THE

ART OF TEACHING

BY

DAVID SALMON

PRINCIPAL OF SWANSEA TRAINING COLLEGE

SECOND EDITION

LONGMANS, GREEN, AND CO.

39 PATERNOSTER ROW, LONDON

NEW YORK AND BOMBAY

1900

CONTENTS

	PAGE
INTRODUCTION	1
SOME GENERAL PRINCIPLES	4
ORDER, ATTENTION, DISCIPLINE	10
ORAL QUESTIONING	39
OBJECT LESSONS	58
READING	74
SPELLING	120
WRITING	125
ARITHMETIC	144
ENGLISH	177
GEOGRAPHY	197
HISTORY	212
THE EDUCATION OF INFANTS	218
HERBARTIANISM	262
QUESTIONS	270
INDEX	297

THE

ART OF TEACHING

THE

ART OF TEACHING

BY

DAVID SALMON

PRINCIPAL OF SWANSEA TRAINING COLLEGE

SECOND EDITION

LONGMANS, GREEN, AND CO.

39 PATERNOSTER ROW, LONDON

NEW YORK AND BOMBAY

1900


18. SE. 07

PUBLISHERS' ADVERTISEMENT

TO THE

SECOND EDITION

In this edition the chapter on the Education of Infants has been slightly enlarged, and a chapter on Herbartianism has been added.

CONTENTS

	PAGE
INTRODUCTION	1
SOME GENERAL PRINCIPLES	4
ORDER, ATTENTION, DISCIPLINE	10
ORAL QUESTIONING	39
OBJECT LESSONS	58
READING	74
SPELLING	120
WRITING	125
ARITHMETIC	144
ENGLISH	177
GEOGRAPHY	197
HISTORY	212
THE EDUCATION OF INFANTS	218
HERBARTIANISM	262
QUESTIONS	270
INDEX	297

THE ART OF TEACHING

INTRODUCTION

MILTON calls 'a complete and generous education that which fits a man to perform justly, skilfully, and magnanimously all the offices, both private and public, of peace and war.' Expanding this, we may say that a man completely and generously educated has every muscle of his body well developed ; every sense trained to the rapid and full perception of physical facts ; a memory strong to retain, quick to reproduce, and stored with knowledge likely to facilitate the business and elevate the pleasures of life ; an imagination accustomed to create lively pictures of beauty and lofty ideals of conduct ; an intellect refined and powerful, sure in judging and logical in reasoning ; emotions moved to admiration by '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 ;' a will which the storms of passion cannot shake, and which has so constantly decreed right action that wrong action has become difficult.

'A complete and generous education'

While the teacher should always have in view a noble conception of his functions, we must remember that 'a complete and generous education' is the resultant of many forces, most

of which are altogether beyond his control. The health, strength, and symmetry of the body, for instance, depend largely on inherited powers and tendencies, on soil and climate, on food and clothing, and on the home life. The teacher, by watchfulness over the hygienic conditions of the school, by an intelligent alternation of work and play, by drill and calisthenics, can co-operate with these influences when they are good, but his power of counteracting them when they are bad is limited.

The teacher is only one factor

1. In physical education

Similarly, in the all-important matter of the formation of character, the teacher is only one of the factors. He ought, by setting an example of respect for self and respect for law, by fostering love of all that is great and good, and hatred of all that is base and mean, by insisting on prompt and encouraging cheerful obedience, by seeing that every obligation is performed punctually and diligently till punctuality and diligence become habits, and by direct lessons on life and conduct, to be able to train his pupils to the efficient and faithful discharge of every duty of the home, the business, and the State. But his influence may be weakened or destroyed by inborn predispositions, by impulses given before school life began, or by companions and surroundings without his cognisance and beyond his control.

2. In moral education

Even in his own special domain, the cultivation of the intellect, the teacher is not absolute. He cannot make poor soil rich; he cannot (if he would) keep others from working in the same field; and he cannot (though he would) prevent the enemy from sowing tares.

3. In intellectual education

Consideration of the fact that 'a complete and generous education' is the resultant of many forces ought, on the one hand, to make people slow to blame the teacher for a failure, which, so far from causing, he alone may have prevented from being greater; and ought, on the other hand, to induce him to

put forth redoubled efforts to overcome every resisting force. It ought also to convince him of the serious responsibility of his work, and the consequent need of his being adequately prepared for it before undertaking it. He should have studied not only the subjects in which he has to give instruction, but also the beings whom he has to instruct and train, body and soul. To make sure that the school is carried on under healthy conditions, and that the drill and physical exercises are rightly directed, he ought to have a good practical knowledge of hygiene and physiology. To develop the minds and form the characters he ought to be able to apply the best rules of pedagogy, and to have a thorough acquaintance with the science underlying these rules, that is, with psychology. The human mind thinks, feels, and wills in accordance with certain laws, and if the teacher is ignorant of them, he may be unconsciously striving against them, and much of his labour may be vain.

Need of professional training

SOME GENERAL PRINCIPLES

A GENERAL recognition of the fact that the teacher has to train body, intellect, and character is modern. By many of the masters of the past the body was totally ignored (except when the birch was applied to it as a means of quickening the memory), and the character was also ignored. It is true that every game played had its effect upon the body, and every lesson learned (or left unlearned) had its effect upon the character ; but the duty of cultivating both mind and character by conscious efforts, conducted according to a well-reasoned plan, was little heeded. Even in these days the teacher is too often tempted to give most attention to the intellectual part of his work. It is the only part in which he is the chief factor ; it is the only part in which an examiner can, with any hope of accuracy, estimate his skill and success ; it is frequently the only part in which parents look for progress. But the very fact that circumstances conspire to make the teacher overlook some aspects of his work renders it all the more incumbent on him to keep them in view. The world wants vigorous minds, but it also wants vigorous bodies, and both would be curses instead of blessings—the greater the vigour the greater the curse—if not controlled by virtue, just as an engine that has an incapable driver will go to destruction all the sooner for its strength and steam.

The work of the teacher is threefold

Teachers who do not forget that their work means more than the cultivation of the mind, sometimes forget that the

mind means more than the memory. They think that when a pupil knows the dimensions of a country, the names of all its capes and bays, the heights of all its mountains, the lengths of all its rivers, and the population of all its towns, he knows the geography of the country. They do not try to make him see that there is a connection between the nature of the coast and the amount of maritime commerce ; that the soil and climate are affected by the height of the mountains ; that their position in relation to the coast determines the lengths of the rivers ; and that it was not a kind Providence which made great rivers run through great towns. So with all other subjects of instruction. These teachers, in their anxiety about the furniture of the Tabernacle, the dimensions of the Temple, the succession of the kings of Israel and Judah, the four lists of the disciples, and the order of the canonical books, ignore the priceless lessons of life and conduct to be learned from the Old and the New Testament. With them Grammar is only an endless series of classifications having no bearing on conversation or composition ; History consists of dates and genealogies ; and Science of technical terms that convey no meaning.

Mind means more than memory

Though it is true that the memory ought not to be cultivated while the other powers of the mind are allowed to lie fallow, it is equally true that the other powers of the mind ought not to be cultivated while the memory is allowed to lie fallow. Next to the power of observation (sense-perception), the power of memory is the earliest to manifest itself in the child, and, if methods of teaching are to conform to natural laws, every power must be exercised as soon as it appears. Even in the Kindergarten and the infant school, therefore, the process of storing the memory with things worth remembering for their beauty or their utility should be begun. Arithmetic is slow, or impossible to one who is not familiar with tables ; History is vague and perplexing to one

Still the memory must be cultivated

study. Memory furnishes the tools for mental operations; it is the source of much pure pleasure; and the faith that what he teaches will be remembered affords the teacher a constant motive for effort. By all means let children learn by heart, but do not let them, parrot-like, learn mere words. They should never be made to remember what they do not understand; nay, more, they should never be made to remember but because they understand. The Multiplication Tables, for example, should not be accepted on the authority of the teacher or the book. The pupil should build them up for himself by employing tangible objects, and should acquire perfect facility by repeating experiments, not by repeating numbers.

The aims of intellectual education are three: utility, discipline, and pleasure. If a young man on leaving the university and entering his father's counting-house cannot read the letters of the firm's foreign correspondents, he is tempted to think that the time which he spent over classics has not been well spent; a knowedge of the Hellenic colonies does not compensate him for ignorance of the British colonies; and familiarity with the constitution of Athens or of Rome may not help him much in the recording of his own vote. Similarly, if a boy on leaving a primary school cannot write a letter correct in form and grammatical in expression, the fact that he can analyse and parse a difficult sentence is of small comfort to him. It does not follow that Greek and Latin, analysis and parsing should not be taught, but it does follow that subjects which are likely to be of practical utility should be taught, and the shorter the school life the greater the proportion of it which should be given to such subjects.

The three aims of intellectual education
1. Utility

The second aim of intellectual education is discipline. The mental powers grow and are strengthened by use, and we pursue certain studies not because we think that we are ever likely to be called upon to apply them, but because we know that they make the mind fitter for

2. Discipline

the performance of any task. Greek and Latin, apart from their value as keys giving entrance to ancient treasure-houses of thought and beauty, afford an excellent training in precision; analysis and parsing offer ready exercises in the logical process of classification. So with Euclid and Algebra. No one who knows these subjects will deny their practical value; but we do not teach them solely, or indeed mainly, because of that. Though a teacher might be sure that none of his pupils would ever be called upon to apply either, he would still, if the school life were long enough, teach both, for the sake of the mental development that the study of them brings. Algebra trains the mind to deal with abstractions and generalisations, and Euclid to make correct deductions from stated premises; and while skill in mathematics may, to many persons, be of small importance, skill in abstract and deductive reasoning must be of great importance to every one.

3. Pleasure

The third aim of intellectual education is æsthetic. Children must be taught to see and to admire the beautiful in nature, in art, and in literature, and to find in it unfailing springs of lofty aspiration and pure pleasure. Poetry and painting may be outside the limits of a narrow utilitarianism, but they are well within the limits of 'a complete and generous education.'

The predominant aim

How far any one aim should predominate must be determined by the length of the school life. Where that is short, utility ought to be the chief consideration, though the other two ought never to be lost sight of. Whether the school life be long or short, those subjects of instruction are most precious which subserve more than one purpose. Reading, Writing, and Arithmetic, for instance, must be taught because of their utility, but Reading may be so taught as to develop the appreciation of literary form and moral worth; Writing may become an instrument for training the eye and the hand, and Arithmetic for training the reason.

The powers of the body, the mind, and the spirit alike grow

by use. It was not by working under a spreading chestnut tree, by eating nourishing food, or by reading about Hercules and Samson, that the village blacksmith succeeded in getting the muscles of his brawny arms strong as iron bands; it was simply by wielding the hammer. The actor who becomes word perfect in a new part almost as fast as another man could read it, learned slowly enough when he first went on the stage; and the clever detective's ability to separate from a mass of facts the few relevant to his purpose came by practice. Similarly, the Happy Warrior

Exercise the secret of growth

> Is placable because occasions rise
> So often that demand such sacrifice;
> More skilful in self-knowledge, even more pure
> As tempted more; more able to endure
> As more exposed to suffering and distress.

It follows, therefore, that the teacher must provide exercises for every power which he wishes to develop, and, as a corollary, that there must be an increase in the difficulty of the exercise, corresponding to the growth of the power.

It follows also that learning must be the pupil's own act. If a boy is to be taught swimming, telling him how to move his hands and feet is not enough; he must go into the water and move them. A teacher can with advantage direct his efforts, but can put forth no efforts for him. And what is true of the body is true of the mind. The teacher cannot exercise the pupil's powers, he can only stimulate and control the exercise of them. The teacher cannot see, hear, feel, touch, or smell for the pupil, but he can choose the objects which will best cultivate the pupil's senses, and he can make him observe the objects in the way which will produce the greatest results. The teacher cannot reason for the pupil, but he can select facts, and by judicious questioning make the pupil reason on them for himself. In short, the teacher can-

Learning is self-teaching

walk, show him the path, and smooth away some of the obstacles. The pupil who is carried gets no exercise, and if the process is repeated often enough, he loses, in the end, the power of walking.

From the concrete to the abstract

The mind proceeds from the concrete to the abstract, from the particular to the general, and forms ideas of the things which have not come under the observation of the senses by modifying its ideas of the things which have come. A little child has a clear perception of *Tom*, *Jack*, *Harry*, before he has any idea of *brother*. So *Amelia*, *Mary*, *Dorothy* come before *sister*; *brother*, *sister*, *father*, *mother*, before *relative*; *bow-wow*, *gee-gee*, *bah-lamb*, before *animal*; *chair*, *table*, *couch*, *sideboard*, before *furniture*. Somewhat later white snow, white paper, white flowers, a white frock, a white shirt, give rise to the abstract idea of *whiteness*; and *whiteness*, *blackness*, and *redness* to the general idea of *colour*. A teacher who neglects this natural law is as much fore-doomed to failure as would be the farmer who attempted to grow potatoes on trees or apples underground. And it is a law which must be applied to every subject of instruction. In Arithmetic, for instance, children must be familiar with five fingers, five marbles, five beads, five pebbles, five anything, before they are introduced to the abstract number five. They must find out by many and varied experiments that six things and seven things make thirteen things before they can understand $5+8=13$; and the power of abstraction and generalisation must be well-developed before they can realise the meaning of $a+b=c$. In Grammar, again, names must precede Nouns, the study of the functions of words must precede the division of words into parts of speech, and, generally, the examination of individuals must precede definition and classification.

ORDER, ATTENTION, DISCIPLINE

ORDER is to the life of a school what food is to the life of the body. We take food not for its own sake, but that it may enable the body to perform its functions; and we strive to get and to keep order not for its own sake, but that it may enable the school to perform its functions. It is a condition antecedent to all good work. The teacher, however learned and however skilful, who has not the power of command is but as sounding brass or a tinkling cymbal. Fortunately, that is a power which every person of intelligence who is willing to pay the price may obtain. The price is cultivation of the teacher's own character, and untiring attention to details.

Importance of order

The first, second, third, and final cause of order is the teacher, and his success as a disciplinarian will depend largely on his success in cultivating certain moral qualities in himself. Coleridge names three of these:

Order depends on the teacher

> O'er wayward childhood would'st thou hold firm rule,
> And sun thee in the light of happy faces,
> Love, Hope, and Patience, these must be thy graces,
> And in thine own heart let them first keep school.

The man or woman who does not feel deep and abiding love for children as children, who does not watch with interest the unfolding of their minds, who is not ready to share in their games as well as their tasks, who does not sympathise with the most troublesome, who does not recognise the infinite possibilities of their natures, has no right to be a teacher. An unloving

Essential qualities in the teacher: 1. Love of children

teacher. is a burden to himself and a trial to his pupils. The relation between them is, at best, an armed neutrality ; his attitude is a threat, theirs passive resistance. The obedience rendered to him (if he have the ability to extort any) is unwilling, and secured with a needless expenditure of energy. There may be in the class of the most loving teacher a few children who do not delight to please him ; but in the class of the unloving teacher there will be only a few who do not delight to annoy him. He creates his own difficulties.

If Hope prostrate lie,
Love, too, will sink and die.

2. Hope

Hope, therefore, furnishes the motive for continued exertion. The mistakes and faults which were corrected yesterday recur to-day, and will recur again to-morrow ; faithful labour seems to result in nothing but fatigue and disappointment ; so the teacher is sometimes disposed to give up the unavailing struggle, till the thought that, where he sows in sorrow others may reap in joy, gives him fresh courage, and nerves him for renewed efforts.

3. Patience

Patience is as necessary for the teacher as love and hope, and his profession gives him ample opportunity for the practice of it. Some children are froward, some are spoiled, some are stupid, some are stubborn, many are restless, careless, and inattentive ; but, in spite of every excuse for irritability and anger, he must resolutely determine to keep an even temper. If he cannot rule himself, he certainly will not be able to rule others ; and when his pupils discover that they can ruffle him, his influence is lost for ever.

4. Decision

Another essential quality is decision. The will power is weak in children ; if it is strong in the teacher, he can easily control them. Making up his mind clearly what he wants goes a long way towards getting it. If he has definite purpose, his commands will be definite ; and definite commands are much harder to disobey than the vague

monitions, half request, half exhortation, which one sometimes hears. With decision come firmness, consistency, and promptitude; when it is absent, weakness, vacillation, and hesitation, each fatal to discipline, take its place. Before resolving on a general course of conduct due care and thought must be exercised, but in the daily routine of school work there will be many exigencies calling for instant action. A boy, for instance, makes a mistake which the teacher feels sure is intentional. Shall he ignore it? shall he pretend that it is an honest blunder? shall he risk a struggle with the offender by ordering him to correct it? shall he send him away from the class? or shall he punish him? The answer must be immediate, though it depends on a large number of reasons, and there is no time for deliberation. The experienced teacher seems to do the right thing by instinct, but his instant apprehension of the right thing is really the product of a trained decision of character applying broad principles to a particular case.

Another essential quality is dignity, consistently maintained in school and out. Teachers who are slovenly in their dress; who loll on desks; who at one moment joke with a child as if he were their equal, and the next minute resent his treating them on the same footing; who shout, stamp, and fly into passions; who exhibit petty vanity and petty spite; who frequent unsuitable places and associate with unsuitable companions cannot win the respect of their pupils; and where there is no respect there is no willing obedience. On the other hand, where there is true dignity in a superior, inferiors do not take, do not think of taking, a liberty. Dignity does not mean stiffness or affectation, and it can afford to unbend. The teacher who has it can be familiar with children without tempting them to be familiar with him; can jest without tempting them to jest back; and it will be all the better for him if he can see the humorous side of things.

5. Dignity

Tact is another quality to be cultivated. If difficulties lie in the path of duty we must face them boldly and overcome

them, but by a little management we can avoid many a difficulty without losing our own respect, or that of others. Tact

6. Tact

is to life what oil is to machinery—it destroys friction. A tactless teacher, beginning work with a fresh class, and finding in force rules, customs, or methods which he considers (perhaps rightly considers) to be bad, changes them all violently, with, it may be, expressions of contempt for his predecessor who introduced or tolerated them. He thus rouses the hostility of children and parents, and cripples his own power of doing good. Another teacher, under the same circumstances, introduces changes so gradually that they are not noticed, and often, while carrying out his own fixed purposes, appears to be acting on the suggestions of others. In the treatment of individual pupils, again, the same difference is seen. Something has gone amiss at home or on the way, and a boy comes to school in a bad temper. One teacher sees it, and says, 'So, Master Tom, you are in the sulks to-day, but I will soon take that out of you,' and then, in an imperious tone, gives some command. This is disobeyed, or obeyed with evident reluctance, and a perfectly needless conflict ensues, weakening the teacher's hold over the whole class even if he triumphs, and doubly weakening it if he fails. Another teacher equally sees the bad temper, but affects not to see it. He carefully refrains from singling the boy out, and gives his temper time to cool. Thus the second allows the electricity to dissipate harmlessly which the first brings down in lightning on his own head.

Tact in the treatment of children presupposes a study of their nature. To sit still doing nothing, which is easy to old

7. Study of child-nature

people, is impossible to them. If, therefore, the teacher leaves any minute of their time not filled with useful employment, they will fill it with disorder or with mischief. Again, it is irksome to children to do one thing long, and the wise teacher will anticipate restlessness by variety of occupation. The nature of every individual child should be

studied as well as the nature of children generally. In a school what is sauce for the goose is not sauce for the gander. With one child a look of mild surprise is effectual in repressing misconduct; another may require a sharp reproof. One may be led but not driven; another may need a certain amount of driving. One is excited to diligence by a desire to get to the top of the class; another merely by a desire to get to the end of the lesson and the release from school which follows it. In short, the teacher who wishes to make his labours light to himself and profitable to his pupils will learn their common characteristics and their personal peculiarities, and adapt his methods accordingly.

Order depends on attention to details

The cultivation of essential qualities in himself is only half the price which the teacher must pay for order. The other half is untiring attention to details. Children cannot be quiet or attentive if suffering physical discomfort, if they are kept too long in one position, if they are too hot or too cold, if a glare falls on their eyes or there is not enough light; if the seats are too high or too low, and have no backs or have backs which do not give support where wanted; if two classes are working in one room.

Rooms should be clean and neat

A dirty and disorderly school-room, too, makes dirty and disorderly scholars. The room should be swept and dusted every day and washed frequently; the windows should be cleaned when necessary; hats, caps, cloaks, umbrellas, &c., should be left outside in a cloak-room; easels, blackboards, books, and all materials should have assigned places, and, except when in use, should never be out of them; maps and diagrams [1] should

[1] That is assuming maps and diagrams are hung on the walls. They are the poorest kind of decoration, and the argument that children become

hang straight, with rollers neatly fixed. A basket should be provided for waste paper, and the use of it enforced. The habit which many children have of taking too much ink on their pens and shaking the excess on to the floor should be repressed; the repression will be made easier if the ink-wells are not more than half filled. The carving of names on the desks should also be forbidden, and this will be more easily done if no leisure for it be allowed. On the window-ledges and on brackets there should be boxes or pots of growing flowers and ferns;[1] the children should be encouraged to bring these, and the tending of them should be made a reward of neatness or good conduct. Nothing, in fact, should be omitted that is likely to make the children take a pride in the school-room and feel that it is a semi-sacred place.

