.

(b.) **Mole.**—Shape, snout, teeth, paws, claws, eyes, ears, fur, food. **Hedgehog.**—Covering of spines, how it rolls itself into a ball and why, head, teeth, food, **Common Snake** (compare with Viper).—Shape, covering, teeth, how it moves, how it swallows its prey. **Frog** (compare with Toad and Newt).—Movement, capture of prey, breathing, winter quarters. **Garden Snail** (compare with Slug).—Shell, mantle, head, horns, eyes, food, preparation for winter sleep. **Earth Worm.**—Shape, rings, locomotion, food, usefulness. **Spider** (contrast with Bee).—Shape, segments, legs, eyes, jaws, spinnerets, web, breathing organs.

(c.) **Paws and Claws and their uses.**—Cat, dog, rabbit, mouse, mole, frog. **Tails and their uses.**—Horse, cow, donkey, dog, cat, monkeys, harvest mouse. **Tongues and their uses.**—Cat, dog, cow, woodpecker, frog. **Teeth and their uses.** Man, cat, cow, horse, rabbit, snake, fangs of poisonous snakes. **Hair, Fur, Wool and their uses.**—Cat, mole, dog, sheep, fox. **Beaks of Birds and their uses.**—Duck, fowl, parrot, sparrow, goat-sucker, heron. **Feet of Birds and their uses.**—Duck, fowl, swift, owl, &c. **Insects.**—Examples: bee, beetle, butterfly, cockroach, silkworm. Insect development, legs, wings, segments, mouth, breathing apparatus, ovipositors.

III. The Sky, the Air, the Surface of the Land, and Water.

(a.) The Sky.—**Sunrise, noon, and sunset.**—Note the object over which the sun is seen to rise from month to month. Note sun's position at noon, and its varying height above horizon. **Shadow.**—Note by aid of a spike erect on a flat disc the varying length of the shadow at noon. Study the shadows of objects. Variation in sharpness and depth. **Moon.**—Note the changes. Draw the shape from week to week. **A few of the brightest constellations.**—Make diagrams on square ruled paper from a study of the sky itself. Great Bear and Pole Star; Lyre and Vega; Cassiopeia. **Planets.**—Note any planet visible when the lesson is given. Mark its position on square ruled paper for a few weeks. **Varying length of day and night.**

(b.) The Air.—**Wind.**—Varying direction. Note and keep record of the direction of the wind from day to day. Warmer and colder winds; rainy and dry winds. **Moisture in the air** shown by seaweed; string (changing tension). Wet cloth dries in the wind (water turns to vapour). Vapour turns to water. Breathing on slate. **Clouds** on hills. Evening mists. Clouds in the sky. Three chief kinds: "heaps," "beds," "feathers." **Rain.**—Note size of drops. Raindrops on dust form little balls. Note effect of heavy rain in tearing up roads. Note the channels so made, and the arrangement of the sand and pebbles washed to a distance. **Rainbow.**—Note the succession of colours. Note position of sun behind observer and of the bow where the shower of rain is falling. Note that height of arch changes. When is it higher and when lower? Rainbow colours on shells, film of tar, &c. Feathers of birds. **Dew.**—Note when formed. Cloudless weather. On what does it lie thickest? **Hoar frost. Snow.**—Note size of flakes. Movement of flakes in the air as they fall. Snow-drift. Snow squeezed into ice. **Hail.**—Note when it falls. Examine hailstones. Is the hail accompanied by thunder? **Thunder and lightning.**