The whole routine of the school should be regulated literally by clock-work. Lessons should always begin and cease precisely at the minute set down, and the Time-table should be observed to the smallest particular. All general motions should be regulated by word of command. There should be a settled plan for assembling, dismissing, standing, sitting, changing places and tasks, giving out and collecting books, pencils, &c. Nothing should be haphazard, nothing left to the caprice of the children. If the method be well-considered, and do not err by excess of detail, it both tends to good order and saves time.[2]

Everything should be regulated

as any teacher can prove for himself by turning to the class the back of any map or diagram which has not formed the subject of a lesson, and then asking a few questions about it. Every school ought, of course, to have a good supply of maps and diagrams, but the wall decoration ought to be pictures which are works of art.

[1] To provide these only when an inspector, manager, or other visitor is expected does more harm than good, because it gives children the impression that the teacher is trying to earn credit by false pretences.

[2] The last is a consideration the importance of which cannot be overestimated. If a class of thirty children spends a minute more than is necessary in changing lessons, for instance, half an hour is wasted.

The teacher should exercise constant foresight.[1] If there are not enough reading-books, or if some of them have a missing leaf, the whole class is kept idle while the defect is being remedied, and an idle class soon becomes a disorderly class. Before a writing lesson the teacher should see that every pen is good, and that there is sufficient ink in the wells. Before a drawing lesson he should see that every pencil is sharp, and, generally, before all lessons he should take care that whatever he or his pupils may be likely to want is ready to hand.

The need of foresight

The main principles of order having been stated, some instructions concerning the application of them may be added :—

Instructions

1. Stand (or sit) where you can without difficulty see every child under your care.

1. Position

2. Cultivate quickness of eye. An experienced teacher can instantly detect in the largest class any pupil who is doing what he should not do, or not doing what he should do.

2. Eye

3. Cultivate also quickness of ear. Should there be a whisper while you are writing on the blackboard, you ought to be able to say, if not from whom, from what part of the room, it came. Your pupils should feel that you can see with the back of your head.

3. Ear

4. Check the smallest beginnings of disorder. When the discipline is good there will be no need to scold the culprit. If a look or the lifting of a finger should not suffice, try a question about what has just been said or done.

4. Beginnings of disorder

[1] Foresight is as necessary with regard to lessons as to order. Not only should the course for a term, or session, or year be arranged beforehand, but every separate lesson should be carefully thought out, and all the preparations possible made for it. This will involve time at first, but, if the teacher keeps full notes, he will have to spend only a few minutes

5. Let your commands be clear, decisive, brief, and well considered. With an individual pupil you may put in the form of a request what is in fact a command. You may, for instance, say 'Please to stand,' but with a class you should simply say 'Stand.'

5. Commands should be clear

6. Never repeat a command. If you get into the habit of giving it a second time, your pupils will get into the habit of not obeying it the first time.

6. Never repeated

7. Never let your commands be contradictory or inconsistent.[1]

7. Never contradictory

8. Having given a command, never proceed till all your pupils have obeyed it, or they will soon infer that they need obey only when they please. They must obey when you please.

8. Obeyed

9. Never assume that you will be disobeyed. To say, 'If any boy or girl does not do this I will . . .' is an infallible sign of a weak teacher.

9. Obedience should be assumed

10. Never threaten or promise. If you must do either, do it only after mature thought, and then let no power on earth turn you from your word. It may be folly to bark; it is double folly to allow any one to suppose that your bark is worse than your bite.

10. Threats and promises

11. Never shout. If you habitually speak in low, clear tones you may become emphatic with little exertion, but if you habitually speak in a loud voice you have no reserve.[2] Place in the front of the class any children whose hearing (or sight) is defective.

11. Voice

[1] Jean Paul Richter says that the education of his day was like the harlequin of the Italian comedy, who jumped on the stage with a packet of papers under each arm. He is asked, 'What have you under your right arm?' and answers, 'Commands.' 'And under your left arm?' 'Countermands.'

[2] You will be like the sea captain who regretted that he had got into the habit of always swearing at his men, because he could do nothing more when he was really angry. Richter says that 'the child's ear readily distinguishes a decided from an angry tone.' The 'person's thr[illegible]

12. Never sneer. Children detest sarcasm, and have little skill in it themselves. They are therefore tempted to answer a sneer with insolence, and more than tempted to repay it with hate.

12. Sneers

13. Never push or pull a child to put him in his place or to quicken his movements.[1] Your command will soon cease to secure prompt obedience if you act as if it were not sufficient.

13. 'Hands off'

14. Destroy the roots of disorder. As has already been said, restlessness may be due to the natural need of change, mischief to want of better occupation. This was the reason for Joseph Lancaster's rule, 'Let every child have at all times something to do, and a motive for doing it.' If, when you are showing some interesting object, the children at the back of the class stand that they may the better see it, withdraw the object. The curiosity which made them stand will make them sit as soon as they realise that till they sit there will be nothing to look at.

14. Roots of disorder

15. Remember that quietness and order are not necessarily synonymous. A class of graven images would be very quiet, but it would not do much useful work. Only a very stupid critic will think the hum of industry a sign of weak control, or the stillness of unnatural constraint a sign of discipline.

15. Quietness not necessarily order

16. If you find any two children are disposed to chatter when sitting together, separate them.

16. Chattering

17. 'Always pretend that you have not seen a breach of discipline when you are not quite sure of the offender, or cannot bring a clear charge against him. You have no time for investigations. Wait for another chance.

17. When to be blind

which so many teachers suffer, is caused as much by speaking too loudly as by bad methods of voice production.

[1] 'Forbid seldomer by actions than by words. Do not snatch the knife out of the child's hands, but let him lay it down at your desire. In the first case he obeys the pressure of a foreign power, in the second its guidance.'

A boy never rests upon an unpunished offence. Offence and punishment should be exchanged like shots. No credit: cash.'[1]

18. Drill, over and above its value in developing the body, conduces to good order by accustoming the children to concerted movements and to prompt obedience. Two or three minutes given to physical exercises between lessons will relieve the strain on the muscles, and also act as a safety-valve for superfluous energy.

18. Drill

19. 'The best rule in politics is *Pas trop gouverner*. It is also true in education.'[2]

19. 'Pas trop gouverner'

One great end of order is to secure attention. Intellectual progress is possible only when the mind machinery is working smoothly, and it will hardly work at all except with attention as engine-driver.

Order for the sake of attention

Attention is of two kinds. A flash of lightning, the roar of thunder, the rumbling of a cart, a shower, a rainbow, a blow, a touch, compel us to attend by their own force, and the attention that we give to them is therefore said to be non-voluntary, passive, or instinctive. A boy's consciousness of the fact that there is a Latin grammar open on the desk before him may be non-voluntary; but when a desire for knowledge, a sense of duty, willingness to please his teacher, fear of punishment, or any other motive leads him to concentrate all the powers of his mind on learning to conjugate *amo*, his attention is voluntary, active, or controlled.

Two kinds of attention

In young children the will is weak; hence the inattention to lessons which is sometimes treated as wilfulness is 'in reality just the contrary of will-fulness, being the direct result of the *want* of volitional control over the automatic activity of the brain.'[3] Attention must, therefore, be cultivated, and that it may be cultivated successfully the laws of its operation must be

The first law is interest. If at the end of a crowded street we could stop a dozen men, women, and children, and ask them what they had noticed in coming along it, we should probably get a dozen different answers. One would have noticed the book shops, another the milliners' shops, another the toy shops, another the horses, another the architecture, &c. An artist walking along a country road would notice chiefly the beauty of the landscape, a farmer the quality of the soil and crops, a cyclist the surface and the gradients. In a picture exhibition a frame-maker would notice the frames rather than the pictures ; a sailor after standing on the cliff for an hour could tell the rig of every craft that had passed, while a landsman would have observed only the play of light on the sails. Since, then, we notice most what interests us most, it follows that the teacher who wishes his pupils to be attentive must make his lessons interesting.

Laws of attention: 1. Interest

Another law is the law of contrast and novelty. If a man were sleeping near a railway a passing train would wake him,[1] whereas if he were travelling by the train he could sleep as long as it was in motion, and would only wake when it stopped. Thunder may be unheeded amid the din of the city ; amid the quiet of the fields the noise of hammering a mile away may obtrude itself. The most orderly children listening to the most interesting lesson could not help letting their eyes wander if a mouse ran across the room or a bird flew in at the window. It follows that the teacher should introduce as much novelty as possible into his instruction, should not strain the attention, and should so arrange the Time-table that successive lessons call for the exercise of different powers of the mind.[2]

2. Contrast and novelty

[1] The fact that passing trains do not wake people who live near railways is only an illustration of the law. To such people the noise of passing trains is no novelty.

[2] 'The regulations of the Jesuits' order forbid them to study longer than two hours at a time. But your school regulations command the little ones

While novelty is a powerful stimulus to attention, a certain amount of familiarity is also essential. One who knows nothing of machinery is simply confused by the whir of wheels in a factory; one who knows a little of theoretical mechanics is interested to see the application of principles. A Greek book is, to one who has not mastered the alphabet, utterly devoid of interest, because of meaning. A little knowledge is necessary as a starting-point of interest and attention. The student who can read French or Latin finds much to attract in a passage of Spanish or Italian, because he finds much that he can understand.[1] The practical conclusion from the law of familiarity is that the teacher should proceed from the known to the unknown, employing interest in the known as a motive for exertion.

3. Familiarity

Activity is natural to children. If they have only to listen their attention soon flags, but the consciousness that they are learning to *do* something spurs them to effort. Long explanations should be avoided. A little explanation followed at once by an exercise on it is the right method.

4. Activity

The value of the teacher's sympathy and of the child's love of approbation or desire for knowledge as incentives to attention is too obvious to need more than mention.

5. Other incentives

Miscellaneous hints

Some miscellaneous hints are added :—

1. Good classification is a help to attention. A pupil who is

to study, that is to be attentive, as long as you elders can teach. . . . Novelty is the source of attention in children, but novelty and repetition are antagonistic forces.'—*Richter.*

[1] Joe Gargery in *Great Expectations* says : 'Give me a good book, or a good newspaper, and sit me down before a good fire, and I ask no better. My ! . . . . when you *do* come to a J and a O, and, says you, "Here at last is a J–O, Joe," how interesting reading is.' It was the fact that he knew a part of the alphabet, though only two letters, which made a book

more forward than the majority of the class will be inattentive because the lesson possesses no novelty for him; one who is more backward will be inattentive because he does not understand it.

1. Classification

2. Distractions should be prevented. This is one reason why there ought to be a separate room for every class.

2. Distractions

3. The attitude of the body has an important influence on attention. Children who are allowed to sit or stand indolently will soon begin to attend indolently. The whole class should therefore be made to sit or stand in a uniform alert posture.[1]

3. Attitude

4. If the children are to be interested, the teacher must be interesting.

4. Teacher must be interesting

5. If the children are to be interested, they must understand, and if they are to understand, the teacher must be intelligible. He must both think clearly and express his thoughts in language suited to their capacity.

5. And intelligible

6. Nothing succeeds like success. Remembering that past efforts have overcome past difficulties leads to the putting forth of fresh efforts to overcome fresh difficulties.

6. Success stimulates

7. Lessons should not be too long. The younger the pupils, the sooner is their attention tired.

7. Length of lessons

8. Lessons should be varied, both for the sake of interest and novelty, and of that change of work which is as good as rest.

8. Variety

9. Children should be taught how to attend. 'Sitting over your book and using your mind are not the same. Breeches-wear and brain-wear are not the same, though the same time may be spent.'[2]

9. 'Brain-wear and breeches-wear'

[1] 'I have often observed that on making the looks and gestures of angry, or pleased, or frightened, or daring men I have involuntarily found my mind turned to that passion whose appearance I endeavoured to imitate.'—*Burke.*

[2] Thring.

Discipline is as essential to the growth of character as attention to the growth of intellect. Order which helps attention, is itself helped by discipline. Order and discipline are often spoken of as if they were one, but they are related, not identical.

Discipline and order

Order aims at securing prompt obedience to commands, discipline at making commands unnecessary; order is the result of government, discipline a preparation for self-government; order says to a child 'You must'; discipline teaches him to say 'I will.'

Young children have no moral sense. To them right is what is enjoined, wrong what is forbidden; and they are led

The aim of discipline

to do the one or to refrain from doing the other by love or fear, or the unconscious influence of example and surroundings. Good men and women have within themselves an absolute standard of right and wrong. They do right not because it is enjoined, but because it is right; they refrain from doing wrong not because it is forbidden, but because it is wrong: the abrogation of every law would make no alteration in their conduct. The great end of discipline is to change the non-moral child into the good man or woman. It must gradually make itself unnecessary by teaching its subjects to substitute self-restraint for restraint; by breaking link after link the chain which binds their reason to the reason of others; and by building up

> Self-reverence, self-knowledge, self-control.
> These three alone lead life to sovereign power;
> Yet not for power (power of herself
> Would come uncalled for) but to live by law,
> Acting the law we live by without fear;
> And, because right is right, to follow right
> Were wisdom in the scorn of consequence.

Judicious government being the preparation for self-government, obedience to the rules of the school be-

Importance of rules

comes by an easy transition obedience to the laws

school are therefore of extreme importance, and the conditions which they should fulfil deserve some consideration.

1. They should be general. 'Tell the truth about this' is less effective in the formation of character than 'Tell the truth.' The one is a particular injunction applying to a particular act only; the other is a principle which will apply all through life; the one may result in a single veracious story, the other ought to tend towards veracity.

1. Rules should be general

2. Rules should be intelligible. Commands should not be given unless they are meant to be obeyed; they cannot be obeyed if they are not understood, and the act of disobeying, if repeated often enough, will produce a habit of disobedience, while there can be no repetition if the first act is prevented.

2. Intelligible

3. Rules should be reasonable. This holds good of lessons as well as of conduct. Teachers who would not think of telling children to take six-foot paces set tasks almost as disproportionate to the mental powers as six-foot paces to the physical. The resulting mischief is that a child who finds a fair excuse for disobeying when obedience is impossible, will find some excuse for disobeying when obedience is not impossible.

3. Reasonable

4. Rules should be such as can be enforced. Obedience must follow every command, without compulsion if it may be, with compulsion if need be. Where, therefore, the power of exacting obedience is doubtful the command should not be given.[1]

4. Capable of being enforced

[1] Miss Edgeworth has remarked that prohibitions, *e.g.*, 'Don't touch the lamp,' are more easily enforced than positive requirements, as 'Stand up.' 'Miss Edgeworth is here referring to the earlier control of the child's movements by others. It is obviously easier to use physical force in checking than in producing a movement. . . . At the same time it is to be

5. Rules should be enforced, and enforced with uniform inflexibility. If infringement is sometimes passed over, children will soon fall to calculating whether pleasantness or unpleasantness to themselves is the more likely to follow disobedience.

5. Enforced

6. Rules should be few and well-considered, or children will break some of them through inadvertence and forgetfulness. Time must be given not only for learning the rule, but for learning to obey it.

6. Few

7. The first and last grand rule for the teacher is : *Remember that the end of discipline is the formation of the will.*

7. The teacher's rule

The formation of the will is aided by habit, the almost instinctive application of principles to action. We must know what is right, but that is not enough. Persons who know (and even persons who teach) the Ten Commandments do not always keep them.[1] 'Not by precept though it be daily heard ; not by example unless it be followed ; but only through action, which is often called forth by the relative feeling, can a moral habit be formed. The more frequently the conscious will has brought the conception-process into a certain direction, and led it to a distinct action, the less

Importance of habit

The former implies a check to an impulse actually at work or likely to be so, whereas the latter may be merely suggesting a line of action which the child will be quite ready to adopt. Prohibitions, moreover, have the disadvantage that they are apt to bring before the mind actions of which the child would not otherwise think, and to which, just because they are thus vividly presented, he feels a perverse inclination.'—*Sully.*

It is worthy of note that of the Commandments in the Decalogue eight are prohibitory, and only one entirely positive.

[1] Charles the Great (Charlemagne), in the capitulary which enjoins the foundation of monasterial and cathedral schools, says, '*Quamvis enim melius sit bene facere quam nosse, prius tamen est nosse quam facere*' (Right action is better than knowledge, but in order to do what is right we must know

power will he need to do it again ; the more easily will man pursue the same course in his thoughts and actions.'[1]

> For use can almost change the stamp of nature,
> And either curb the devil, or throw him out
> With wondrous potency.[2]

Herbart[3] compares 'the constancy of our conceptions' to 'the constancy of willing which goes to make up the chief basis' of habit. Intellectual progress would be impossible if we had not the power of storing ideas in the mind and reproducing them unchanged when necessary. Similarly, moral progress, the building up of character, would be impossible if the will did not spontaneously reappear the same when necessary—that is, if we were obliged to carry ourselves back by reflection to our former resolutions. Herbart calls this power of spontaneously reappearing the same 'the memory of the will,' and points out that discipline has so much to do because this power is small in children—because natural constancy of will is not often found in them. 'Discipline must restrain, determine, regulate. Where there is no memory of the will, and its place is filled by caprice, discipline must compel and restrain the pupil, that his will may grow united and harmonious. Discipline must also work determiningly. It must teach the pupil himself to choose, not the teacher in the name of the pupil, for the pupil's is the character to be determined ;'[4] and the fact that his character is largely determined by habits makes the formation of good habits a most serious part of a teacher's duty.

Habit the 'memory of the will'

The secret of the formation of any habit is action. We do not attain to any virtue by passive contemplation or even by

[1] Herbert Spencer.

[2] Shakespeare.

[3] Johann Friedrich Herbart (1776–1841), a German psychologist and professor, who condemned the 'faculty' theory of mind, and originated the 'interest' theory of education.

admiration of it, but by practising it. We do not free ourselves from any vice by thinking how wicked it is, but by resisting the temptation the next time it assails us. Hence Hamlet said to his mother, 'Refrain to-night,' not 'Think about refraining':

Habits are formed by action

> Refrain to-night,
> And that shall lend a kind of easiness
> To the next abstinence, the next more easy.

Applying this general truth to the particular work of the teacher we may say, 'Miss no opportunity of making your pupils practise whatever habit you wish them to form.' In this, as in so many other matters, the first step is the hardest. The act to be performed may be contrary to the pupil's inclination, or it may be difficult. The teacher must therefore supply a motive strong enough to conquer the disinclination, and make the pupil put forth effort enough to overcome the difficulty. And this must be done again and again till disinclination and difficulty have both disappeared, and the 'memory of the will' is sure and prompt.

Application of this truth

There is no habit which requires to be more sedulously cultivated than truthfulness. Truth is to the other virtues what oxygen is to the other gases in the air—it is the life-giving element. 'The first sin on earth—fortunately the devil committed it on the tree of knowledge—was a lie,'[1] and lying has been ever since both the cause and the symptom of other sins. Dishonesty, for instance, is only a lie in action. Between robbing a man of his good name and obbing him of his money the moral difference is small, and true courage cannot exist with falsehood.[2]

Truthfulness

[1] Richter.

[2] 'Anton tells us that *lie*, to tell an untruth, and *lie*, to become recumbent, are from the same root; probably the word has reference to the abject slave who dare raise neither body nor spirit.'—*Richter.*

[Modern authorities do not agree with Anton as to the common origin of the two words *lie*.]

Milton says that 'he who would not be frustrate of his hope to write well hereafter in laudable things ought himself to be a true poem.' Similarly, he who would have a truthful school must himself be truthful. It may be assumed that even the least self-respecting teacher would not expose himself to the scorn of his scholars by telling them what they know to be false; but the teacher who makes a promise which he forgets to fulfil, or a threat which he does not carry out, does enough to destroy the feeling that his word is sacred, and to create a corresponding feeling in his pupils that their words need not be sacred. He does still greater mischief if he sets an example of eye-service or duplicity; if he works harder in the presence than in the absence of an official superior; if he is on the watch for visitors; if the perfection which prevails on inspection days does not prevail on other days.

The teacher must be truthful

The most prolific cause of untruthfulness in children is fear. Having committed a fault they lie in the hope of escaping the punishment. The severer the punishment expected, the greater is the temptation to lie; and it follows that no punishment should be more severe than is absolutely necessary in order to have the desired deterrent or corrective effect. Children will not lie, even in the hope of escaping punishment, unless they think that there is a chance of the lie being successful. They know that 'he who does one fault at first and lies to hide it makes it two,' and that a double offence will bring a double punishment—if detected. Teachers will therefore diminish the temptation to lying in proportion as they increase the probability of its being unsuccessful, and if they keep eyes and ears open, and study individual characters, it will be hard to deceive them.