(c.) The Surface of the Land.—**Level or sloping.**—Simple way of measuring slope. Height of school and neighbouring hill tops above sea level. **Flow of water over the land.**—Neighbouring stream or streams. Water-partings. The river basin in which the school is situated. **Construct a model fountain** and make simple observations on the pressure of water. Milldam. A "head" of water. Notion of falling water as a motor. **Soils.**—Clay, sand, slate, granite, chalk, quarries near school, gravel pits, clay pits, brick works. Note how the rocks lie, in layers or in masses without structure. **Stones in the brook,** water worn; pebbles on beach, rounded; pebbles in gravel pit often with sharp edges, perhaps iceborne. Difference between sand and mud. Crumbling rocks. Effect of frost on damp rocks. **Caves by the sea** formed by the waves; caves inland formed by rain dissolving limestone; stalactites. (A lesson for schools in limestone regions or near rocky coasts.) **Building stone,** marble, slate, Bath stone, sandstone, &c. In marble, note shells, &c. Note plants in coal. **Volcanic rocks.**—Lava, brimstone, pumice stone, basalt or whinstone. (According to the nature of the district.) **Rock salt**; crystals of salt. Salt in sea water. Mineral in solution. **Hard and soft water.**—Rain water compared with streams from chalk or limestone; leavings after evaporation. Fur in kettles. Softening hard water. In certain districts, other minerals in solution, sulphur wells, iron springs, medicinal waters. **Mortar and cement.**—Slake lime and make mortar; note the heat, &c. **Surface soils.**—Crumbled rocks. Waterborne sand and mud. Vegetable mould and earth worms. **Vegetation and cultivation.**—Forest, moor and heath. Heathers. Hedgerow trees, elms, ashes. Trees of the forest, oak, beech, birch. **Evergreen trees,** pines and furs. Evergreen plants and shrubs, holly, ivy, box. Contrast evergreen and deciduous leaves. Note changes at fall of leaf. Autumn tints. Press specimens. **Riverside trees,** willows, poplars, aspens. **Hill pastures and meadows.**—Turf on the downs and hay in the valleys. **Gardens and their contents.**—Garden fruits and wild fruits. Garden flowers and wild flowers.

(d.) Water.—**Standing water**; ponds, pond life. **Springs and running water**—Clear water looks shallower than it is. Simple experiments in illustration. **Study of flow of a stream.**—Where the flow is quicker (*a*) in the middle; (*b*) on one side, outer and inner bend. Where the bank is eaten away and where sand is spread out. Varying bottom; deep pools, shallows, sand banks. Confluence of tributary. Delta. Measure the speed at which the water flows. **Study of seashore.**—Rocky and sandy coasts. Soundings. The rise and fall of the tide. Currents. Drifting sand. Effect of frost on cliffs. Breakwaters. Layers of soil and rock exposed down the side of a cliff. **Measure with thermometer** the temperature of (*a*) a spring; (*b*) a stream; (*c*) a pond; (*d*) the sea. **Ice.**—Study hardness, mode of fracture; splitting blocks with a needle. Does it sink or swim in water? Easy to make two surfaces of ice freeze together. Simple experiments with ice. Watch and record behaviour of thermometer plunged in melting ice. Melt some ice carefully to find out whether it takes up more or less room than the water into which it changes. Force a mass of ice into a lump of clay and let it melt there. Freeze some water in a bottle and note bursting of bottle. Bursting of pipes. **Notes on expansion and contraction** of substances illustrated by behaviour of water at different temperatures. Preliminary notion of thermometer. **Watch cold spring water being heated** to boiling point in transparent glass vessel. Note bubbles of air given off, and as the water is heated bubbles of steam rising from below. Observe force of compressed steam. Preliminary notion of steam engine. **Dribble powdered alum into clear water.**—Hang thread in the solution and note the formation of crystal. Alum and other crystals. Expose to the air crystals of (1) salt; (2) soda. Note change. What difference? What difference according to weather? Expose to the air crystals of saltpetre, and note result. **Dribble salt into clear water and note that it dissolves,** quicker at first, then slower, at last no more is dissolved. Place a fresh egg in saturated solution and afterwards transfer it to clear water. **One liquid is denser than another.**—Compare water and mercury Things which float in

mercury and sink in water. **Upward pressure of water** on bodies dropped into it. Why bodies sink or float. Why steel ships float. Why cork floats. Simple experiments in displacement of water. Simple experiments in pressure of water and pressure of air. Syphon. Squirt, pump. Diving bell. Distillation of water. Filtration. **Water**; a combination of two gases, oxygen and hydrogen. Simple experiments.

IV. Object Lessons for Town Schools.

(a.) **The water we drink.**—How obtained. Some of the simpler properties of water. River (or canal), according to circumstances. **Boats, barges, or ships,** with which children are familiar, according to circumstances. Other ships, *e.g.*, Atlantic liners. **Bricks.**—Their size, shape, and manufacture; their size, &c., to be ascertained by children's measurements. **Bricklayer's work.**—Arrangement of bricks in 14-inch wall and in 9-inch wall, shown with real bricks or with small wooden ones; mortar, &c. **Coal.**—Its simpler properties. How obtained. How transported, and how used. **Coal-gas.**—It may be made in presence of the children. Gas works and gas pipes. **Petroleum.**—How obtained; its simpler properties and uses. Lamps and their dangers. **Common stones** used in building and road-making. Road-making and paving. Quarries and quarrymen. **Railways.**—General sketch. Engines and carriages. The work of railway men. **The park or public garden.**—General sketch; one or two of its more conspicuous trees; and one or two of its more conspicuous plants. **Comparison between calico and flannel.**—Cotton and its manufacture. Lancashire and the cotton district; mills. Sheep-clipping and rearing. The West Riding of Yorkshire; factories, &c.

(b.) Cart-horse. Donkey. Sparrow. Rat or mouse. Cat. **Plants grown in schoolroom.**—Acorn in glass of water. Mustard and cress. Hyacinth in water or pot. A fern. Costermonger and what he sells. **Some common fruits sold in streets or shops,** *e.g.*, pears and apples, strawberries, oranges, cocoanuts. **Things seen in grocer's window,** *e.g.*, tea, sugar, coffee, currants and raisins. The baker and his work. The milkman. The addressing and posting of a letter. The postman and Post Office. The sweep and his work. Dangers from fire, and how they may be avoided. The fireman and fire-engines. 'Bus or tram drives. The policeman.

V. Object Lessons for Country Schools.

(a.) **The farmyard.**—Its buildings and their contents. Animals kept on a farm and their uses. Necessity of cleanliness, kindness, and suitable food. **The dairy and its contents.**—Butter and cheese making. **Bees.**—Bee-keeping. **Spring.**—Spring flowers. Work in the fields in spring. The cuckoo and swallow. Record date of arrival. **Summer.**—Different kinds of leaves and fruit. Work in the fields in summer. **Autumn.**—Work in the fields. **A mill** and the work of a miller. **Winter.**—Frost. Ice. Snow. **Birds.**—Singing birds, as the thrush and nightingale. Birds of prey, as the hawk. Swimming and wading birds, as the duck and heron. **Wild animals.**—The fox, hare, and rabbit. **Minerals.**—A mine. Three useful minerals. **The lessons on the seasons** should correspond with the actual seasons of the year, and the different operations explained should be taken while each is in progress. **Leaves of trees** may be dried by simply placing them between sheets of paper and pressing them. Their shapes may be used for the children to draw round on paper, which can afterwards be pricked and then sewn round.

(b.) **Springtime.**—The waking of Nature. The lengthening daylight in the morning and evening, the coming warm weather, birds singing, building their nests, laying their eggs, the trees and hedges changing, buds and leaves, the bloom on fruit trees. The local wild flowers of spring. The daisy, primrose, bluebell. **Summertime.**—The local wild flowers of summer. **Autumn.**—The local wild flowers of autumn. **Winter.**—The repose of Nature. **The land.**—Woodland, meadowland, ploughland, moorland. **The sky. A bird.**—Covering, wings, beak, feet; motion; nests, eggs, food. **Local birds.**—Thrush or blackbird, lark, robin, rooks. **Birds which come for the summer. Birds which come for the winter. Local wild animals.**—Rabbit, hare, fox, hedgehog. **Animals on a farm. Miscellaneous.**—Our village. The carrier's cart. The cottage garden. The stream or river, its banks, the birds and animals that live near it. A fish. A plant.

(c.) **The garden** in spring, summer, autumn, and winter. **The farm** in spring, summer, autumn, and winter. **The weather** and wind. **The soil**; sunshine, air, rain, frost, manure. **The farmer's tools.**—The plough, drill, reaping machine. **The crops.**—Grass, corn, root-crops, wheat, potatoes. **Trees.**—The oak tree, elm tree, and apple tree. Evergreen trees. **An insect.**—The spider and his web. The butterfly; colours, beauty, history. Bees. **The farmer's pests. The farmer's friends. A pond.**—A frog. **A ramble** in a wood and what may be seen there. **Miscellaneous.**—The railway. Market-day in the neighbouring town. A newspaper.

VI.—Object Lessons in the Science of Common Things.

(*a.*) **Water.**—How carried, jugs, bottles, barrels, spouts, funnels. Wells. Things that float, things that sink. **Solids.**—Hard and soft, in the room and in clothing. Files. Hammer and nails. Buttons. **Powders.**—Flour. **Pastes.**—Paste, clay, putty. **Things porous.**—Bread, sponge. **Things that melt.**—Butter, tallow, sealing-wax. Ice, snow. **Water.**—Drying clothes, breathing on slates, frost on the pane. The boiling of the kettle. The pot boiling over. **Things that dissolve.**—Sugar, salt. **Air.**—Bubbles, pouring water through funnel into empty bottle. A burning candle. Fans, blowing feathers. Paper windmills. **Forms of strength.**—The floor, joists and boards. Wooden bridges. Steps and stairs. **Things that stretch.**—Elastic bands. **Things that bend.**—Bow and arrows. Cord, ropes. **Machines.**—Tops. Roller for pastry, for garden. Perambulator. **Movements.**—Walking, running, leaping, creeping, crawling. **Musical Toys.**—Harmonicon. Bell.