Untruthfulness caused by fear

Children should never be accused of lying except on evidence which is absolutely conclusive; and then the accusation should be specific ('You have told a lie') not general ('You

at the same time the power of obeying, man feels, a minute after his fault, as free as Socrates ; and the branding mark of his *nature*, not of the *deed*, must seem to him a blameworthy punishment.'[1] Trust begets trustworthiness.[2] On the other hand, a knowledge that we have lost the confidence of those whom we respect begets a desperate feeling that, our character being irretrievably gone, we strive in vain henceforth to recover it.

Children should not be called 'liars'

When the teacher feels sure that some one has committed a fault he should, when examining him, put his questions in a form which does not suggest a false answer. 'If he knows, for instance, that the child has been on the ice contrary to his orders, he may by the first question, which concerns only inconsequent by-circumstances (as how long he has been on the pond, and who was sliding with him), take away from him the wish and the attempt to pay the inquirer with the false silver of a lie, a wish and an attempt to which the simple question whether he had remained in the house would have afforded room and temptation. It is impossible that wickedness and presence of mind can be so great in a child that in this confusing assault he will declare the seeming omniscience of the inquirer to be a lie, by himself giving a bold lying denial of the fact.'[3]

Questions that provoke false answers

The sense of honour being naturally undeveloped in young children, they cannot safely be left to correct their own mistakes in Dictation, Arithmetic, &c., even if they are thought to be sufficiently careful ; but the elder pupils should be made to do this work in order that their sense of honour may be trained by exercise. The teacher should, however, give a careful oversight to the correction while refraining from any appearance of suspicion.

Children correcting their own work

[1] Richter.

[2] In one of the great public schools of England the boys used to say during the reign of a certain master, 'It's no fun to lie to ——; he always believes you.'

[3] Richter.

'Copying' is a form of indirect lying which is very demoralising. It should always be rendered difficult by vigilance and good order, and often rendered impossible by setting neighbouring pupils different exercises. When the children are old enough to understand reason, they should be made to see that copying hurts no one so much as themselves; that it hinders their own progress by leading the teacher to believe that they can do what they cannot do, and that it must make them 'ashamed before their own souls.'[1]

'Copying'

The love of truth should be engendered by the reading of stories about the heroes of history or fiction who had dared to be true under the most trying circumstances. Children strive to emulate the fearless. For this reason commendation of a child who has resisted a strong temptation to falsehood is very effective.

Heroes of the truth

One word of caution may be desirable. When young children say what is not true, we must not infer that they are necessarily lying—that is, deceiving intentionally. 'In the first years our children say no true word and no lying one; they only talk. Their speaking is a loud thinking, but as, often, one half of a thought is Yes and the other No, and they (unlike us) utter both, they appear to lie while they are only speaking to themselves. Furthermore, they enjoy playing with the art of speech new to them; thus they often speak nonsense only to listen to their own knowledge of language.'[2] What they imagine is to them so real that they cannot distinguish between subjective imagination and objective reality. It is a part of their nature to be able to pretend that anything is anything else, and they do not always know when they have crossed the narrow border-line which divides pretending that a thing is what it is not from saying that it is.

'Lying' in young children

[1] 'There is a great difference between the one who is ashamed before his own soul and the one who is only ashamed before his fellow-men.'—*Talmud.*

In the affairs of every-day life punctuality is so sure a sign of method, order, and a sense of the obligation of an engagement, that it rises to the dignity of a virtue, and the habit should therefore be formed in school. Here, again, the teacher must set a good example, by always being punctual himself, and by observing the Time-table.

Punctuality

Lateness is often the fault of the home, and then it is both unjust and useless to visit the sins of the parents upon the children. The teacher should see the parents and try to convince them how much the children themselves lose by unpunctuality. A quarter of an hour's lateness every session is equal to losing a session once a week, or more than a month in the year.

Lateness due to parents

When the lateness is the child's own fault, punishment should always follow, and the natural punishment is detention.

Punishment

prevention is better than cure, school should be made attractive, and the first part of every session should, if possible, be made specially attractive. It is well, also, to awaken emulation between the pupils of a class, and it is still better to awaken emulation between different classes. Children who are late will then be urged by their own fellows to come early, and a public opinion unfavourable to lateness will be created. In some schools the most punctual class is allowed to hold a challenge banner, till wrested from it by a more punctual. Extra playtime is also sometimes given as a reward. Prizes for regularity and punctuality are less open to objection than most other prizes.

Prevention

The registers should record lateness. Children are sometimes astonished and shamed into effort when the large number of times they have been late during a given period is pointed out to them.

Registers

Cleanliness is another habit which must be formed. 'Moral

education begins in making the creature to be educated clean and obedient. This must be done thoroughly and at any cost, and with any kind of compulsion rendered neces-

Cleanliness

sary by the nature of the animal, be it dog, child, or man.'[1] 'Dirt is generally accompanied by an inclination towards crime. Cleanliness a fancy for order and regularity in general, which education must develop by forming habits of punctuality and neatness.'[2] When the children come from good homes, the duty of forming the habit of cleanliness may be safely left to the mother. In other cases much depends on the teacher. Children will not be tidy in an untidy schoolroom, and they will not attend to their personal appearance if the teacher takes no notice of it. At the beginning of every session, therefore, hands, faces, &c., should be examined; a word of commendation should be given publicly to any one who is particularly neat, and a word of reproof should be given (privately at first) to any one who is slovenly. It is a good plan to have a mirror, and to make untidy children look at selves in it.

The ends of discipline having been explained, the question remains to be considered how children can be made to do what they must do if these ends are to be attained.

Motives

The motives to be appealed to are (1) Emulation; (2) Love of praise and dislike of blame; (3) Hope of reward and fear of punishment; (4) Desire to please parents and teachers; (5) The wish to do what is right—the sense of duty.

Emulation at every period of life is one of the most powerful incentives to exertion. It is especially powerful with children, because they are not given, as adults are,

1. Emulation

to calculating whether success is worth competing for. With children 'Let me see who will be first' is a far keener spur than 'I will thrash the last.' The effort it evokes is eager, not reluctant, and the standard it sets up is higher. To

[1] Ruskin.

[2] Herbert Spencer.

be first means to be before all rivals ; not to be last may mean being before only one of them. Emulation, then, being so mighty a motive, its aid must be sought in every department of education, physical, mental, and moral ; and it should be fostered by encouragement, by marks, by place-taking, by praise, by badges of honour—in short, by every harmless device of which the teacher can think or hear.

Disadvantages of emulation

When emulation is a striving to excel, it is an unmixed virtue, but when it is a striving to excel others, it may have in it some alloy ; it may engender in the victor vanity and self-conceit, in the vanquished jealousy and envy, and in both contention and ill-will. Consequently several of the older writers in France and one or two in England deprecated its use, but its advantages are so great, and its disadvantages so small, and so easily made smaller, that the teacher who refuses to employ it would show more fastidiousness than sense. The disadvantages may be obviated by precluding the possibility of any suspicion of favouritism ; by having frequent competitions of many kinds, so that the child who fails to do well in one thing or at one time may hope to do well in another thing or at another time ; by making honour the reward of success, so that cupidity is not roused ; by praising honest effort which has fallen short of success ; and by pointing out that while superior abilities are a serious responsibility, their owner has no more reason for being vain of them than he would have of his stature or of the colour of his hair.

2. Praise and blame

The innate self-esteem which makes us like praise and dislike blame is a good quality if it impels us to do what is praiseworthy and to avoid doing what is blame-worthy, but it is an evil quality if it renders us morbidly anxious to secure the approval of others, however small its value. The universality of the feeling causes it to be always available for the teacher's purposes. 'To give joy by deserved approbation is the fine art of discipline. There is likewise a

sad art, that of unerringly wounding the spirit of a child, which art, however, must not be despised. It is often indispensable when simple speech falls on deaf ears.'[1] Praise and blame are alike ineffectual when coming from a teacher who is not respected, and they do more harm than good if their justice is not apparent both to the subject of them and to his classmates. Praise should be employed sparingly, lest the appetite for it grow with what it feeds on, and it should never be bestowed for the simple discharge of duty, but rather reserved for extraordinary effort. Similarly, blame should be employed sparingly, lest its edge be blunted, and it should be given for want of effort not for want of ability, for intentional not for involuntary faults. It is better to be liberal with praise than with blame, and a whole class may sometimes be praised, though to blame a whole class would generally be unwise. If the teacher says to the class 'You have done your work exceedingly well,' he will please those who deserve the commendation, and he will make the rest try to deserve it; but if he says 'You are the laziest set of children it has ever been my misfortune to have to do with,' those who are not lazy will resent the false charge, while those who are will take comfort from the fact that they are no worse than others.

'Discipline is a continuous treatment which only now and then, for the sake of emphasis, resorts to rewards and punishments.'[1] It resorts to rewards for special merit in order to establish an association between good conduct and pleasure. It resorts to punishments for wilful wrong-doing in order to establish an association between bad conduct and pain—the stimulating or deterring effect depending on the constancy of the association.

3. Rewards and punishments

The most common and most useful forms of rewards—praise, the highest places in the class, badges of honour, and other distinctions possessing no money value—have been

[1] Herbart.

already mentioned. Whether prizes should be given is a much debated question. They have a tendency to foster cupidity, ill-will, jealousy, and envy, and to destroy the feeling that virtue is its own reward, that right should be done because it is right, not because it is profitable. Furthermore, when given for intellectual success, they often go to the fortunate rather than the deserving, to the clever rather than the industrious. A prize for the best looks would be as just as a prize for the best brains. The teacher who does give prizes should try to make the recipients look upon them as marks of his approbation, not of his kindness, and the basis of award should be good conduct, regularity, punctuality, or other excellence which every pupil has an equal chance of attaining. The effect is enhanced when the prizes are distributed publicly and with some ceremony.

Prizes

In school, the first purpose of punishment is to prevent the offender from repeating the offence; the second, to prevent others from copying it. For both purposes it is essential that the punishment be inevitable, if the necessary association between wrong-doing and pain is to be formed. A mild punishment, which is certain, is far more effectual than a severe one which is uncertain. 'On this turns very much the badness or goodness of a government as regards the treatment of its criminals. An uncertain government can never be sufficiently severe, and it will proceed from cruelty to cruelty, and nevertheless fail to terrify. Such is human nature; let there be the least chance of escape, and ninety-nine men out of a hundred will run the risk, however great, for a very incommensurate temptation. An army is an example of this. A really considerable number of men are certain to be killed in a campaign, but, because it is uncertain who will be the victims, the whole number are ready to run the risk at a very low premium. Yet horrible pain, hardship, and death are the deterrent powers, and next to nothing the tempta-

Punishment should be a. Inevitable

destruction of the men engaged, they would not fight? . . . A good master does not require to be severe because he is certain.'[1]

b. Swift

The punishment must also be swift. 'We need not look far for an illustration; it is certain that all men die, but yet, because the time of death is uncertain, and may be far off, this certainty has not the slightest effect on the lives of most men.'[1]

c. Deserved

The punishment must, of course, be deserved, and whether any act deserves punishment depends on the intention of the doer. The butcher who kills a hundred sheep in the way of business is reckoned innocent; if he were to cut one needlessly he would be reckoned cruel. It is not enough, therefore, to ascertain beyond a doubt that a pupil has come late, has blotted his book, has broken a window, or said what is not true; one must also ascertain whether he could help being late, or blotting his book, or breaking the window, and whether he knew that what he said was not true.

d. May be variable

Every punishment must be deserved, but even-handed justice does not require that every offender should receive the same punishment for the same offence (though it is perhaps impossible to make a distinction when two offenders are being punished at the same time for the same offence). The primary end of punishment is to prevent a repetition of the fault, and a frown may be as effective in securing this end with one child as a birching with another. Where there is no probability of attaining the desired end, punishment is useless, so far as the offender is concerned—where, for instance, the will is so weak that punishment cannot supply sufficient moral force to counteract the natural inclination to wrong-doing. 'Thus, to punish a child overpowered by grief for not instantly controlling its feelings is barbarous.'[2]

Offence and punishment are not a debtor and creditor account, one balancing the other. The offence is balanced not by the punishment but by amendment. Till the teacher sees some sign of that he will not restore the pupil to favour.

Routine punishments

It is folly 'to legalise insubordination by having a set of small routine punishments and imposing them regularly. This makes a regular crop of the fault; and the fault becomes an established institution, and what began as a bit of carelessness ends by being a tolerated crime. Little breaches of order ought to be met by the personal authority of the teacher's word and influence. If that is not enough, they should be promptly stamped out by real severity.' [1]

Punishments available

The punishments available are reproof, disgrace (such as standing apart from the class), detention (with or without tasks), and in some cases bodily chastisement.

4. Desire to please

If children do right only from emulation, love of praise, dislike of blame, hope of reward, or fear of punishment, something is accomplished. The action necessary for the formation of a good habit has been induced, though the motive for the action may not be of the highest. More is accomplished when children do right to please their parents and teachers. The desire to gratify others rather than self must not be looked for too early; it will be vain to look for it in some people at any time. It must not be looked for either if parents and teachers have not earned love and respect, and if they do not show that they are gratified when they see honest striving for excellence.

'Rule by love'

Weak parents and Sunday school teachers who are not able to rule, and amiable theorists who have never tried to rule, say that children should be ruled by love and not by fear. Discipline rests on authority and love—'authority which depends on superiority of mind, love which

never degenerates into undue indulgence. . . . Love is only of value when combined with the necessary severity.'[1] We consider the coachman kind and skilful who can manage his horses without using the whip, but we should consider him foolish if he refused to use the whip when the horses could not be made to move without it. Love is a higher motive than fear, but when it is too weak to affect conduct it must be reinforced by fear. Good children may do right to please a good teacher, but the best children ought to be made afraid of displeasing the best teacher.

5. Sense of duty

The highest motive of conduct is the sense of duty, and the work of discipline is done when it has created this. Laws are not needed for a man who is a law unto himself. Punishments have no terror and rewards no charm for him,—

> His high endeavours are an inward light
> That makes the path before him always bright.

Before we can do right we must learn to recognise it, and then

> We needs must love the highest when we see it,

and, loving it, will choose it, cleave unto it. Preaching is wasted on children (it is sometimes wasted on their elders), and direct moral instruction is apt to tire ; but instruction by example is very powerful, whether it be the living example of parents and teachers or the models derived from history and fiction. Admiration of those who have done their duty leads unconsciously to imitation, and the 'immortal dead' live again

> In pulses stirred to generosity,
> In deeds of daring rectitude, in scorn
> For miserable aims that end with self.

[1] Herbart.

ORAL QUESTIONING[1]

A BAD questioner is a bad teacher. He may be a good lecturer, but the lecture differs from the lesson. Both the lecturer and the teacher strive to secure attention by the presentation of interesting facts or the interesting presentation of facts; but the lecturer looks upon his audience as a whole, while the teacher looks upon his class as units. The lecturer does not undertake to make all his hearers understand or to make any of them remember, but the teacher considers it to be his duty to make each pupil both understand and remember. The lecturer asks no questions; but if the teacher copies his example too closely, he succeeds only in giving a lecture when he meant to give a lesson. 'The teacher's subject . . . is not books but mind. On the other hand, the lecturer's subject in the first instance is not mind but books. This distinction is vital, and the most important results follow. . . . Broad is the dyke and deep that cuts across between the teacher and the lecturer, dividing them by a bridgeless space. They stand on the same level; at a little distance they appear in the same field; to the ordinary eye they are engaged in the same work, with the same surroundings and the same object. But they are divided for ever in theory and in practice.'[2]

Teaching and lecturing

The teacher asks questions:

1. To show some one else what his pupils know.
2. To find out for himself what they know (or do not know).

Aims of questioning

[1] Some parts of this chapter are taken, without much alteration, from

3. To ascertain whether they are following him.
4. To direct and encourage thought.
5. To recapitulate what has been taught.
6. To test how far what was intended to be taught has been learned.
7. To awaken curiosity.
8. To check inattention.
9. To repress self-conceit.

1. To display knowledge

1. The teacher who is required to question his pupils in order to show an official superior or visitor what they know of a given subject sometimes fails to do himself justice[1]. Being more in the habit of questioning in order to discover, for his own purposes, what they do not know, he insensibly loses sight of the end that he should have kept in view throughout; selecting, as usual, the most difficult parts of the subject, and giving, as usual, most attention to the backward scholars, he exposes ignorance when his business was to display knowledge. If he has taught with any success, he ought to be able to question for half an hour without getting any bad answers.

2. To discover knowledge

2. Before beginning a new lesson the teacher must find out what the children already know, so that he may avoid waste of time in trying to teach what has been learned, and may ascertain the foundation on which he can build.

3. To test mental activity

3. The teacher must not proceed faster than the pupils. As we can, by lifting what covers the glass of a hive, see the bees at work, so we can, by questioning, see the mind at work.

[1] A horse dealer's boy, entering the yard one day, found a strange horse there and his father in conversation with a strange gentleman. The father said, 'Trot that horse up and down.' The boy mounted at once, but, having mounted, he appeared to hesitate. At last he bent over and asked his father, 'Am I to ride to sell or to buy?' The boy would have shown off the horse's good qualities if it were for sale, and its bad qualities if it

4. It is important that children should be made to remember, more important that they should be made to understand, and most important that they should be made to think.

4. To direct thought

The second includes the first, because the better they understand a thing the easier will they remember it ; and the third includes the first and the second, because if, with or without guidance, they think a thing out for themselves, they will both remember and understand it. It may be useful to remember such simple formulæ as $s = \frac{1}{2}ft^2$, $sin^2 A + cos^2 A = 1$, $(a + b)^2 = a^2 + 2ab + b^2$, *Barbara*, *Celarent*, *Darii*, *Ferioque prioris*, &c. The better a student understands what they mean and how they are applied, the more likely is he to remember them ; he is certain to remember and understand them if he can go through the processes by which they are arrived at. The opportunities which different subjects of study afford for the cultivation of the thinking powers vary greatly ; the degrees to which different teachers avail themselves of those opportunities also vary greatly ; and it may be safely stated that that subject possesses the highest educative value which affords most opportunities for quickening thought, and that that teacher is the best educator who most fully avails himself of the opportunities afforded.

5. The time of teachers and pupils is wasted unless what is taught is remembered. Impressions are deepened by repetition,

5. To deepen impressions

but when statements are repeated in their original form, they have lost their novelty ; they no longer excite curiosity, and attention flags. When, however, they are repeated in the form of questions, they deepen the impression, and also show where the teaching has not been quite effective. Recapitulation should come :

Recapitulation

a. Immediately after the enunciation and explanation of fundamental principles, because they must be mastered before they can be applied.

b. At every natural break in the lesson.

6. The final recapitulation should both deepen the impressions that have been made, and test whether what was intended to be taught has been thoroughly learned.

6. To test success

7. A skilful question serves to awaken curiosity. It may do this by calling attention to one of the most striking facts to be presented. Before beginning a lesson on Oxygen, for instance, the teacher might ask, 'Have you seen wood burning?' The children would all answer 'Yes.' He might then ask, 'And have you seen iron burning?' The children would all answer 'No.' And he would add, 'By-and-by you shall see iron burning.' Similarly, before beginning a lesson on the pressure of the atmosphere, he might show a can with a number of small holes in the bottom, and ask, 'What would water do if I were to put it in this can?' The children would answer, 'Run out again.' He would then ask, 'And how could I prevent its running out?' A number of answers would probably be given, and the teacher, without rejecting or accepting any of them, would add, 'Well, we shall see.' In both cases the keenest curiosity would be excited, and there would be no danger of inattention.

7. To awaken curiosity

8. A teacher sometimes asks questions to check inattention. When children allow their minds to wander, nothing so readily recalls them to the business in hand as a well-aimed question. If the pupil fails to answer a question on what has just been said, it is impossible for him to deny his inattention.

8. To check inattention

9. In nearly every class there are a few children who have too high an opinion of their attainments, and who, believing that the teacher has nothing new to tell them, are little disposed to listen. A few searching questions will, without destroying their self-respect and self-confidence, convince them that they have still much to learn. This was the method of Socrates.[1]

9. To repress conceit

Rules for questioning

Whatever may be the purpose for which questions are asked, certain general rules apply to them.

1. They should be clearly and concisely worded. Before beginning to speak the teacher should form a perfectly definite idea of what he wants to ask, and then ask it in such a way that the pupils shall also form a perfectly definite idea of it. How could children be expected to follow such a question as this, given in introducing a lesson on the frog?—'If any of you boys were to go into the country in the springtime in the commencement of the year, and you go near a stream in the country, in some parts you will almost be sure to see a lot of them—little things jumping about and in the grass. What would they be?'

1. Should be well-worded

2. It is not enough that questions be neat; they must also be couched in language within the comprehension of the pupils. Only a long experience of children enables one to realise how narrow are the limits of their vocabulary. The limits vary, of course, with the character of the homes; but young children, even when coming from cultured homes, have not a large stock of words. It has been estimated that a well-read man knows the meanings of from 20,000 to 25,000 words, and that an illiterate man does not know the meanings of more than a thousand. Whether these numbers be accurate or not, it is certain that the children have a smaller vocabulary than the parents. Simplicity of language is therefore essential in the framing of questions (as in every other department of instruction). 'What is the effect on respiration of an excess of carbon-dioxide in the atmosphere?' is a concise question, is perfectly clear to those who understand it, but to young children it would be just as clear if asked in Dutch.

2. Should be comprehensible

3. When the pupils are being tested in a lesson which they have learned out of a book, or in a lesson which the teacher has taken out of a book, the questions should not be in the words of the book. If they are, the answers will also probably

be in the words of the book, and there is no certainty that the words of either questions or answers are understood. And even if they are understood, there is not the mental activity and interchange of thought that there would be if teachers and pupils were conveying their own ideas in their own language; in this as in other cases the book is a barrier between mind and mind.

3. Should not be in the words of a book

4. Questions should not be begun in the affirmative form. 'Needles are made of—what?' 'Tea is grown—where?' 'America was discovered—when?' 'Cotton will not grow in England—why?' 'A butterfly has how many legs?' are all bad types. Besides being clumsy, they show that the teacher had not thought out the question before beginning it.

4. Should be neat

5. Questions should not be weighted with superfluous ejaculations, such as 'Hands up!' 'Now, look sharp!' 'Let me see who can answer this time,' 'Don't go to sleep,' &c.

5. Should have no superfluous words

6. Questions should be definite enough to admit of only one correct answer. 'Why is this lamp burning?' 'What do we always find in the school-room in the day time?' 'What happened to Napoleon after the battle of Waterloo?' are types of questions likely to lead to much waste of time, because the teacher may get a hundred correct answers before getting the one that he wants.

6. Should be definite

7. It follows that questions which admit of only two correct answers should not be asked. To the question, 'Is this metal hard or soft?' there being only two possible answers, one is as likely to be correct as the other; hence there is little incentive for children to think, when the probability is so small of their being wrong if they do not think, and when, the wrong answer having

7. Should not admit of two answers

which it is asked often suggests the answer. 'Is not this metal hard?'[1] practically admits of but one reply, and therefore appears to follow the preceding rule. Nevertheless it is bad, because it can be answered correctly without consideration by the most inattentive pupil.

'Yes' and 'No' questions

Questions involving 'Yes' and 'No' are often objectionable, but by no means deserve the wholesale condemnation sometimes meted out to them. They may be asked, for instance :

a. To secure admissions as the starting point of a process of eliciting, as

i. 'Have you ever seen a dog chase a cat?'
'Where did the cat go to be out of the dog's reach?' [Up a tree.]
'Why did not the dog follow the cat?'
'Have you ever seen a cat catch a mouse?'
'With what did she catch it?'
'Have you ever seen a dog catch a rat?'
'With what did he catch it?'
'Why then does the cat need claws sharper and more curved than the dog's?'

ii. 'Do we feel any pain when we cut our nails?'
'Or when our hair is cut?'
'Or when we cut our fingers?'

---

[1] Sainte-Claire Deville, the famous chemist, had to be declined by the authorities at the Sorbonne as an examiner because he used to answer his questions himself.

'How do you prepare oxygen?' he would ask; 'by heating chlorate of potash, don't you?'

'Yes, sir.'

'You place the chlorate of potash in a thin glass flask, don't you?'

'Yes, sir.'

'Now a small quantity of manganese dioxide mixed with the chlorate of potash enables you to obtain the oxygen at a much lower temperature, does it not?'

'Yes, sir.'

'Very good—now another question.'

And so forth.— *Max O'Rell.*

'By means of what do we feel?'
'Why then do we feel when we cut our fingers?'
'And why do we not feel when we cut our nails or when our hair is cut?'

b. To excite curiosity and set the children thinking. A teacher introducing a lesson on the method of supplying water to towns might begin by asking, 'Have you ever seen water run up hill?' 'Do you think water can be made to run up hill?' Then, without accepting any answer, he would say, 'I will ask this question again by and by.'

c. When the answer cannot be given without real thought. To discourage guessing, the 'Yes' or 'No' should be immediately followed by a 'Why' addressed to the child who gave it.

Guessing is encouraged not only by questions which admit of only two answers, but by such questions as 'What do you suppose the size of the cotton plant is?' 'Who think it is six feet high?'

8. No question should be asked which the child cannot reasonably be expected to answer, unless it be to rouse attention at the beginning of a lesson that will itself supply the answer. A question which is too difficult leads some children to reply at random, and others to give up in despair all attempts to reply.[1]

8. Should be reasonable

9. The question should not call for too long an answer. A brief question like 'What were the causes of the Reformation?' may call for a volume instead of a sentence or two.

9. Should not require a long answer

10. A question should not, as a rule, be asked on the substance of a statement immediately after the statement has

[1] Krusi, a disciple of Pestalozzi, was one day mentioning before him the advantages of the interrogatory method, and justified his opinion by the example of Socrates. Pestalozzi replied, 'Socrates questioned only people who had abundant means of answering.' . . . After a pause he added, 'Did you ever see an eagle steal birds from a nest where the eggs were not yet hatched?'

been made. If the children, told that 'bricks are made of clay,' are at once asked, 'What are bricks made of?' they can give the right reply without thought, and a question requiring no thought stands self-condemned. A question may be asked immediately after a statement if some one has to be convicted of inattention, or if the subject is so difficult that the teacher must make sure at every step that he is being followed.

10. Should not follow statement

11. Questions should be relevant. Teaching that aims at nothing is likely to hit it. Every question, therefore, should have a distinct purpose, and when several questions are asked in succession they should form a chain. This is not essential when the questions are intended to test the knowledge; then the teacher may wish to 'sample' different parts of the subject quickly, rather than to examine one part in detail, and it is desirable that the children should not see the link connecting successive questions in the teacher's mind.

11. Should be relevant

12. The questions should be varied in form. In teaching and revising a lesson it is often necessary to ask about the same fact two or three times, and the asking becomes tedious if always in the same words. Such a simple statement as 'Cæsar defeated Pompey' may be made the basis of four questions: 'Who defeated Pompey?' 'By whom was Pompey defeated?' 'Whom did Cæsar defeat?' and 'Who was defeated by Cæsar?'

12. Should be varied in form

13. The questions should be asked in a pleasing manner. The teacher does not stand to his class in the relation of a counsel cross-examining a hostile witness.

13. Pleasing manner

14. The questions should be well distributed. Neither the bright nor the dull pupils, neither those nearest the teacher nor those most remote, should receive an undue proportion.

14. Distributed

15. Questions should be asked in quiet, distinct tones which every child who listens can hear, and then should not be repeated. Repetition on the part of the teacher causes inattention on the part of the pupil.

15. Not repeated

16. The child who has to answer should not be indicated till all have had time to think. To name the child first and then ask the question is almost to invite the remainder to be inattentive. The same remark applies to the questioning of the pupils in rotation.

16. Children should not know who is to answer

The ellipsis as a form of question requires careful treatment. There ought to be but one way of filling up the blank correctly, and that way ought not to be obvious. 'Italy is famous for . . .,' and 'The motion of the earth on its axis causes day and . . .,' are both bad types, the first because the most thoughtful pupil might feel some doubt about the word desired, and the second because the most thoughtless could feel no doubt whatever.

Ellipsis

Answering a direct question is harder than filling up a blank. In the first case there must be knowledge and the power of expressing it, in the second there need be only knowledge. The ellipsis, therefore, should be chiefly employed with young children, who find a difficulty in putting what they know into words. With older children the simultaneous filling in of ellipses is a useful device for reviving attention.

The chief points which the teacher should bear in mind when asking questions having been mentioned, some hints are added as to what he should do when he has obtained (or failed to obtain) an answer.

Answers

1. Answers that are too brief should never be accepted, even though correct in all but form. To accept 'liquid' as an answer to the question, 'What happened to the wax when I held it above the flame?' or 'Always'

1. In sentences

as an answer to the question, 'What is the meaning of *evergreen?*' is to countenance—nay, more, to promote—slovenly work.

In many good schools it is the custom to insist on a complete sentence in all replies. To allow no exception to this rule savours somewhat of pedantry. The advantage of requiring complete sentences in answer to such questions as 'What was the date of the battle of Sedan?' 'Who commanded the Germans at that battle?' is not very apparent, and the disadvantage of requiring them during rapid revision is obvious. Still, applied with discretion, the rule is admirable. Answers in complete sentences show whether the knowledge of the children is definite, cultivate clearness of thought, and are a valuable preparation for written composition.

2. An ungrammatical answer should never be accepted. Correctness of speech is much more a matter of habit than of study. Every opportunity for the formation of a good habit should therefore be seized, and an ungrammatical answer is perhaps the opportunity which occurs most often. Such an answer as 'They was too old' being given, the teacher might say it was right in fact but wrong in form. The child who gave it would then perhaps be able to detect the error; if not, the teacher might proceed, 'You said, "They *was* too old;" what ought you to have said?' There would have been no mention of Grammar, and yet a useful little lesson in Grammar would have been given, for 'a child shall take more profit of two faults gently warned of than of four things rightly hit.'[1] The teacher could make the older pupils see why the wording of an answer was wrong, but he should not be tempted into digressions. He should make a note of the error, and bring it up in the course of the next lesson in Grammar or Composition.

2. Ungrammatical

3. The answer should be strictly relevant. It should cover

[1] Roger Ascham.

the question, the whole question, and nothing but the question. 'The place where a battle was fought in 1704' is no answer to the question, 'Where is Blenheim?' Yet it is a type of answers constantly recurring, especially in examinations. The candidate cannot, when asked, explain the relationship between Queen Elizabeth and Mary Queen of Scots, but he happens to have read Froude's description of the last scene in Fotheringay Castle, and so he presents what he can remember of that to the examiner. To a child who persists in the fault the teacher may rightly assume the attitude of a cross-examining counsel.

3. Relevant

4. Every wrong answer should be corrected. If it is a name, date, or any other matter of memory, it will be enough for the child who made the mistake to be put right by another child, or, in case of need, by the teacher. If the wrong answer is the result of wrong reasoning, the nature of the fallacy should be made clear.

4. Wrong answers

5. It is sometimes well, when no one can answer a question, for the teacher, instead of answering it himself, to ask a series of other questions leading up to the answer, and then repeat the original question. If the children, for instance, were unable to say why cart wheels are greased, the teacher might ask :

5. Right answer not to be always told

'Have you ever rubbed a brass button on the desk?'
'How did the button feel after being rubbed?'
'What made it feel hot?'
'Have savages any matches?'
'How then do they get fire?'
'What causes the wheels of trains moving rapidly to take fire sometimes?'
'How can the friction be prevented?'
'And now, why are cart wheels greased?'

6. General failure on the part of a class to answer question after question shows either bad teaching or bad discipline. If the children cannot answer, the teaching is at fault; if they

will not take the trouble, the discipline. In neither case should wrong answers be laughed at; if they are the result of honest mistakes they should be corrected—the liability to be laughed at discourages effort; if they are the result of laziness or culpable carelessness, they should be dealt with accordingly. They are no laughing matter then.

6. General failure to answer

7. When the questioning is individual, no one but the child named or pointed to should be allowed to answer. Otherwise the clever and eager children will answer, while the remainder, who most need the teacher's attention, will get none of it. The same undesirable effect is produced if most of the questions are addressed to the pupils who appear to be able to answer.

7. Individual answering

8. Simultaneous answering may, with advantage, be required occasionally. It adds briskness to the lesson, enables diffident children to join in it without rendering themselves conspicuous, and gives all an equal share in the work. But it is apt to deceive the teacher into a belief that all know what only a few really know. All may do the speaking when only a few leaders are doing the thinking. It should, therefore, never be employed for many minutes at a time, and should always be supplemented by individual questioning. If answering is simultaneous, it is doubly necessary that the question should admit of but one reply; when several replies are possible, there is the confusing clash of words amid which nothing can be made out.

8. Simultaneous answering

9. Children should be encouraged, when there is any part of a lesson which they do not understand, to ask for an explanation, but the teacher must be careful to distinguish between a genuine desire for knowledge, and forwardness, vanity, or the wish to throw him off the track.

9. Children's questions

Jacotot, who maintained that the teacher should tell nothing,

would be surprised could he see how many teachers of the present day act as if it were their duty to tell everything. He maintained half the truth ; they practise the other half. He forgot that we have to inform as well as educate ; they forget that we have to educate as well as inform. If children acquire only such knowledge as they can discover or be made to discover for themselves, they must remain ignorant of very many things that it is necessary or useful for them to know ; and they cannot enter into possession of the rich heritage bequeathed to them by the past, because, if it is wrong for them to learn from the teacher, it must also be wrong for them to learn from books. On the other hand, telling children too much allows their faculties to lie fallow and their 'capability and godlike reason to fust in them unused.

Telling and eliciting

Jacotot's precept, before it can command universal acceptance, must be modified. A teacher should tell his pupils nothing that he can make them find out for themselves in school, without extravagant expenditure of time. Many things —all historical and most geographical facts, for instance—they must be told or must learn from books, which is only another form of telling ; still, there is no doubt that children are often told much that they ought not to be. They are exhorted to open their mouths and shut their eyes and see what good things the heavens will send them, instead of being made to earn the good things by their own exertions. It cannot be too often repeated that the human mind is not a chest to be crammed, but a living organ to be developed by activity.

Needless telling

The innumerable illustrations that might be given of needless telling divide themselves into two classes—telling what children could find out by the exercise of their own senses, and what they could find out by the exercise of their own reasoning powers. A teacher giving a lesson on tobacco will tell his pupils that snuff is a fine brown

on) ; or, giving a lesson on a coin, he will first tell them that it is composed of certain metals, and then that those metals are melted and mixed, when he could have made them infer the second fact from the first.

A whole train of thought may sometimes be suggested by questions. A good deal of the structure of the mole might, for instance, be elicited in the following manner :—

Examples of eliciting

'Where do worms live?'

'Do you know the name of any animal that feeds on worms?' [It may be necessary to inform the children that the animal in the teacher's mind is the mole.]

'Have you ever noticed little heaps of earth in the meadows?'

'What are these heaps called?'

'Why?'

'And why does the mole live underground?'

'If we had to dig what tools should we use?'

'And if we had to dig as well as we could without tools what should we use?'

'What does the mole use?'

'And its paws will be shaped very much like . . .' [Here the paws should be shown.]

'Would the fore-paws or the hind-paws be most used in digging?'

'Why?'

'Which therefore should be shaped most like hands?' [Show.]

'Have you ever seen a pig dig?'

'What did it use?' [As a piece of incidental information, town children might be told that the farmer prevents the digging by putting a ring in the pig's snout.]

'What sort of snout must the pig have?'

'And if the mole uses its snout, what kind of snout must it have?' [Show.]

By a similar process of questioning the children can be made to see the reason for the shortness of the legs, the thickness of the fur, and the absence (or apparent absence) of eyes.

So with the swallow. Starting from the fact that it lives on flying insects the teacher can elicit—

That it comes to us at the beginning and leaves us at the end of summer;
That it must be able to fly very quickly;
That it must be shaped like a racing boat;
That it must have very long wings and tail; and
That it does not need long legs or strong feet.

Similarly, the food of cows and horses can be deduced from their teeth, the digestive organs of a hen from its want of teeth, the teeth of a mouse from the fact that it can gnaw through boards, the speed of a greyhound from the animal's broad chest and long sinewy limbs, the aquatic habits of a duck from its webbed feet; from the position of the mountains of the United States why the rivers are found where they are, why certain slopes are well watered, and why the great plateau suffers from lack of rain, &c. The advantage of the process, as has already been stated, is that it makes children remember, understand, and think—it makes them remember and understand by making them think.

What cannot be elicited

Experienced teachers insist (and rightly insist) so much on the importance of eliciting, that inexperienced teachers sometimes commit the mistake of trying to elicit what cannot be elicited. Eliciting is the art of asking questions leading up to inferences, but the name of a person or place, the date of an event, and many other classes of facts cannot be inferred, and therefore cannot be elicited. The efforts to elicit them which one sometimes hears are directed not to making children think out the fact—which is impossible—but to making them give a certain word. An infant school teacher points to a letter and asks what it is. There being no answer she proceeds, 'What makes honey?' The child replies, 'A bee.' 'Yes,' says teacher, 'and this is *B*.' This is counterfeit eliciting.[1]

[1] The infant school teacher deserved her fate, who, trying by the same process of counterfeit eliciting to get out the name of the letter *I*, asked,

APPENDIX

THE SOCRATIC METHOD

SOCRATES did not attempt any direct teaching: his method was to question people either to refute their errors or to convince them of their ignorance. His attitude was, 'I am wiser than this man; neither of us probably knows anything that is really good, but he thinks that he has knowledge when he has not, while I, having no knowledge, do not think that I have. I seem at any rate to be a little wiser than he is on that point; I do not think that I know what I do not know.'

As an example of the method of Socrates a summary of the dialogue between him and Euthyphron is given. The philosopher meets his interlocutor at the door of a court of justice in Athens, and asks him what he is doing there. The young man answers that one of his father's servants in a drunken fury had murdered another. His father had bound the murderer and thrown him into a ditch while he sent to ask the seer what he should do. Hunger, cold, and his bonds killed the murderer before the messenger returned, and Euthyphron had thereupon laid a formal charge of murder against his father. His friends were indignant, and the young man, in a mood of self-righteousness, complains that they do not know the divine law of holiness and unholiness. Socrates asks him whether he knows that law, and he answers that holiness means prosecuting the wrong-doer, and unholiness not prosecuting him. This is only an illustration, and Socrates presses for a statement of the essence of holiness and unholiness. Euthyphron answers, 'What is pleasing to the gods is holy, and what is not pleasing to them is unholy.'

Socrates then gets him to admit that there are factions among the gods, and that this must arise from differences of opinion not about material things but about right and wrong, and Euthyphron accordingly alters his definition to 'Holiness is what all the gods love and unholiness what they all hate.' Socrates then asks, 'Do the gods love holiness because it is holy, or is it holy because they love it?' and Euthyphron accepts the former alternative. Urged still further, he complains that Socrates makes him define in a

circle. The philosopher makes a fresh start and asks, 'Do you not think that all holiness must be just?'

Eu. I do.

Soc. Well, then, is all justice holy too? Or, while all holiness is just, is a part only of justice holy and the rest of it something else?

After some fencing Euthyphron admits that holiness is only a part of justice, and, later, that piety and holiness are that part of justice which has to do with the attention due to the gods, and that what has to do with the attention due to men is the remaining part of justice.

By a series of questions Socrates, having elicited that the attention of the trainer of horses is intended to benefit the horses, that of the huntsman to benefit the dogs, and that of the herdsman to benefit the cattle, leads up to the admission that 'the attention which is due to the gods' does not mean anything intended to benefit or improve them. It means the attention of slaves to their masters—that is, service to the gods. Asked what the grand result is which the gods use our service to produce, Euthyphron evades the question and says, 'If any man knows that his words and deeds in prayer and sacrifice are acceptable to the gods that is what is holy . . . but the opposite of what is acceptable to the gods is impious.'

'Then holiness,' says Socrates, 'is a science of prayer and sacrifice?' Euthyphron assents.

Soc. Then you say that holiness is the science of asking of the gods and giving to them?

Eu. You understand my meaning exactly.

Soc. Then to ask rightly will be to ask of them what we stand in need of from them, will it not?

Eu. Naturally.

Soc. And to give rightly will be to give back to them what they stand in need of from us?

Eu. True.

Soc. Then holiness . . . will be an art of traffic between gods and men?

Eu. Yes.

Soc. How are the gods benefited by the gifts which they receive from us?

Euthyphron cannot answer that question, and Socrates

'Then holiness, Euthyphron, is acceptable to the gods, but it is not profitable nor dear to them?'

Eu. I think that nothing is dearer to them.

Soc. Then I see that holiness means that which is dear to the gods.

Eu. Most certainly.

Soc. But we have already seen that holiness and what is pleasing to the gods are quite different things.

Euthyphron having had enough of this cross-questioning, suddenly remembers that he has an engagement.[1]

[1] The direct quotations in this appendix are from Church's *Trial and Death of Socrates*.