(*b.*) **Water.**—Pipes, taps, the fountain. Canals. Rafts, boats, anchors. **Solids.**—Teeth, nails and claws. Sand-paper. Pins, needles, awl, gimlet. Hook and eye. **Powders.**—Chalk, pencil. **Pastes.**—Mud in streets, brick making. **Things porous.**—Brick, chalk, springs of water. **Things that melt.**—Candle-making. Icicles. **Water.**—Manufacture of salt from brine. Rain-drops, hail, spray, water-dust, the cloud. **Things that dissolve.**—The manufacture of sugar. **Air.**—The chimney, draughts. Waves and breakers. Winged Seeds. Shuttlecocks, arrow, and kite. **Forms of strength.**—The ceiling. The arch. Ladders. **Things that stretch.**—A football. **Things that bend.**—Cart springs. Paper clips. Spider's web. **Machines.**—Hoop, fly-wheel of sewing machine. Mangle. Waggon. Bicycle. **Movements.**—Swimming. **Musical Toys.**—Musical box, drum.

(*c.*) **Water.**—Syphon, pump. Oil, cream. **Solids.**—Hinges, tires, and axles. The grindstone. Screws and screwdrivers. **Powders.**—Black lead. **Pastes.**—Pottery. **Things porous.**—Blotting paper, towels, wicks, earth. **Things that melt.**—Lead, iron. **Water.**—Salt lakes. Distillation of water. Clouds and rain. **Things that dissolve.**—Crystals, hard water, varnishes. **Air.**—The pop-gun, the fire-engine. Winds. A sailing ship. **Forms of strength.**—The roof. Railway bridges. Cranes. **Things that bend.**—Clock springs. Chains. **Machines.**—The loom. Threshing machine. Rolling iron rails. Coining. **Movements.**—Flying. **Musical Toys.**—Tin whistle. Sounds from stretched cord.

VII.—Measuring, Weighing, and Testing.

A two foot rule. Measurements of length—first by eye, then with rule. Easy measurements of a square—first by eye, then with rule. (Measurements in inches only.) Easy measurements of rectangles. The wire-gauge. Callipers. Scales and weights. Weighing of common objects—first by hand, then with scales; weight in ounces only. Weighing letters. Plumb-line. Spirit level. Steam—observations on boiling water; condensation of steam, &c. Mercury—weight of; *cf.* drop of mercury and drop of water; effect of heat on mercury. Alcohol—effect of heat on it; its evaporation. Thermometer, its manufacture. Thermometer—uses; readings in ice, in boiling water, under the tongue, in schoolroom. A candle—its composition. The wick. Candle under bell jar over water; candle in narrow-necked bottle. Chalk—where found; its origin. Chalk—its treatment with acid. Chalk—its reduction to quicklime with blow-pipe; lime-water. Sugar heated in test-tube; wood heated in test-tube. Sulphur heated in test-tube; lead heated in test-tube. Magnet and iron filings. The compass.

NOTICE TO TEACHERS.

The changes in the articles of the code, in registration, and in the government returns have been notified in the preceding pages. They are corrected up to July, 1902. Any further changes in the code of March, 1903, should be inserted.

INDEX.

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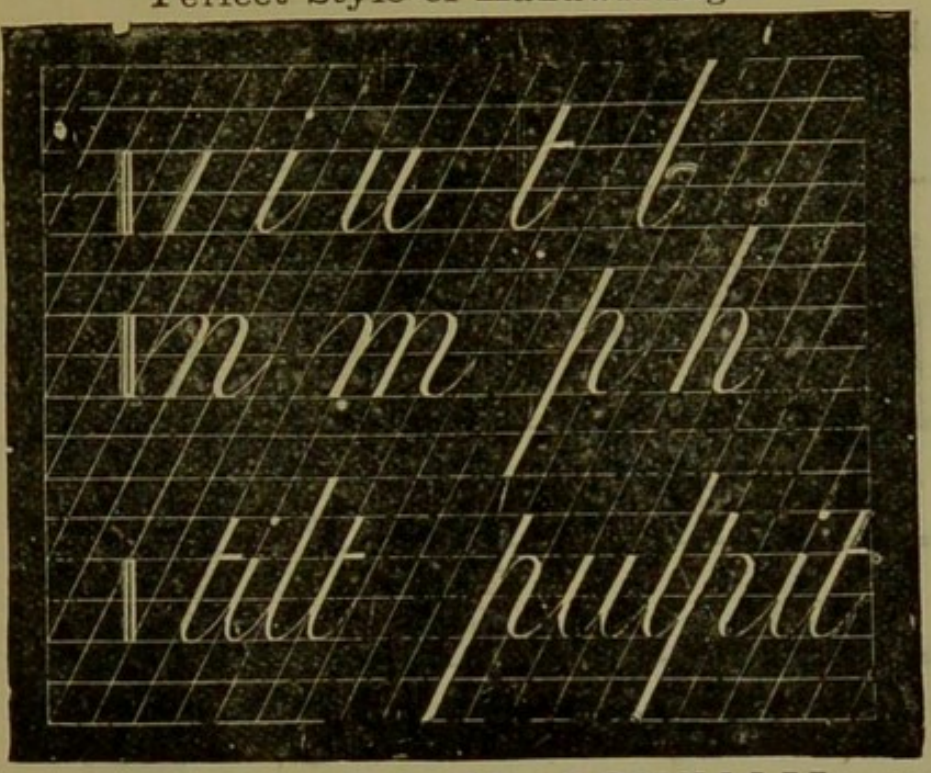