OBJECT LESSONS[1]

In a previous chapter, three general principles were laid down for the inclusion of any given subject in the curriculum of a school. A claim, if based on one of them, deserves consideration; if based on two, it is very strong; and if on the three, it is irresistible. The claim of science is based on the three. The utility of science is universally admitted; and its educational value, if not universally admitted, is incontrovertible. Every physical science begins with the careful and intelligent observation of facts, and then proceeds to classify and generalise; hence the pursuit of it gives a keenness to the senses and a vigour to the reasoning powers, which must be of immense service in any department of human activity. A knowledge of science also adds much to the elevating pleasures of life. We cannot study one which does not give interest to every country walk, to every excursion by river, lake, or sea, even to every journey by rail.[2]

Claims of science

[1] This subject is treated at greater length in *Longmans' Object Lessons.*

[2] 'I do not suppose that the dead soul of Peter Bell, of whom the great poet of nature says—

"A primrose by the river's brim,
A yellow primrose was to him,
And it was nothing more,"

would have been a whit roused from its apathy by the information that the primrose is a Dicotyledonous Exogen, with a monopetalous corolla and central placentation. But I advocate natural history knowledge from this point of view, because it would lead us to seek the beauties of natural objects, instead of trusting to chance to force them on our attention. To

But, though the claim of science to be included in the curriculum of every school is irresistible, the study of science is impossible in schools for young children. It demands, beyond the powers of observation which such children possess abundantly, powers of classification, generalisation, and inductive reasoning, of which they barely possess even the rudiments. A course of object lessons, arranged with some regard to the laws of psychology, prepared with care, and given with skill, by directing their attention towards tangible things, by encouraging them first to observe, then to compare, and finally to classify and generalise, furnishes, not indeed an equivalent for definite science teaching, but the best substitute possible in their case. Such object lessons are moreover the best preparation for it, because they place the pupil in the right road and lead him some way along it. When he begins the study of science he has simply to go further and faster in the same direction. He has simply to make more minute observations, more comprehensive comparisons, more distinct classifications, more sweeping generalisations.

Object lessons a substitute and preparation for science lessons

Object lessons being the substitute or preparation for definite scientific teaching, their primary purpose is in all stages the cultivation of the powers of observation, and in the later stages the cultivation of the powers of generalisation, classification, and inductive reasoning.[1]

Purpose of object lessons

walk through a gallery filled with wonderful works of art, nine-tenths of which have their faces turned to the wall. Teach him something of natural history, and you place in his hands a catalogue of those which are worth turning round.'—*Huxley*: *Science and Education Essays*, p. 63.

[1] 'What makes object lessons valuable, pleasant, and efficacious is the fact that they appeal to the personal powers of the child, call into play his physical and intellectual activities, and satisfy his natural need of thought, speech, movement, and change—that they reach his mind through the medium of his senses, and use what he knows and what he loves to interest him in what he knows not or loves not yet; in a word, because they are for him the concrete and not the abstract.'—*Madame Pape-Carpantier*: *Conférences pédagogiques faites à la Sorbonne*, 2e partie, p. 73.

Incidentally much useful knowledge may be conveyed, but, however much and however useful the knowledge conveyed about an object, the lesson is not an object lesson if the children have not been made to exercise their senses on the object. In that operation the function of the teacher is to direct and stimulate, not to inform—to make the children find out what they can about the object, not to tell them what he knows about it ; to question, not to lecture.

Subjects of lessons

The earliest lessons should be on the common things and the common animals to be seen in the home, the school, the streets, and the fields. A little later there should be lessons on common natural phenomena, such as clouds, mist, rain, snow, and thunder. Gradually the range of observation should be extended till it includes typical selections from the animal, the vegetable, and the mineral worlds, and the simplest elements of physics and biology. Finally, object lessons should give way to definite lessons in those sciences towards which all the courses have been slowly tending.

Several lessons on the same subject

Having regard to the fact that the powers of children are constantly developing, it is clear that several lessons may be given on the same subject at successive stages. Three lessons may, for instance, be given on coal, the first dealing with its more obvious properties and uses, the second with the mining, and the third with the origin of it. Mr. Bain [1] gives another example, the lessons which may, at successive stages, be given on a piece of chalk. 'Many sciences centre in it, and therefore it can be the starting point of an agreeable excursion in any one of several lines. It is implicated with zoology, geology, chemistry, and physics, and may be made the occasion of stating or recalling interesting truths in every one of these subjects ; all of which truths are lodged in the memory by their connection with it. It is also

implicated in numerous utilities and processes in the arts. There could not be a better example for the teacher to be put forward by him on successive occasions, a limited purpose being kept in view in each. The zoology and geology should obviously be very late; either after these subjects have been partially introduced, or with the view of introducing them for consecutive handling. What could be given separately as an early lesson . . . would be the burning of chalk and its equivalent, limestone, in the kiln, yielding quicklime, to be afterwards converted by water into slaked lime, and then used with sand for mortar. A strict statement of these circumstances, without any digressions, would be an interesting chain of empirical cause and effect to be one day used in expounding chemical and physical forces.'

Lessons must be in courses

If the habit of accurate observation is to be formed, if the senses are to be trained and the reasoning powers exercised in proportion as they manifest themselves, if the teacher is to avoid wasting his energies in building without foundations, the subjects of lessons must not only be judiciously selected, but the lessons themselves must be skilfully arranged in courses. In doing this the three chief points to be observed are :—

1. Suited to stage of mental development

1. That each lesson should be placed in that part of the series where it shall be most suited to the stage of mental development reached by the class. Taking Mr. Bain's subject, an observation lesson on the properties of chalk would be too simple for children of eleven or twelve, while one on its composition and origin would be too difficult for children of seven or eight. The first would be futile, because it would call for no effort of the perceptive powers, and would convey no information since all the facts would be familiar already; the second would be unintelligible, because it would assume knowledge not yet possessed, and powers not yet developed

impossible demands on the powers of the children ; neither, therefore, would interest or instruct ; neither would possess any value, practical or educative.

2. That the lessons should follow one another in logical order and coherence. The knowledge which the second lesson presupposes should be given in the first ; the knowledge which the third presupposes should be given in the first and second. A lesson on the composition of air, for instance, should follow, not precede, a lesson on the constituent gases.

2. In logical order

3. That the lessons should lead directly to the end proposed. Object lessons, being the necessary preparation for the definite study of science, the particular science to be finally taught should be kept steadily in view, both in the choice and the arrangement of the object lessons.

3. Tending towards the proposed end

The subject of the lesson being fixed, the teacher has to decide how it is to be treated, what facts the children are to observe, and what information, if any, he is to convey. The treatment will vary with :

Matter should vary with

1. The age of the children.
2. What they already know of the subject.
3. The time allotted to the lesson.

1. If the children are young, the teacher will confine himself to the simple facts which they can find out by the exercise of their senses and the simple inferences which they can be led to make, while he will avoid technical terms, difficult generalisations, and complicated explanations. If, for instance, a lesson were to be given to children of seven or eight on the parts of a flower, the teacher would provide each with specimens of three or four of the flowers then in bloom, having the parts well marked ; he would make the children see the parts in one, and recognise them under varying forms in the others, but he would say

1. Age of children

names. On the other hand, if a lesson on the same subject were to be given to children of eleven or twelve, he would provide specimens as before, but lay great stress on the functions and teach the botanical names.

2. Their previous knowledge

2. If what the children have done is not taken into account, their time may be wasted in an attempt to teach what they have already learned, or in an attempt to teach what they are not yet prepared to learn.

3. Length of lesson

3. If there is too little matter, precious minutes are lost; if there is too much, the teacher will hurry through it, doing nothing effectively, or doing the first part well and omitting the last part altogether.

The next consideration, after the selection of the matter, is the arrangement of it. In a simple observation lesson the great aim is the training of the 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.'[1] When the lesson is intended to give information as well as to train, the arrangement of the matter requires more skill, but no very definite directions can be given with regard to it because an arrangement which is bad in one set of circumstances may be good in another. To begin a first lesson on the cat, for example, by saying that the animal belongs to the sub-kingdom Vertebrata, to the class Mammalia, the order Carnivora, and

Arrangement of matter

the family Felidæ, would betray gross want of judgment and gross ignorance or disregard of psychology, whereas to begin thus might be justifiable if a large number of lessons had been given on typical animals and on the principles of classification.

1. The first general direction with regard to arrangement is that the facts should be presented in a natural order. The teacher should consider what are the processes by which children, if left to themselves, acquire knowledge, and he should imitate those processes as far as may be consistent with obtaining more definite results in a briefer period. To begin with definitions and classifications is to reverse the order of nature.

1. Should be natural

2. That part of the subject which most readily connects itself with the previous knowledge of the child should be placed first. New ideas, when not arising from the presentation of new objects, must be formed by the modification of ideas already possessed.

2. Should connect new and old knowledge

3. A mental survey of the matter to be taught will sometimes show that, if certain facts were presented first, all the rest might be elicited by skilful questioning. What might be done by beginning with the food of the mole and of the swallow was illustrated in the preceding chapter.

3. Should facilitate induction

4. There should be no attempt at a uniform arrangement. Young teachers have a tendency to stereotype. Their object lessons often begin with an 'introduction,' proceed to 'properties,' and (after intervening heads) end with 'uses.' A formal introduction is sometimes useful and sometimes necessary.* It is useful when the teacher can, by means of it, awaken interest in what is coming. It is necessary when a reference to past lessons forms the basis of the lesson about to be given. In all other cases it may be

4. Should not be uniform

will soon find out what it is about. Properties, too, may be omitted when they are obvious, when the children are familiar with them already, or when they are irrelevant. The same remark applies to uses, and, as a general rule, it is clumsy to separate them from the properties upon which they depend.

In school work, as in all other work, forethought and labour are the price of success, and a teacher who tries to give an object (or any other) lesson without adequate preparation courts failure. It is not enough for him to have a general or even a minute knowledge of his subject. He must consider what are the facts to which he will draw attention, which of these he must tell, and which he can elicit ; what is the best order for presenting them, and what exercises will most deeply impress them upon his pupils ; and experience has shown the advantage of noting down these points. It is true that the writing of notes takes time ; but it is also true that it saves time—it takes times in the present but saves it in the future ; it adds a little to the original work of preparation, but greatly diminishes the work of preparation when the lesson has to be revised or given to another class.

The need for notes

If notes have to be written in order to show some one else how the writer would treat a subject, they must be self-explanatory, and indicate clearly both what would be taught and how it is proposed to teach it. Such meagre directions as 'elicit,' 'deduce,' 'draw from the children,' 'get these from class by questioning,' are insufficient, because how the teacher is going to elicit, deduce, draw from the children, or get from the class, is just what one wants to know.

Full notes

However carefully notes are prepared, they are not necessarily to be followed rigidly in the giving of the lesson. Notes are made for the teacher, not the teacher for the notes ; and if, in front of his class, he discovers that the children have a greater or smaller knowledge of the subject than he gave them credit for, or that he has

Deviations from notes

misjudged the difficulty of teaching any part, he should, as the lesson proceeds, adapt himself to the unexpected conditions. To do otherwise would be to pay tithe of mint and anise and cumin, but to neglect the weightier matters of the law.

Importance of illustrations

It is hardly possible to lay too much stress on the importance of fully illustrating object lessons, for an object lesson that is not fully illustrated is a contradiction in terms. The primary purpose of an object lesson, the cultivation of the perceptive powers, cannot in the least be realised if the teacher does not have materials for the exercise of the children's senses. An object lesson without illustrations is like a swimming lesson without water, or a singing lesson without sound.

Kinds of illustrations: Actual objects

For a simple observation lesson to young children, the object to be examined is the natural and necessary illustration, and the impossibility of obtaining the object should determine the teacher to postpone the lesson, or not to give it. '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 first hand, 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.'[1]

While, in a simple observation lesson for young children, the object itself is the natural and necessary illustration, it is in all other cases the best, and should never be dispensed

with except when it cannot be obtained. Pictures are worth having when nothing better can be had, but the illustrative value of the best picture is small compared with that of the things themselves. This is especially so when the lessons are about animals. A picture of a cat, for instance, will not show the roughness of the tongue or its spoon-like action when lapping ; it will not show the pads beneath the feet or the projection and retraction of the claws ; it will not show the sheaths that protect the claws, the arrangement of the fur, or the effect of light upon the pupils ; all of which can be fully and easily demonstrated from the living specimen. Similarly, a picture of a fish would show the shape and position of gills and fins, but a goldfish in a bowl, or even a humble stickleback in a jam bottle would show these even better, and would, in addition, show the gills and the fins at work.

Animals

Many natural history lessons, of course, cannot be illustrated with living or dead specimens. Some animals are too big, some are dangerous or disagreeable to handle, and many are impossible to procure, and in these cases the teacher is compelled to fall back upon models or pictures, supplemented by whatever objects ingenuity may suggest, or forethought and luck provide. When the whole animal cannot be employed or cannot be procured, parts are useful, and the school museum should be well stocked with these. The dinner table will furnish some of the bones of an ox, and most of the bones of a sheep ; the head and limbs of a rabbit or hare ; the heads, feet, and typical feathers of hens, ducks, turkeys, and geese ; while country walks will often furnish the skulls or parts of the skulls of many common animals, and the skeletons of many common birds. With the aid of these the teacher can give very valuable lessons on structure. Thus he can give lessons on bones, teeth, and feet generally ; he can show the relation between the teeth and the food of various mammals ; and he can connect the beaks and

Parts of animals

Lessons on indigenous plants and flowers, too, should be illustrated with the actual things, and here there are abundant specimens at the command of any one who is willing to take trouble. Even in the case of foreign plants the teacher is not wholly dependent upon pictures. Tea-leaves, for example, can be taken from the pot and pasted on white card ; tobacco leaves, cocoa and coffee berries, ears of maize, cork bark, and scores of other vegetable substances can be bought nearly everywhere at a small cost.

Plants

Whatever may be the subject of the lesson, and whatever may be the specimens employed for illustration, the children must see them, and, where the nature of the specimen permits, must handle them also.[1] An object held before the class appeals to only one sense, and a small object appeals imperfectly even to that. A single piece of money is not of much use to illustrate a lesson on coins ; but if a penny were given out to each child, the various stages in the minting would become quite clear. Lessons on leaves, flowers, the parts of a flower, seeds, and many other subjects should be similarly illustrated by letting every child have specimens—indeed, could not be properly illustrated in any other way.

Illustrations must be seen

Every school should have a museum, not for ornament, but for use. Beyond the price of a dust-proof glass case this should cost little ; nay, its value will be in inverse proportion to the money spent on specimens. It should consist, not of rarities or curiosities, but of common objects likely to be needed for illustrations. Most of the contributions to it should come from the children themselves, for more benefit is to be derived from the act of collecting than from the complete collection.

School museum

Models, being only imitations, are not so good for illustration as real things ; but, being capable of examination from all

[1] The natural tendency to handle is illustrated by the notice frequently

sides, they are more effective than pictures. In the best Continental schools models of animals are regularly employed to illustrate lessons on natural history, and it is a pity that such models are so little employed in English-speaking countries.[1]

Models

Tangible illustrations should not be confined to object lessons. A lesson on the mountains and rivers of a country, for instance, almost gives itself when the contours are shown in clay or plaster. No picture and no description can make the working of a common pump half so clear as a model which can be constructed out of glass tubing; and the internal structure of a steam engine can be illustrated by a sectional model in cardboard.

Illustrations should not be confined to object lessons

Though pictures are the least effective illustrations, they are by no means to be despised; and where nothing better can be obtained, they are indispensable.

Pictures

A drawing on the blackboard is often the best kind of picture, for it awakens interest by being produced before the class.[2] It assists the attention and the memory by presenting only those details that the teacher wishes to emphasise; it is always available, and it can be more easily copied than the elaborate printed picture; and the act of copying will help to fix the lesson in the children's memories. The blackboard drawing can also be made to supplement the printed picture by showing the inside and the 'other side;' by showing on a large scale parts of the picture too small to be

Blackboard drawings

[1] With these models, as with pictures of foreign animals, there should be some indication of the scale, or a child may think a lion no bigger than a cat. There is on the market at least one good set of models constructed on a uniform scale.

[2] 'Teachers should frequently illustrate details of the lesson by blackboard drawings. Children who are jaded in five minutes by a lecture will be open-eyed and receptive for half an hour while the teacher draws as well as

seen by the whole class ; and by showing successive stages in the growth or development of the object portrayed. The employment of coloured chalks will make the blackboard picture much more effective and much more interesting.

Experiments

Every lesson that deals with even the elements of physical science should be amply illustrated with experiments. Children must receive scientific facts not on the authority of their teacher, but on the authority of their own senses ; and if a direct appeal is not made to the senses, the lesson had better not be given. As has already been said, the object of science teaching is to foster the habit of observation, and to store the mind with useful knowledge ; and how can observation be fostered when there is nothing but a teacher and a blackboard for it to be exercised on ? and how can the mind be stored with useful knowledge when words are made to take the place of things ?

Should be prepared

All experiments should be carefully prepared, and delicate or difficult experiments rehearsed. Failure is often due to the neglect of some apparently trivial detail. A lesson on oxygen has entirely missed its mark because the teacher had forgotten to provide matches to light the substance that he had intended to burn in the gas. Teachers should consider that the failure of an experiment is a serious matter, because it may mean the failure of the lesson, and it must mean waste of time and loss of esteem.

And explained

To prepare and to perform experiments is not all. Teachers may prepare experiments carefully and perform them skilfully and yet do little good with them, for an experiment is not necessarily an illustration. Every experiment exemplifies some principle, but it does not illustrate the lesson unless the teacher makes perfectly clear what the principle is, and how the experiment exemplifies it. It is not enough, for instance, if a teacher wants to show the relative proportions of oxygen and nitrogen in the air, for him to say,

nitrogen,' and then perform the usual experiment of burning phosphorus under a bell jar placed in water. He should, first of all, make clear, by a series of questions, that the jar, at the beginning, contains only air—that is, contains only oxygen and nitrogen. Then he should similarly make clear that the burning of the phosphorus exhausts the oxygen ; that the phosphorus goes out before the whole of it is consumed, because there is no more oxygen ; that the water rises to take the place of the gas used up, and that therefore the height of the water is the measure of the oxygen, and the space above is filled with nitrogen. So treated, the experiment will be an illustration as well as an experiment.

Language

Pestalozzi, to whom is due the credit of making the object lesson an essential part of modern education,[1] employed it, not for the training of the senses but for the teaching of language ; his idea being to make children understand the meaning of words by making them familiar with the things for which the words stood. Even now one sometimes finds a teacher who is not emancipated from the theory of Pestalozzi, that the object lesson is a lesson on language, not objects—a teacher who, giving a lesson on leather, for instance, spends his energies in trying to explain the terms *odorous*, *flexible*, *opaque*, &c. An observation lesson might be given on

[1] The idea itself was much older. Rabelais makes Ponocrates and his pupil Gargantua talk of the virtues, properties, and nature of everything placed on the table at meal times ; collect roots, plants, and fruits during their walks, and watch every kind of workman follow his daily occupation. Comenius, in his *Didactica Magna*, says, 'Let the senses be applied to the subject as often as possible, *e.g.*, let hearing be joined with vision, and the hand with speech. It is not enough to apply to the ears, but the teacher must present to the eyes, that through them the instruction may reach the imagination. Leave nothing till it has been impressed by means of the ear, the eye, the tongue, the hand.' Andreas Reyher, under the patronage of Duke Ernest the Pious, actually put the ideas of Comenius into practice in

the properties of leather by first demonstrating how many of them are found in the original hide, and how many are imparted in the manufacture, and then by explaining how the various uses of leather depend upon the possession of them ; but that would be a lesson on the properties, not on the meanings, of certain hard words employed to denote them.

Incidentally and indirectly an object lesson may teach new words or convey clearer ideas of the meanings of old ones. '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 trained in making a correct statement of it in a sentence of their own. This early 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.'[1]

Emphasis

In every lesson the most important facts should be emphasised. In a lesson on winds, for instance, the fact that heated air rises is the most important. When the teacher has, by illustration, explanation, questioning, and recapitulation made that clear in all its bearings, till it has become a part of the children's working knowledge, he can proceed to show the application of it in the production of wind. Then, whatever may be forgotten, the leading principle will be remembered, and the children will be able to group the rest of the lesson around it.

Inexperienced teachers either fail to emphasise anything, treating essentials and accidents alike, with the result that the children form no idea of the lesson as a whole, and perhaps remember an illustration but forget what it was intended to illustrate, or they emphasise something unimportant. In a lesson on coins, for example, they may, while silent on the necessity of alloying gold and silver, give exact proportions of the

[1] *Circular* 369. But it must be repeated that the primary purpose of

metals in each kind of coin, write the numbers on the blackboard, and have them repeated till the figures are learned by heart.

A good blackboard summary is a great aid to proper emphasis, because it calls attention to the leading, and only to the leading, facts, which are otherwise likely to be lost sight of in a mass of details. A good summary is also a great aid to memory, because it appeals to the eye, and enables a definite and comprehensive view of the lesson as a whole to be taken in at a glance. A summary should be methodically arranged and plainly written—should be produced little by little as the lesson proceeds, and, if the children are young, should contain no hard words.

Blackboard summary

READING

INTRODUCTION

JUST as the pipes conveying water to a town have comparatively little intrinsic worth, but give all who wish it command of a vast reservoir of the precious fluid, the art of reading is valuable, not for its own sake, but because it enables its possessor to draw at will from an inexhaustible store of wisdom and knowledge. '"In books lie the creative phœnix-ashes of the whole past." All that men have devised, discovered, done, felt, or imagined lies recorded in books ; wherein whoso has learned the mystery of spelling printed letters may find it and appropriate it.'[1]

Educative and practical value of reading

While the practical utility of reading is inestimable, the act of learning to read English does not greatly promote the mental development of the learner. It would be more likely to hinder than to help that development if children were in the habit of making conscious inferences from facts. Our orthography is so hopelessly illogical that, though its apologists maintain that it fosters patience and perseverance, they cannot deny that it discourages reasoning. The student who reasoned would conclude that since *d* and *o* combined make *do*, and *t* and *o* combined make *to*, *g-o*, *l-o*, *n-o*, *s-o*, and *w-o* must make, *goo*, *loo*, *noo*, *soo*, and *woo*. Only a mind too young to generalise could fail to see the anomaly ; only a faith too young to question could accept it.

Our orthography illogical

In its earliest stage reading means the immediate recognition of the sound corresponding to the written or printed symbol, and the difficulty of recognition is infinitely increased when one symbol often stands for different sounds, when one sound is often represented by different symbols, and when a symbol often has no vocal significance whatever. Thus in the lines :

A threefold anomaly

> Though the tough cough and hiccough plough me through,
> O'er life's dark lough I still my way pursue,

the one symbol *gh* stands for *f*, *p*, the guttural *ch* and nothing ; while the one sound *k* is represented by *k* in *king*, *c* in *cat*, *ch* in *chemist*, *ck* in *black*, *qu* in *liquor*, and *que* in *casque*.

METHODS OF TEACHING READING

In languages like Italian and Welsh, which are blessed with a phonetic system of spelling, the pupil passes through the first stage of learning to read almost as soon as he has mastered the alphabet ; but in languages like English, which have no consistent orthography, the first stage is very much longer. In these no royal road is possible, but various plans have been tried for removing some of the difficulties in the way, and of lessening those which cannot be removed altogether.

Methods of teaching Reading

The oldest and worst method of teaching is that generally known as the Alphabetic ; indeed, other methods have been introduced in order to remedy its defects. Children began by learning the names of the letters ; they were then required to give the names of all the letters in a particular combination, and told that these names made a certain word. It would be almost impossible for the most cruel ingenuity to contrive a plan better calculated to place fresh obstacles in a path already thick with them. In consequence

1. The Alphabetic method

between the letter-*powers* and the sound of a word, there is always an impassable gulf between the letter-*names* and that sound. In *white*, for instance, there are four sounds, the aspirate, the long vowel *oo*, the diphthong *i*, and the consonant *t*, and a little child, taught to read by the Alphabetic method, is made to say *w-h-i-t-e*, on the tacit assumption that the consonant *d*, the short vowel *u*, the consonant *b*, the liquid *l*, the diphthong *u*, the long vowel *a*, the consonant *ch*, the diphthong *i*, the consonant *t*, and the long vowel *e*, are equivalent to these—that is, on the tacit assumption that ten sounds are equivalent to four, though, after all, the ten fail to include the first and second of the four.

It would seem as if the force of absurdity could no further go, but a method which is bad in conception is rendered worse in execution when infants are set to drone or shout in chorus : *T-h-e, the, t-h-e, the, c-a-t, cat, c-a-t, cat, s-a-t, sat, s-a-t, sat, o-n, on, o-n, on, t-h-e, the, t-h-e, the, m-a-t, mat, m-a-t, mat.*

A bad method badly applied

Learning to read by this method was, at best, an effort of memory, and the ability to give the sounds corresponding to a combination of letters not before seen was acquired by a kind of unconscious induction. The only argument in favour of the method worth refuting is that the constant association of the letter-names with the word made spelling easy. This argument, however, is not valid. In practical life we spell with the pen, not with the tongue ; and we learn to spell by training the hand and the eye, not by exercising the ear. Reading, therefore, should lead up to written spelling, not oral spelling to reading.

Argument its favour

According to the Alphabetic method a word is formed (or supposed to be formed) by pronouncing in succession the *names* of the letters composing it. According to the Phonic method, a word is formed by pronouncing in succession the *powers* of the letters ; but, as there are in English thirty-six sounds, and only twenty-three useful letters

2. The Phonic method

as the same letter may stand for different sounds, as two

CONSONANTS.			VOWELS.		
p	s, c̣	th, ṭh	i̊, y	ai, ay	î, ȳ
b	c̈	ṭh	y	ay	ȳ
t	ṣ	l	e	ā-*e*	ī-*e*
d	z	r	a	ä	oi
c, k	sh, c̈h	ẅ, ÿ	o	au, aw	oy, ou
q	ŝ	x	o̤, o̊	â	ow
g	f	ẋ	u̇, u̇	oa	eu
m	ph, c̈h	c̈h	u	ō-*e*	ew
n	v	ġ	ē-*e*	oo	ū-*e*
ng	h	j	ea	û	

ROBINSON'S PHONIC ALPHABET.

letters, e.g. *th, ch, sh, ph, ai, ee, oo, ei, ie, a . . e,*[1] *e . . e, o . . e,* &c., may stand for one sound ; and as letters often stand for no sound whatever, it is evident that the Phonic method must employ some devices for supplying the deficiencies of the

[1] As in *same, mere, bone.*

alphabet. The devices adopted may be divided into two classes—diacritical marks and variations in the outlines of the printed characters.

Of English Phonic systems the most complete in its analysis and the most skilful in its synthesis was invented by the late W. L. Robinson, of Wakefield. The fundamental table as arranged by him is given on the preceding page.

The 'open' letters are the short vowels, and what Robinson called the 'whispered' consonants; the block letters are the long vowels and the 'vocal' consonants; the shaded letters are diphthongs. The bracketed letters or digraphs represent the same sound. When the fundamental table was thoroughly mastered, the distinction between open, block, and shaded letters was dropped, and children were set to read passages printed as follows :—

THE DOG AND THE SHADOW.

A DOG had stōlen a piēće of meat out of a bütcher's shop, and ẅaṣ crossiñg a river on hiṣ ẅay hōme, ẅhen hē saw hiṣ ōwn shadōw reflected in ṭhe stream belōw. Thinkiñg ṭhat it ẅaṣ anoṭher dog, ẅiṭh anoṭher piēće of meat, hē reṣolved to māke himself mäster of ṭhat âlsō; but in snappiñg at ṭhe suppōṣed treaâsure, hē dropt ṭhe bit hē ẅaṣ carryiñg, and sō lost âll.

Grasp at ṭhe shadōw and loṣe ṭhe substance—ṭhe common fāte of ṭhoṣe who hazard a rēal blessiñg for some viŝionary gọọd.

The diacritical marks indicate for which of its several sounds a letter stands. Thus—

Four sounds of *a* are indicated in had, māke, mäster, âlso.
Two „ *o* „ „ on, ōwn.

Two sounds of *e* are indicated in hē, reflected.
Two „ *c* „ „ piēće, common.
Silent letters are printed in italics.

When children had learned the powers of the sixty-five letters and digraphs of Robinson's alphabet they could read any word, however long, and any arbitrary combination of letters, provided the sounds which they represented were found in that alphabet. When printed phonically, even such irregularities as *ai*sle, dō*ugh*, *p*sâlter, and apo*ph*thegm presented no great difficulty, and it must be remembered that the extension of the alphabet from twenty-six to sixty-five signs (simple or compound) very largely increased the number of words of regular orthography.

Success and failure of Robinson's Phonic system

In schools where Robinson's Phonic system was well taught, children acquired with astonishing rapidity the power of giving the sounds corresponding to the printed symbols —the first stage of reading; they found the transition from specially printed to ordinary books easy, and, as their teaching was based on the reduction of words to phonic elements, their enunciation was very clear.[1] Yet the system is now practically dead, the instruction books being actually out of print.

In view of its possibilities this seems strange; perhaps the inventor did not know how to 'push' it, but it would have 'pushed' itself if it had not demanded from teachers more than many of them were willing to give. It demanded skill, faith, and enthusiasm, and the number of teachers was small who would first of all study the system till they could apply it effectively; who, having studied it fully, believed in it firmly;

[1] The best reading which I ever heard from infants was in a school where Robinson's Phonic method was employed. Children of seven could read fluently the leading articles in a newspaper just published. It is true that they did not understand what they read, but the feat proved that they had attained to facility in recognising the sounds corresponding to printed signs.

FƟNETIK ALFABET
FOR ƋE SEKOND OR FEINAL STƐJ OV SPELIŊ REFORM.

CONSONANTS.

Explodents.

		Name.
P	p...ro*p*e, *p*ost. ..	...pee
B	b...ro*b*e, *b*oast	...bee
T	t...fa*t*e, *t*ip	...tee
D	d...fa*d*e, *d*ip	...dee
Ȼ	ç...lar*ch*, *ch*ump	...chay
J	j....lar*g*e, *j*ump	...jay
K	k....lee*k*, cane	...kay
G	g....lea*g*ue, *g*ain	...gay

Continuants.

F	f...sa*f*e, *f*at	...ef
V	v...sa*v*e, *v*at	...vee
Ħ	ɧ...wrea*th*, *th*igh	...ith
Ƌ	d...wrea*th*e, *th*y	...thee
S	s...hi*ss*, *s*eal	...ess
Z	z...hi*s*, *z*eal	...zee
Σ	ʃ...vi*ci*ous, *sh*e	...ish
Ʒ	ʒ....vi*si*on, pleasure.	...zhee

Nasals.

M	m...see*m*, *m*et	...em
N	n...see*n*, *n*et	...en
Ŋ	ŋ...si*ng*, lo*ng*	...ing

Liquids.

L	l...fa*ll*, *l*ight	...el
R	r...mo*r*e, *r*ight	...ar

Coalescents.

W	w...*w*et, qu*i*t	...way
Y	y...*y*et, *y*oung	...yay

Aspirate.

H	h...*h*ay, *h*ouse	...aitch

VOWELS.

Lingual.

A	a...*a*m, f*a*st, f*a*r	...at
Ɑ	ɑ...*a*lms, f*a*ther	...ah
E	e...*e*ll, h*ea*d, *ea*rl	...et
Ɛ	ɛ...*a*le, *ai*r, b*ea*r	...eh
I	i...*i*ll, p*i*t*y*, m*y*riad	...it
Ɨ	ɨ...*ee*l, *ea*t, m*e*re	...ee

Labial.

O	o...*o*n, n*o*t, n*o*r	...ot
Ɔ	ɔ...*a*ll, l*aw*, *ough*t	...aw
Ɤ	ɤ...*u*p, s*o*n, j*ou*rnal	...ut
Ɵ	ɵ...*o*pe, c*oa*t, p*ou*r	...oh
U	u...f*u*ll, p*u*t, f*oo*t	...ʊʊt
Ʉ	ʉ...d*o*, f*oo*d, t*ou*r	...ʊʊ

DIPHTHONGS: EI ei, OU ou, IU iu, AI ai, OI oi.
as heard in b*y*, n*ow*, n*ew*, *ay*, b*oy*.

SPESIMENZ.

Ƌe Iŋgliʃ laŋgwej kontenz 36 soundz, and ƌe alfabet kontenz onli 23 yŋsful leterz; *c*, *q*, and *x* biiŋ diuplikets ov ɤder leterz, *c* ov *k* and *s*; *q* ov *k*; and *x* ov *ks* or *kz*. Ŧŋ ov ƌiz 36 soundz iz veriɤsli reprezented in from 2 tu 30 wez, and ƌe 26 leterz, siŋgli or kombeind, reprezent ƌe 36 soundz in 200 wez. Ƌe rezɤlt iz, ƌe konfiuzhon ov Iŋgliʃ orƋografi. Ƶud not ƌis gret ɨvil and impediment tu ediukeʃon bɨ remŋvdʔ Ai; bɤt hɛf mezurz wil not sɤfeiz. Wɨ mɤst ad 13 niu leterz tu ƌe alfabet, and yŋz everi leter konsistentli, ɔ sein for a sound. Lerniŋ tu rid and spel wil ƌen bɨ çenjd from a toil tu a plezur. Ƌis paragraf kontenz ɷl ƌe leterz ov ƌe niu alfabet.

Speliŋ reformerz ar rekomended tu emploi ƌe Ferɤt Stej ov ƌe Reform in ƌer ordineri reitiŋ. Everi reiter kan plɨz himself az tu ƌe yŋs ov ɷld or niu leterz when reitiŋ in ƌe Sekond Stej.

PITMAN'S PHONETIC SYSTEM.

and who, to study and belief, added zeal. The initial difficulty of sounding consonants apart from vowels may have seemed to some insuperable.

Sir Isaac Pitman advocated the employment of his Phonetic system as an introduction to the reading of ordinary books.

3. The Phonetic method Convinced of the impossibility of having a perfect orthography with an imperfect alphabet, he proposed the basing of a reformed orthography on a reformed alphabet. Rejecting the superfluous letters *c*, *q*, and *x*, he confined each of the remaining twenty-three to that particular sound for which it is most generally used, and added thirteen new characters.

It is evident that children who had mastered the Phonetic alphabet would very soon learn to read anything printed in it; it is not, however, so evident how ability to read words in the regular notation of a new and perfect alphabet would help them to overcome the difficulties of reading words in the irregular notation of an old and imperfect alphabet. Handling a steamer does not seem the best preparation for sailing a barge. It must be admitted that some enthusiastic teachers have obtained good results with Pitman's plan, but enthusiastic teachers will obtain good results with almost any plan.

4. The Leigh method The Leigh method, employed to some extent in American schools, tries to combine a reformed alphabet with an unreformed spelling. The alphabet is improved by the addition of new letters, each differing as little as possible in outline from the present letter to which it is most nearly allied.

A passage on the next page illustrates the method.

Leigh's system is, in a smaller degree, open to the same objection as Pitman's—that in learning it children are learning to walk along a road which they will not afterwards have to travel; and is also open to an additional objection, that an alphabet in which the differences between the letters are minute must be hard to master.

The Alphabetic, the Phonic, and the Phonetic methods are synthetic—that is, they began with elements (the names or powers of the letters) and teach children to build them up into words. The 'Look-and-say,' 'Word-and-name,' or Chinese method, is analytic. Beginning with words, it teaches children to recognise them as a whole, and only when they can do this does it proceed to call their attention to the letters composing the words.

5. The Look-and-say method

Dear little Willie
Is a very good boy,
To father and mother
A comfort and joy.

II.

When he wakes at the dawn,
No murmur is heard;
He springs out of bed
Like a bright little bird.

III.

He washes his face,
And brushes his hair;
Nor to any one gives
Either trouble or care.

One great argument in favour of the Look-and-say method is that every other method is compelled to claim its help

Arguments for the method

Such words as *one*, *quay*, *yacht*, *colonel*, and *lieutenant* must be learned through it, because no printing device, no teaching device whatever, can indicate the entire divorce between certain of the letters and certain of the sounds in these words ; and the greatest irregularities are, unfortunately, in the commonest words. The method is, moreover, natural in so far as the child begins to read as he begins to speak,—with whole words.

The chief argument against the Look-and-say system is that, attention being fixed on whole words, there is a tendency

Arguments against the method

to confound words which resemble each other, like *though*, *through*, and *thorough*. Another argument advanced against it is that, though children may by it be taught to recognise old words, they do not acquire the power of dealing with new words. The answer is, that in this, as in the Alphabetic method, children, by a long series of unconscious inferences, do obtain a fairly correct idea of the powers of the letters. A further argument advanced against the Look-and-say method is that, taking in words as a whole for reading purposes does not give that acquaintance with their parts which is necessary for spelling purposes. This is to condemn the method for failing to do what it does not profess to do. It claims to be a method for teaching reading only, not for teaching spelling. There is more force in the contention that the method leads to slovenly enunciation by not emphasising the constituent parts of words.

An admirable method employed in Germany, and thence extended to other countries, especially to France, may be

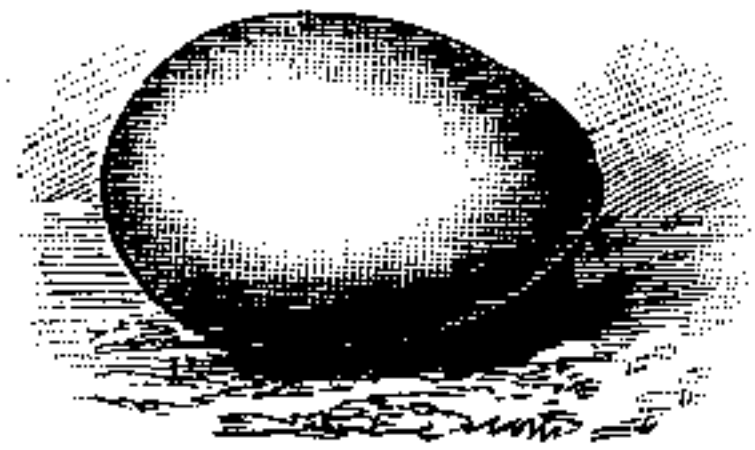
6. A German method

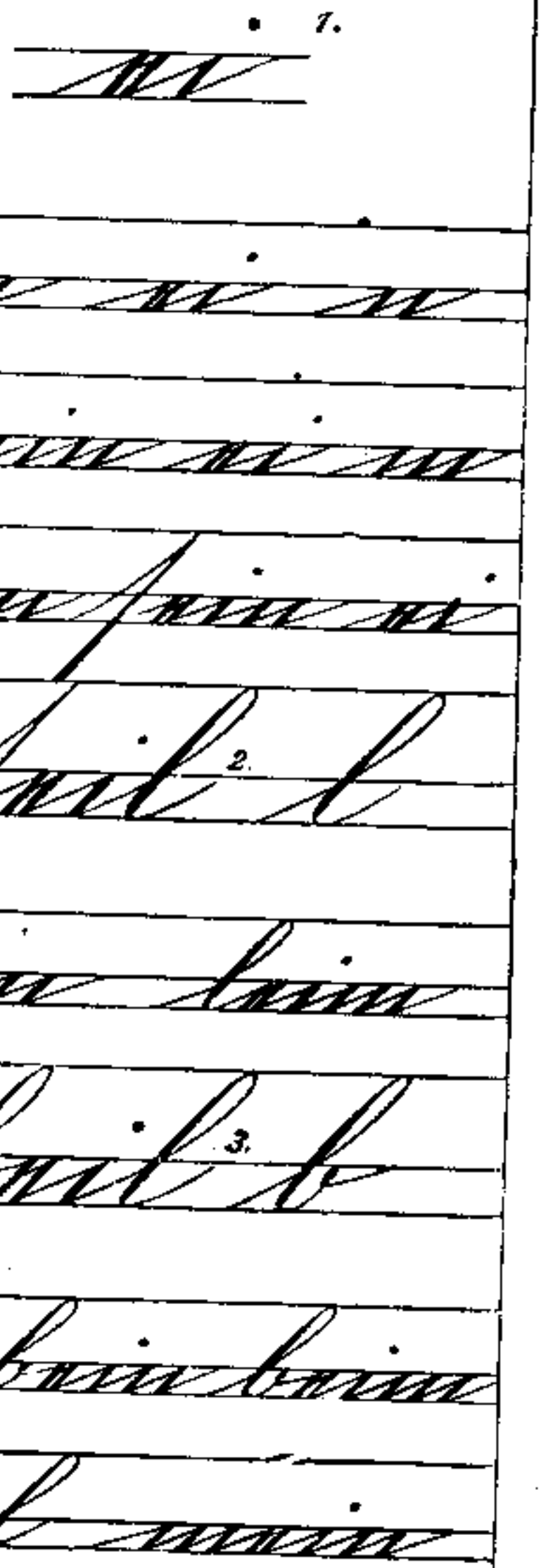
traced back to Johann Baptist Graser, a Bavarian Inspector of Schools. About the year 1820 he came to the conclusion that both Reading and Writing might be taught more easily if they were taught together. He em-

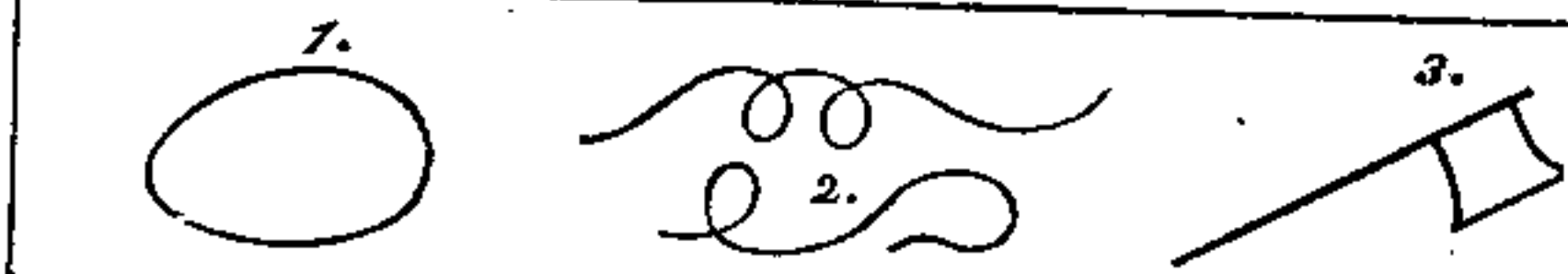
method), which, improved by succeeding teachers, has now developed into the Anschauungs-Sprech-Schreib-Lese-Unterricht. This name (which means combined instruction in things, speech, writing, and reading) is felt even by Germans to be rather cumbrous and *real*, *concrete*, *intuitive*, *natural*, and *verbal* have been proposed as substitutes for it.