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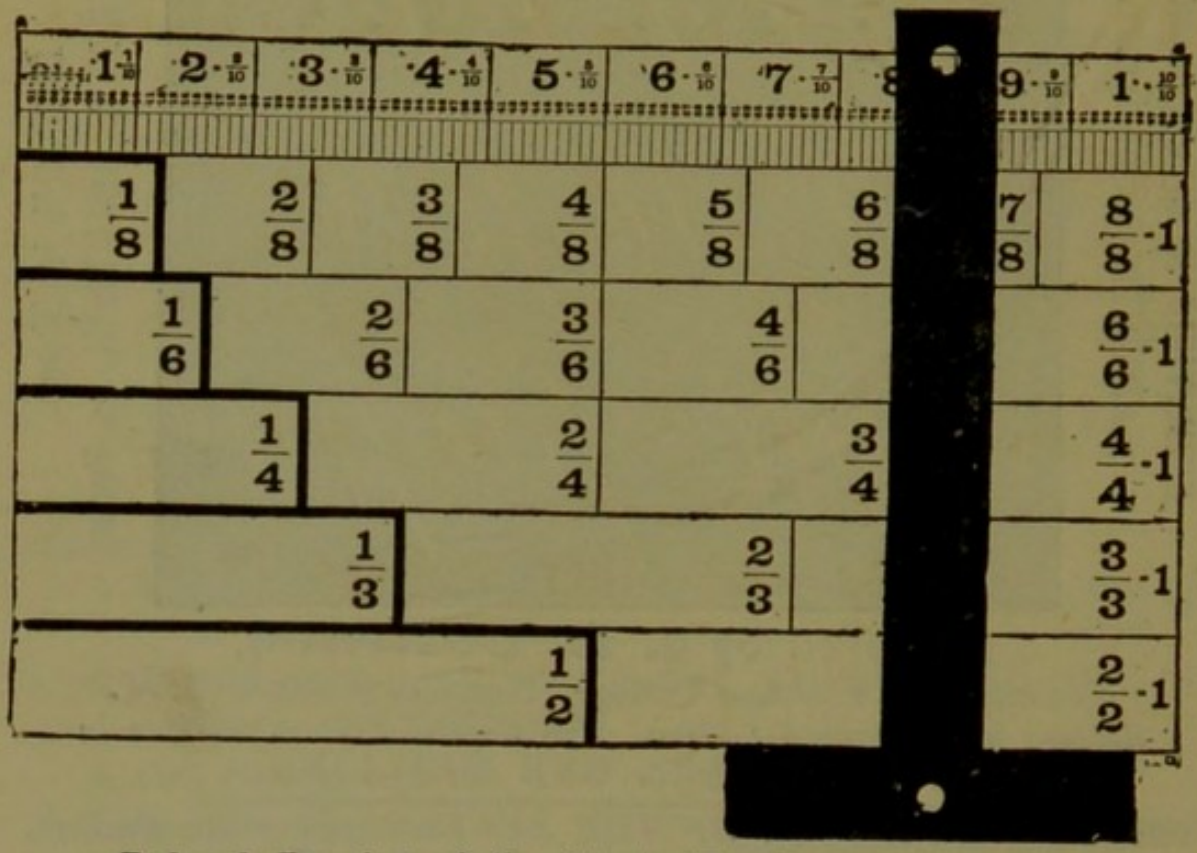

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