Children are ready for the first lesson in this method after they have been trained in the Kindergarten to use all their senses, to manage a pencil, to draw straight lines and curves in any direction, and to pronounce the words of their little vocabulary clearly and correctly. They begin, not with printed characters and not with the alphabet, but with pictures of common objects whose names are short and regularly spelt—such as a wheel (*Rad*), a nest (*Nest*), or a hat (*Hut*). Beneath the picture on the card in front of the class and on the book in front of each child the name appears in *script* characters. The teacher has a talk with his little pupils about the object, and then asks them to notice the way in which its name is written. He writes the word on the blackboard and separates it into its elements; he makes the children pronounce the vowel by itself and in combination with the consonant; he tells them to give him other words containing the same sounds, and to point out in their books other words containing the same letters. Then he requires them to write the letters stroke by stroke from his dictation. Printed characters are taught only in the second stage.

The essentials of the method are picture, talk, sound, and form of the complete word, resolution of sound and form into their elements, and writing, but the details may be varied according to the fancy and skill of the teacher. It is said to conduce to rapid progress in reading, writing, and intelligence. The German language lends itself readily to the method, because the spelling is fairly regular, and the written characters are composed largely of straight lines; but it has been adapted







FIRST PAGE OF A GERMAN PRIMER (Dr. Jutting's).

The lesson is based on the words EI (egg), SEIL (rope), and BEIL (axe), and introduces only one vowel (*ei*).

reason why it should not be adapted with considerable success to the English language.

General remarks on methods

Of methods of carrying the child past the first bitterness of learning to read it may be remarked generally that—

1. The relations between symbol and sound vary so much in English that the power of translating the one into the other cannot be gained without much exertion, either on the part of the teacher or of the taught. A bad method makes few and a good method many demands on the originality, patience, and energy of the teacher. A good method may, perhaps, make as many demands on the taught as a bad, but in the one case every effort, being carefully directed towards a definite end, produces its full effect, while in the other most of the efforts, being badly directed, are wasted.

2. The best method is that in which the child makes most progress with least labour ; the worst is the no-method. Just as a tourist before starting makes up his mind concerning both his destination and route, the teacher, before giving his first lesson, should decide concerning both the end and means. Like the tourist, the teacher is not called upon to discover new ways ; it is enough for him to survey the advantages and disadvantages of all the old ways, choose that which on the whole seems the best, and follow it with diligence and common sense.

3. Many teachers employ an eclectic or mixed method, combining what they consider the merits of several. They teach the letters, for instance, according to the Alphabetic method ; words according to the Look-and-say, and enunciation according to the Phonic. Applied with intelligence a mixed method may be successful, but there is a danger of one of the elements neutralising another.

4. It may be presumed that the compiler of a set of books for infants has fully thought out the problem of teaching to

for the teacher to select books (perhaps because they are well printed, illustrated, and bound) and follow the plan on which they are constructed is to reverse the proper order. The teacher should decide on the plan first and then select the books in which it is best carried out, giving preference—other things being equal—to the best printed, illustrated, and bound.

5. Should there be no set of books in the market embodying the teacher's idea, the blackboard is an excellent substitute—and, indeed, some teachers in the early stages employ the blackboard exclusively from choice.

THE TEACHING OF THE ALPHABET

If the method employed to teach reading is Alphabetic, the names of the letters must, of course, be taught at the very beginning; and when any other method is employed, there seems no sufficient reason why the names should not be taught almost at the beginning. They must be learned before any lessons can be given in writing or spelling. Even with the Phonic system the names and the powers might be taught together.

When the alphabet should be taught

Many devices have been tried for facilitating the mastery of the alphabet. Quintilian mentions as a practice well known in his day (about 80 A.D.) the giving of ivory letters to children to play with; John Locke recommends 'dice and playthings with the letters on them to teach children the alphabet by play'; Louis Dumas (1676–1744) invented a kind of toy printing office; and Basedow (1723–1790) had the letters made in biscuit, and allowed the children who could point or pick out any particular letter to eat it. Rousseau ridicules such plans and says, 'The plan no one thinks of is the desire to learn. Give a child this desire and have done with your type and dice; any method will be good for him.' Rousseau draws a false conclusion from two false

Various methods

the desire to learn, and that every method is equally bad when there is no desire. The desire to learn is a potent motive for exertion, and may accomplish much with an imperfect implement; but a less potent motive may accomplish more with a perfect implement. Robinson Crusoe, to save his life, made a worse boat than the shipwright makes who works only to earn his daily bread. One had a strong desire and poor tools, the other has a weak desire and good tools.

Any method of teaching the alphabet must, in order to be thoroughly effective, give the children something to say and to do as well as something to see and to hear.

The common method

The method in common use is this:

1. The teacher writes on the blackboard the letter to be taught.

2. He pronounces the name very distinctly and makes the children imitate him.

3. When the association of name with form is as close as it can be made in the time, the children are asked to pick out other examples of the letter from the card or book.

4. The teacher then analyses the form of the letter on the blackboard.

5. The children copy it on paper (or slates) and repeat the name.

6. They build it with Kindergarten materials and repeat the name.

These are the essentials of the common method, but the ingenuity of teachers has introduced many small devices for adding variety and freshness to the details.

Only capital letters or small letters should be taught at first. Some teachers begin with capital letters, because they consider the forms simpler and easier to build with Kindergarten materials. Some teachers, on the other hand, begin with small letters because

Only capital or small letters at first

In either case there is no need to teach all the letters before using any of them. When *a*, *f*, *r*, and *t*, for instance, are taught, they can be combined into *at*, *fat*, *rat*, *far*, and *tar*. If this principle be adopted those letters will be first taught which can be most readily combined into words, viz., the five vowels and the consonants most commonly occurring.

No need to teach all the letters at once

If all the letters are to be taught before any of them are to be used, that which has the simplest outline should be taken first, and the rest should be grouped according to similarity (i, l ; n, m ; v, w) or dissimilarity (b, d ; p, q ; n, u). Many classifications are possible ; no classification is absolutely the best. The following is suggested, on the assumption that the small letters are learned before the capitals :

Order of teaching the letters

i l	**i j**	**n u**	**b d**	**a r x**
o c	**l h k**	**v w**	**p q**	**s z**
c e	**h n m**	**v y**	**t f**	**g**

If the small letters are taught first, the capitals which differ little in outline from the corresponding small (C I J K O P S V W X Y Z) will hardly need any teaching. The remainder can be classified according to their elements :

L T F E H
A N M
O Q G
D
R B
U

If the capitals are all taught first

I must be added to the first group,
V W K X Y Z to the second group,
C to the third group,
J and P to the fifth group,

and when the capitals have been taught, the small letters which differ little in outline from the corresponding capitals should be taken.

A plan sometimes employed for teaching the alphabet is to select a few Nouns containing all the letters (such as *fox*, *jar*, *toy*, *saw*, *hive*, *bell*, *lamp*, *duck*, *queen*, and *zig-zag*), draw pictures of the objects, print the names underneath, and try to associate the picture of the object with the letters of the name. In the German intuitive method pictures are used to associate the spoken with the written word, but it is difficult to see how any close association can be formed between the name of the object and the names of the letters of which the written word is composed. A child who sees a picture of a fox, for instance, will infer that the combination *f-o-x* must be the word *fox*, but he cannot possibly infer that the first letter is an *f*, the second an *o*, and the third an *x*.

Alphabet in a few words

Old picture alphabets

The method is therefore based on a false assumption, as also were the old picture alphabets, like

A was an archer who shot at a frog,
B was a butcher who kept a big dog.

Still, these were not altogether useless when the child had thoroughly committed the rhymes to memory and knew the things which the pictures were intended to represent. The picture of an archer does not suggest *A* nor the picture of a butcher *B* to a child who cannot read, but when he sees pictures which he knows are meant for an archer and a butcher, and remembers the rhymes, he concludes correctly that the signs printed beside the pictures are *A* and *B*.

A very helpful picture alphabet might be designed if it were possible to find for every letter a common object whose name begins with the name of the letter, and the picture and letter were printed side by side. A

A possible picture

a bee, ivy, a jay, an elbow, an engine, a cue, or an arrow was meant for without saying the letter *a*, *b*, *i*, *j*, *l*, *n*, *q*, or *r*. The objection that *elbow*, *engine*, *cue*, and *arrow* do not begin with *l*, *n*, *q*, and *r* is small, because the association would not be between the picture and the initial of the word, but between the picture and the letter printed beside it.

WORD-BUILDING

Whatever method may be employed for teaching the earliest stages of reading, exercises in word-building should be frequently worked on the blackboard. To familiarise children with the powers of the consonants at the beginning of words, exercises like the following should be constructed :—

Powers of initial consonants

bat, cat, fat, hat, mat, pat, rat, sat
cap, hap, lap, map, nap, sap, tap
Ben, den, fen, hen, ken, men, pen, ten
bed, fed, led, ned, red, Ted
bin, fin, kin, pin, sin, tin, win
bit, fit, hit, kit, pit, sit
cot, dot, got, hot, lot, not, pot, rot
bog, cog, dog, fog, hog, log
dug, hug, jug, lug, mug, pug, rug, tug
bun, dun, fun, gun, nun, pun, run, sun, tun

Powers of final consonants

For teaching the powers of the consonants at the end of words exercises like the following should be set :—

bad, bag, ban, bar, bat
bed, beg, Ben, Bet
bib, bid, big, bin, bit
bud, bun, but

Lengthening vowels

The effect of *e* in lengthening the preceding vowel may be taught by such exercises as :—

a

bat	bate	fad	fade	scrap	scrape	Dan	Dane	car	care
fat	fate	lad	lade	glad	glade	fan	fane	far	fare
hat	hate	mad	made	Sal	sale	man	mane	mar	mare
mat	mate	cap	cape	Sam	same	pan	pane	tar	tare
pat	pate	gap	gape	ban	bane	wan	wane	plan	plane
rat	rate	nap	nape	can	cane	bar	bare	tap	tape

i

bid	bide	rim	rime	din	dine	sin	sine	pip	pipe
hid	hide	Tim	time	fin	fine	tin	tine	trip	tripe
rid	ride	kin	kine	win	wine	fir	fire	snip	snipe
sit	site	bin	bine	pin	pine	sir	sire	spit	spite
bit	bite								
kit	kite								
mit	mite								

o

lob	lobe	cod	code	hop	hope	for	fore	dot	dote
rob	robe	nod	node	mop	mope	tor	tore	not	note
		rod	rode	pop	pope			rot	rote

u

tub	tube	dun	dune	cur	cure	but	Bute
		run	rune			cut	cute
		tun	tune				

Powers of the diphthongs

The powers of the diphthongs may be taught by such exercises as the following :—

ea = ee

lea	bead	fear	beam	heal	bean	beak	seat	heap
pea	lead	gear	ream	meal	dean	leak	teat	leap
sea	mead	hear	seam	peal	lean	peak	beat	neap
tea	read	near	team	seal	mean	teak	feat	reap
flea		rear		teal	wean	weak	heat	
plea		tear		weal			meat	
		dear		deal			neat	
							peat	
							eat	

ea = ā

bear, wear

ea = ĕ

dead	lead	stead	tread	spread	earth	earn	death	wealth	stealth
head	read	bread	dread		earl	learn	deaf	health	

ee

bee	feed	beef	feel	deem	keep	beer
fee	heed	reef	keel	seem	peep	peer
Lee	need		peel	teem	weep	seer
see	reed	leek	reel			
thee	seed	meek		been		beet
tree	weed	seek		keen		feet
				seen		meet

ie = ī

die, fie, hie, lie, pie, tie

ie = ēē

fief	field	piece	bier	liege	fiend
brief	wield	niece	pier	siege	
grief	yield		tier		priest
chief	shield	grieve	wier		

ew = u

dew, few, hew, mew, new, pew, yew, stew, chew

ew = ōō

Jew, blew, brew, crew, drew, flew, grew, slew

ue = ū

cue, due, hue, rue, sue

ue = ōō

blue, clue, glue, true, flue

ōō

too	food	roof	fool	boom	bloom
woo	mood	proof	pool	doom	broom
	rood	hoof	cool	loom	gloom
	brood	woof		room	

oo

wood
good
hood
stood

book
cook
look
nook
took
rook
shook

oo = ŭ

blood, flood

ow

bow	frown	owl
cow	brown	cowl
how	drown	fowl
now	town	howl
sow	down	
prow	gown	
vow		
brow		

ow = ō

bow	low	sow	glow	own	flow
tow	mow	snow	grow	mown	thrown

ENUNCIATION AND PRONUNCIATION

In learning the whole art of reading a child begins by learning to recognise quickly and surely the spoken words which are represented by the written or printed symbols; and he then learns to enunciate every letter and pronounce every word correctly. But the commencement of the second task should not be delayed till the end of the first; the two should go forward on parallel lines, the first only a little in advance of the second. As soon as children can recognise the sound for which a symbol stands, they should be made to produce that sound accurately. When they recognise that certain symbols stand for *a very good thing*, their task is but partly accomplished if they read them *a vewy dood fing* (or *sing*).

When lessons in enunciation should begin

Organic substitutions

Organic substitutions[1] of the kind suggested are often made by infants. The most common are:—

[1] They are called *organic* substitutions because the mistake is substituting for the sound made by one part of the vocal organs a sound made by another part. Thus, when *thing* is pronounced *fing*, a sound formed by the lower lip and the teeth is substituted for one formed by the tip of the tongue

1. *D* for hard *g*, as *dive* for *give*, *dood* for *good*, *dray* for *gray*.

2. *T* for *k*, as *tat* for *cat*, *tan* for *can*, *tall* for *call*, *tarry* for *carry*.

3. Soft *th* for *r*, as *Thound the thugged thock the thagged thascal than* for *Round the rugged rock the ragged rascal ran*. This is dialectic rather than infantile, as in some provincial districts the substitution is made by uneducated persons of all ages.

4. *W* for *r*, as *vewy pwetty* for *very pretty*. This is an adult affectation as well as an infantile mistake.

5. *F* for hard *th*, as *fing* for *thing*, *fink* for *think*, *fought* for *thought*.

6. *V* for soft *th*, as *ve* for *the*, *vey* for *they*, *vese* for *these*.

7. *S* for *sh*, especially before *r*, as *sroud* for *shroud*, *sriek* for *shriek*, *srimp* for *shrimp*, *srink* for *shrink*, *srub* for *shrub*.

8. *N* for *ng* in such words as *length* and *strength*, and still more in the termination *-ing*, as *talkin'* for *talking*, *seein'* for *seeing*, *eatin'* for *eating*. This is, perhaps, slovenly enunciation rather than organic substitution, as most children pronounce correctly *sing*, *king*, *ring*, *thing*, *fling*, and other words of one syllable ending in *ing*; and if they are made to notice how their tongues are placed in such words they will pronounce correctly the termination *-ing*.

Sometimes the *ng* in the middle of a word is correctly pronounced, but a needless *g* is added, *singing* becoming *sing-ging*, *ringing*, *ring-ging*, *longing*, *long-ging*, &c.

9. Hard *th* for *s*, as *Tham* for *Sam*, *thay* for *say*, *thave* for *save*.

10. *W* for *wh*, as *wot* for *what*, *wite* for *white*, *Wig* for *Whig*. Rather than organic substitution this is, perhaps, only a particular case of another general fault—the omission of the aspirate.

The tendency to make these substitutions should be combated from the beginning, first, because the formation of a bad

habit should be prevented ; and, next, because the early lessons deal with words containing only one or two consonant sounds, and such words are easily resolved into their vocal elements.

Correction of faults

It is not enough for the teacher to say that a certain sound is wrong and to give the right sound ; he must explain clearly how the right sound is made, and, if need be, suggest mechanical means of making it. A child, for instance, who continues to say *dood* for *good*, after being told to use the back instead of the front of the tongue, should be ordered to hold down the front part of the tongue with his fingers.[1] It is not enough even to correct mistakes as they arise. When a teacher finds any sound presenting special difficulty, he should make a list of words in which that sound occurs, and give set lessons on them.

Lessons on the vowel sounds

Set lessons should also be given on the vowel sounds, children being made to pronounce such words as the following after the teacher :

a as in *palm*

Ah ! ha ! bah ! ta ! Shah, pa, ma
alms, palm, balm, calm, psalm
calf, half
father, rather
master, pastor

In London, and by dwellers in the provinces who feel the influence of London, such words as *class*, *glass*, *dance*, *glance*, *grass*, *pass*, *past*, *fast*, *last*, *mast* are pronounced with the same *a* as in *psalm*. In some parts of the country they are pronounced with the same *a* as in *fat*. It is impossible to say dogmatically that either pronunciation is right or wrong, but it may be safely asserted that in the British Islands the speaker

[1] It has been urged by professors of elocution that the order in which the consonants are taught should be based on considerations of sound and not on considerations of form. If this principle were adopted the order would be : (1) Letters produced by the lips ; (2) Letters produced by the teeth ; (3) Letters produced by the palate : (4) The nasal.

who wishes to proclaim himself a provincial will employ the short vowel.

a as in *age*

age, ache, ail, aim, ape, air, ace, bay, day, fay, gay, hay, Kay, lay, may, nay, pay, ray, say, Tay, way, bale, bare, bate, base, gale, game, fail, fame, fare, faint, laid, lake, lame, make, mare, male, nail, pale, sale. same.

e as in *bee*

eke, eel, ear, ease, eat, eve, each, key, see, me, wee, pea, lea, tea, ye, Dee, knee, he, fee, beat, beef, bean, beam, deed, deem, deal, dear, deep, feed, feel, fear, grief, green, heed, keel, jeer, leave, ream, seed.

a as in *all*

aught, auk, awn, caw, daw, haw, jaw, caw, law, maw, gnaw, paw, raw, saw, taw, draw, thaw, pshaw ! balk, bawl, bought, fall, fought, gaud [the distinction in sound between this word and *god* should be emphasised], gawk, calk, cause, laud [to be distinguished from *lord*], maul, Paul, nought.

In London and elsewhere there is a tendency to add *r* to words ending in this vowel sound, *draw*, for instance, being pronounced *drawr*. Where there is this tendency a special exercise like the following should be set :

caw	core	law	lore	awe	or	gaud	gored
raw	roar	saw	sore	cawed	cord		
daw	door	taw	tor	laud	lord		

The exercise should be extended to such words as

cawing, sawing, clawing, drawing, yawing, thawing
Sophia, Maria, Jeremiah
Maria Anne, Ada Allen, Jeremiah Adams, Sophia Ashton, a straw hat
Dawn, lawn, sawn, fawn, pawn.

o as in *ode*

toe, though, so, doe, bow, low, foe, woe, Joe, ode, oath, oak, oaf, own, ope, bone, cone, dome, fore, goal, code, hole, home, joke, coach, boat, load, moan, comb, toll, foam, known, note, poke, pole, poach.

oo as in *boom*

ooze, coo, do, who, Loo, moo, too, boon, boor, poor, cool, room, doom, food, goose, loom, tomb, noon, tool, pool, rood, soon, coon, moon, moor, fool, boom, room, mood, wooed, loose, moose, noose.

Short **a** as in *add*

am, an, at, as, bad, bat, gnat, cat, rat, had, lad, tack, pack, rack, sack, back, cap, tap, ham, ram, sam, jam.

Short **e** as in *ebb*

egg, edge, etch, ell, bed, beg, bell, bet, dead, deaf, deck, gem, jest, led, let, men, net, Ned, neck, peck, pen, pet.

Short **i** as in *it*

if, ill, in, is, bid, big, bill, did, dip, dig, fill, fin, kid, kill, kiss, lid, lick, limb, mill, mist, nib, nip.

Short **o** as in *odd*

off, on, bog, dog, log, doll, Tom, cot, fog, gone [not gawn or gorn], hob, hod, job, jog, log, lot, lock, mop, nod, not.

Short **u** as in *up*

bud, bun, but, cud, cub, cup, cut, dug, duck, dull, dumb, dun, fun, fuss, gull, gun, hub, hull, hum, jug, just, mud, mug, must, nut, pug, pun, rub, ruff, run, rut, rug, rum, rust.

Short **u** as in *put*

bull, look, book, crook, nook, took, rook, full, foot, good, hood, wood, hook, puss, soot, wool.

Both the short sounds of **u**

buck	book	sully	woolly
ruck	rook	suck	forsook
tuck	took	putty	put
luck	look	huckster	hook

The diphthong **i**

isle, ire, ice, eyes, ivy, mite, night, sight, pie, tie, rye, die, by, Wye, why, bite, write, type, file, fire.

The diphthong **ow**

owl, our, out, ounce, cow, plough, now, bow, how, thou, vow, fowl, mouth, noun, town, gown, round, sound, sour, tower, town.

The diphthong **u**

ewe, your, use, cue, duc, few, hue, mew, new [not *noo*], pew, sue, view, cube, cure, cute, fume, duke, tube, newt, mute.

The diphthong **oi**

oil, boy, coy, hoy, joy, toy, alloy, annoy, toil, boil, foil, soil, coil, coin, loin, moist, hoist.

Allied sounds

Children who can rightly pronounce words with allied sounds (like *luck* and *look*) when the words stand by themselves are sometimes apt to mispronounce one of the sounds when both occur in the same sentence. To correct the tendency the teacher should set such exercises as the following :—

The butter is good, put it in the tub.

The sugar and the butter are put on the table.

Puss sat up on the woollen rug.

My luck must be good ; look what a fine buck I have shot.

The huckster sells hooks and eyes, mugs and jugs, but not sugar or putty.

You ought not to want to laugh when you saw the lady let the baby fall.

Fools look for fun where wise men see cause for moan.

Put the cushion on the couch and the woollen muff in the box.

Folly fully doubles troubles.

Ragged rogues trip troubled porters.

Six thick thistle sticks.

A growing gleam glowing green.

Flesh of freshly-fried flying-fish.

The sea ceaseth, and it sufficeth us.

High roller, low roller, lower roller.

A box of mixed biscuits, a mixed-biscuit box.

The bleak breeze blighted the bright broom blossoms.

Give Grimes Jim's great gilt gig-whip.

Two toads, totally blind, tried to trot to Tedbury.

She stood at the door of Mrs. Smith's fish-sauce shop welcoming him.

Strict, strong Stephen Stringer snared slickly six sickly silky snakes.

Swan swam over the sea ; swim, swan, swim ; swan swam back again, well swum swan.

It is a shame, Sam, these are the same, Sam. 'Tis all a shame, Sam, and a shame it is to sham so, Sam.

Susan shineth shoes and socks ; socks and shoes shineth Susan ; she ceaseth shining shoes and socks, for shoes and socks shock Susan.

Robert Rowley rolled a round roll round; a round roll Robert Rowley rolled round; where rolled the round roll Robert Rowley rolled round?

Oliver Oglethorp ogled an owl and oyster. Did Oliver Oglethorp ogle an owl and oyster? If Oliver Oglethorp ogled an owl and oyster, where are the owl and oyster Oliver Oglethorp ogled?

Hobbs met Snobbs and Nobbs; Hobbs bobs to Snobbs and Nobbs; Hobbs nobs with Snobbs and robs Snobbs' fob. 'That is,' says Nobbs, 'the worse for Hobbs' jobs,' and Snobbs sobbed.

Sammy Shoesmith saw a shrieking songster. If Sammy Shoesmith saw a shrieking songster, where's the shrieking songster Sammy Shoesmith saw?

I went into the garden to gather some blades, and there I saw two sweet pretty babes. 'Ah, babes, is that you, babes? Braiding of blades, babes? If you braid any blades at all, babes, braid broad blades, babes, or braid no blades at all, babes.'

The aspirate

A habit which prevails in some parts of the country of omitting the aspirate can be readily cured if the children are shown how the breathing is done, and then set such an exercise as the following :—

ale	hale	eat	heat	old	hold	art	hart	at	hat
ail	hail	eel	heel	ope	hope	ash	hash	aft	haft
air	hair	all	hall	am	ham	asp	hasp	edge	hedge
ear	hear	oar	hoar	ark	hark	and	hand	elm	helm
ill	hill	ire	hire	owl	howl				

wen	when	were	where	wile	while	wite	white	wig	Whig
wine	whine	wit	whit	Wye	why	wet	whet	wist	whist
win	whin								

Consonants

Beyond the organic substitutions already dealt with there is not likely to be much difficulty in the enunciation of individual consonants;[1] but when two or more consonants come together there is often a difficulty in giving the full value to each.

Sts becomes *ss* or *st-es* in such words as *posts*, *nests*, *guests*,

[1] The custom prevails in some districts of changing *d*, *t*, and *s* into *j*, *ch*, and *sh* before *u* (or *y*)—of saying *ejucation* for *educ*ation, *donchu* for *don't you*, *thish ear* for *this year*, &c. In some districts the custom extends to such words as *during* and *tune*, which are pronounced *juring* and *chune*. The transformation of *t* into *ch* in *nature*, *culture*, &c., is sanctioned by many correct speakers.

rests, tests, vests, crests, beasts, feasts, priests, mists, twists, wrists, fists, bastes, hastes, tastes, wastes, pastes, boasts, coasts, toasts, roasts, trusts, &c.

Shr becomes *sr* in such words as *shred, shriek, shrill, shrimp, shrine, shrink, shrive, shrift, shrivel, shroud, shrub, shrug.*

Cts becomes *cs*, *acts* being pronounced like *ax*, *sects* like *sex*, *pacts* like *pax*, *Picts* like *pix*.

Nds becomes *ns* in such words as *bands, glands, hands, lands, sands, wands, bends, lends, mends, tends, wends, sends, binds, finds, winds, hinds, grinds, ponds, fronds, pounds, hounds, sounds*, &c.

When two consonants occur at the end of a word the second is often omitted, *and* becoming *an'*. This fault should be corrected, first by making children pronounce the word slowly by itself, and next by placing after it in a phrase a word beginning with a vowel (so that the omission of the final becomes obvious), as

A man and a woman
Come buy and eat
He and I
And ever since

The same methods should be employed when the *g* of the termination *-ing* is omitted. How far they have been effective may be tested by a few stanzas from Southey's 'Lodore':—

Here it comes sparkling,
And there it lies darkling;
Here smoking and frothing,
Its tumults and wrath in,
It hastens along, conflicting, strong,
Now striking and raging,
As if a war waging,
Its caverns and rocks among.

Rising and leaping,
Sinking and creeping,
Swelling and flinging,

Showering and springing,
Twining and twisting,
Around and around.

Thumping and flumping and bumping and jumping,
Dashing and flashing and splashing and clashing,
And so never ending, but always descending,
Sounds and motions for ever and ever are blending,
All at once and all o'er, with a mighty uproar —
And this way the water comes down at Lodore.

When a word ending with a particular consonant is followed by another beginning with the same consonant, the two consonants are often sounded as one, *Welsh sheep* being rendered *Welsheep*. Care and patience on the part of the teacher will do much to correct this mistake, but the correction will be greatly aided by definite exercises such as the following :—

Double consonant sounds

B B burned his fingers.
Rub both thumbs.
Jack called at the club before Robin.
The cab broke down near the station.
The web bears several flies.
The baby's bib begins to be dirty.
The butcher sold the side of beef rib by rib.
That is the cob bought in the fair.

D D She had dry lips.
He sang of love and duty.
That is a mad dog.
Billy and Dick caught the train.
Mary is Moses Brown's grand-daughter.
We feed ducks with corn.
She gave us a good dinner.
Fear made David flee.

F F If Fred comes give him enough food.
The task is half finished.
Though a rough fellow he is full of grief for your sorrow.
Rope is made of tough fibre.
There is a trough full of water.

The chaff flew before the wind.
The roof fell with a crash.
The calf follows the cow.
They laugh feebly at his jests.

G G The big girl is growing.
His broken leg gave him great pain.
He will dig gold and silver ore.
The flag grows beside the river.
The dog growls and the pig grunts.
The gig goes quickly.
I met Meg going to the fair.
The burning log gives out a pleasant heat.

K K Jack caught two birds.
Put this book back in the book-case.
The dock cannot hold that big Spanish ship.
Dick comes late to school.
There are three black cobs in the stable.
He has a sack crammed with wool.
The sailors keep the deck clean.
The wreck crashed on the rocks.

L L He will let us go to-morrow.
She still longs for home.
Call Louie in.
The hall lamp needs trimming.
The whole letter is badly written.
The dull lad cannot do his lessons.
The pale lady is very ill.
The stars give little light.

M M Some men never work hard.
Tom must make haste.
The lame mare wants rest.
The tame magpie is hopping about the kitchen.
They all do it in the same manner.
I came many miles to see you.
We walked from Manchester.
The delay made him miss his train.

N N There are ten nails on the hands and ten nails on the feet.
I met a man named Smith.

The current is strong in narrow seas.
He likes the men of his own nation best
The hen needs corn.
Nine noblemen visited the castle to-day.
One never knows what may happen.
This is a Common Noun.

P P I remember Pope Pius IX.
The thin rope, pulled too violently, broke.
Keep peace with all men.
Philip promised to meet me here.
The loving cup passed from hand to hand.
Will the rain never stop pouring?
I hope poor Jack will soon be well.
She has given up playing the violin.

R R The waves break on the bare rocks.
There are rich coal mines in South Wales.
Four rabbits were feeding beside the hedge.
Spenser wrote the 'Faerie Queene.'
You ought to pay more respect to your elders.
The fish were swimming in the clear river.
The house has fallen to utter ruin.
A poor relation came to beg.

S S This sum is very hard.
Miss Smith has gone home.
Puss sits on the rug.
Please pass some bread.
She dances sometimes.
Can mice swim?
Bring the glass salad bowl.
That class sings well.

T T It is quite time that you had done.
You have no right to say so.
He is hot-tempered.
Who made that table?
She bought a fat turkey.
Let Tom know that I want him.
Do you eat tomatoes?

V V Buy a knuckle of veal.
We have visited Bath.
I do not love vanity.
The weaver wove velvet.
When do you leave Venice?
They move very slowly.
All hail the brave victor.
The loss of the dove vexed him.

Z Z Those zebras are untamed.
These zealous men are not very wise.
The sun has reached his zenith.
These circles mark the earth's zones.
I am pleased with the boy's zest for work.
Have you visited London's Zoological Gardens?
Who made these zig-zag lines?
Jones sells zinc pails.

Ch Ch Each child must do this.
Under which chief do you intend to fight?
The farmer says there is much chaff and little corn.
A rich church ought to help the poor.
Such childish talk is tiresome.
The police are trying to catch cheats.
Do you like Dutch cheese?
He is the minister of the Scotch chapel.

Sh Sh Spanish ships of war at sea I have sighted fifty-three.
Welsh sheep give good mutton.
That was a rash shot.
Fetch me a fresh sheet of paper.
Tell him to brush shoes and boots.
The winds dash ships against the rocks.
The fish has a whitish shell.
The bush shades the flower growing at its roots.

Th Th That is the fourth thief caught.
(hard) The youth threatens in vain.
He hath thought so for a long time.
Push the lath through the hole in the roof.
The tenth thousand of my book is ready.

Both think alike upon this subject.
I travelled south through France and Italy.

Th Th (soft)
He went with them.
Smooth their pillows.
Bathe their foreheads.
The streams soothe them to sleep.
They breathe their vows to deaf ears.
I will come with thee.
With this ring I thee wed.
The soldiers sheathe their swords.

The need of giving every consonant its full value will be further emphasised by pairs of sentences like the following :—

Pain no man.	Pay no man.
James sought to learn.	James ought to learn.
He will learn it.	He will earn it.
I have seen neither Tom nor his brother.	I have seen either Tom or his brother.
That is a tall lass.	That is a tall ass.
That is his soap.	That is his hope.
The crime moved him.	The cry moved him.
Goodness centres in the heart.	Goodness enters in the heart.
Who found this spike?	Who found this pike?
We shall have cold ears soon.	We shall have coal dear soon.
He did not return till late.	He did not return till eight.

Pairs like the following will emphasise the need of a correct division of words :

I had an ice-cold drink.	I had a nice cold drink.
He came across an ocean.	He came across a notion.
That is thy known act.	That is thine own act.
We have a never-dying soul.	We have an ever-dying soul.
The enemy sows tares.	The enemy so stares.

Children who have been trained to give every letter its full value will generally pronounce correctly, but there are certain words which will always need attention, and the teacher would do well to make a classified list of them as they occur. The following is suggested as the basis of a classification :—

Words needing special attention

1. Words in which letters are often slurred, as *eleven, memory, believe, government, Arctic, Antarctic, Asia.*

2. Vulgar errors, as *axe* for *ask*, *ast* for *asked*, *bin* for *been*, *pore* for *poor*, *drownded* for *drowned.*

3. Words in which the vowel is wrongly sounded, as *bade, comely, bosom, brooch, catch, clerk, heinous, jowl, damage, language, passage, isolate, decisive, incisive, engine, regiment.*

4. Words with an intruded sound, as *mischiev*[*i*]*ous*, *height*[*h*], *Westmin*[*i*]*ster.*

5. Words wrongly accented, as *theatre, applicable, comparable, hospitable, disputable, formidable, desultory, conversant, commendable, contemplate, erudite, canine, coadjutor, indissoluble, obdurate, illustrate, precedence.*

6. Certain words from Latin or Greek roots are by some persons accented as in the original languages, and by some in the English manner. *Abdomen*, for instance, is pronounced *ab-dō'-men* and *ab'-dŏm-en.* There is a similar difference between the classical and the popular pronunciation of *decorous, sonorous, deficit, aristocrat, aspirant*, &c. With regard to thes words the teacher must decide for himself, as he also must with regard to

7. Such words as *either, neither, humour, herb, daunt, flaunt, gaunt, haunt, haunch, falcon*, &c.

8. Words likely to prove stumbling-blocks, as *awry, bass, ally, impious, lichen, orchid, antipodes, anemone, apostrophe, catastrophe, animalcule*, &c.

Defective enunciation is sometimes the result of defective vocal organs. When, for example, the front teeth of the upper jaw do not exactly meet the front teeth of the lower jaw the sibilants will be imperfect; and when the tongue is 'tied,' *t*, *d*, *n*, *l*, and *r* will be imperfect. These organic defects are beyond the power of the teacher, the first calling for the aid of a dentist, the second for the aid of a surgeon.

Defective organs

Stuttering and stammering arise not from any defect in the

vocal organs but from incapacity to control them. In stuttering . . . the lips and tongue rebound again and again before the sequent vowel can find egress. The mouth opens and shuts in vain effort to act on the throat, and the throat opens and shuts in vain effort to act on the diaphragm. From the rocking head to the fluttering chest there is a general want of precision in the attempt to articulate. In stammering, the breathing is entirely deranged, the normal actions of the chest and diaphragm are reversed; the breath is inspired in the attempt to speak; the throat is shut in the attempt to form sound; the voice is fitfully ejected or restrained; and the articulating organs when they meet remain inseparable, as if glued together.'[1]

Stammering and stuttering

A teacher can hardly be expected to find the time or to possess the skill necessary for the cure of long-standing cases. But the cases with which he will have to deal are not likely to be of very long standing; in the treatment of them he can, therefore, hope for considerable success, and with his pupils generally he can exercise that prevention which is better than cure. Stammering or stuttering is a habit often acquired, like chorea (St. Vitus's dance), by conscious or unconscious imitation. The nervousness which accompanies it may be a cause or a consequence, and whether it be the one or the other the teacher must try to remove it. He should show the utmost patience and gentleness, carefully suppressing in the other children every sign of astonishment or amusement, and encouraging the sufferer to take time.

EXPRESSION

A passage read with proper expression differs as much from the same passage read without expression as a tune played by a great musician on the organ in a cathedral does from the

[1] A. M. Bell, *The Faults of Speech*, p. 9.

same tune ground by an Italian out of a barrel in the street.

Value of expression

One conveys the full meaning of the author even 'to the dull ear of a drowsy man'; the other, to the most attentive listener, suggests only some part of the meaning.

It is obvious that before a reader can convey the meaning he must understand it; there can be no intelligent expression without intelligence. When Milton's daughters read Latin to their father their pronunciation of the words which they did not comprehend may have been accurate; but, unless the work chosen was such as he more than half remembered, their performance must have been almost as void of sense for him as it was for them.

Intelligence must precede expression

If, therefore, children are to do more than utter words mechanically, they should know the meanings of the words, and they should be taught these meanings from the very beginning. The simplest sentence written on the blackboard, or printed in the primer, should be treated not as so many words to be pronounced independently and monotonously, but as a statement of fact to be spoken with proper stress. Thus the sentence

The fat cat sat on the mat

should be broken up into three phrases—'The fat cat . . . sat . . on the mat,' and, as the context does not point out the emphatic word, the sentence should be read successively as the answer to the questions

What kind of cat sat on the mat?
What sat on the mat?
What did the cat do on the mat?
Where did the cat sit?

There is a peculiar advantage in teaching expression thus early, because young children have little self-consciousness,

whereas older children are often ashamed to read naturally in the presence of their fellows.

From the beginning, then, the teacher, before calling on children to read a sentence, should assure himself that they know its meaning. There is no need for them to be able to give a dictionary definition of the words in it, but they must understand the drift of it as a whole, and they ought to be able to make in their own words the statement which it makes in other words, perhaps more bookish.

Children may be able to explain the meaning of every word in such a sentence as 'The curfew tolls the knell of parting day,' and yet not understand the meaning of the sentence; and they may be able to give the dictionary definition of a word without really knowing the meaning. Testing the knowledge of the children by asking them to form original sentences containing the word may result in such combinations as

Vicissitude, change. My mother sent me for the vicissitude for half a crown.

Pacify, to compose. The author pacified a poem.

Flinch, to shrink. The flannel flinches when washed.

The sentence should therefore always be the unit of meaning, and questions on the matter should always be given. If the matter read be a story, the children should be made to tell it in their own language.

The primary purpose of a reading lesson being to teach reading, it is only indirectly that the reading lesson will increase the reader's vocabulary. It follows that, though all the less common words be printed together at the head or at the foot of a selection, their meaning should be taught only when the words are reached in their proper place in the sentence. It also follows that those reading books are not edited with judgment which contain a large proportion of words that the child would not use in ordinary speech.

While it is impossible to express the author's meaning

without understanding it,[1] it is quite possible to understand it without being able to express it. A man might write an admirable commentary on 'Hamlet,' and yet fail utterly in representing the least important character in the play; Shakespeare himself is reputed to have been an indifferent actor. To know what to do is one thing; to know how to do it quite another. The work of the teacher of Reading, therefore, is, as regarded from the present point of view, twofold. He must first of all help his pupils to find out, and then help them to convey the meaning of a passage. This implies that he should himself be capable of setting a good pattern.[2] If he reads badly, they will certainly read a little more badly; hence he should not rest content till his own worst performance is a little better than what he is willing to accept as their best. It is not the business of this chapter to lay down rules for expressive reading—they must be learned from books of elocution or from the living exponents of the art. Here one need only point out that the matters to be attended to are (1) the rate; (2) phrasing and the length of the pause after each group of words; (3) the giving of its full force to every word which the sense shows to be emphatic; (4) inflexion of the voice; and (5) in the more ambitious efforts—gesture. The ideal to be aimed at is to get children to read as naturally as they speak, though this is an ideal for expression alone; enunciation and pronunciation should be far better in reading than in ordinary speech.

Expression must be taught

[1] The infant prodigies 'that cry out on the top of question and are most tyrannically clapped for 't' are only apparent exceptions to this rule. *They* do not understand the passages which they declaim, but *the trainer* whom they imitate does.

[2] 'Short pattern reading' has been condemned officially, but the condemnation is somewhat indiscriminating. The teacher reads for the children to imitate him, and if the passage read is too long the burden laid on the memory is too great. The length of the passage must therefore increase with the age of the pupils. In the lower classes a single sentence may suffice; in the higher a whole paragraph may not be excessive.

READING FOR MATTER

The difficulties of teaching Reading being so great and the need of overcoming them so imperative, teachers are sometimes apt to forget that the art of Reading is not an end in itself but a means to an end. The end is the power of obtaining profit or pleasure from the perusal of printed matter. Nearly the whole of the stored-up knowledge of the world is to be found in books, and, though people sometimes commit a great mistake in going to books for facts which they ought to gain by the use of their senses,[1] they would commit a greater mistake if, before proceeding to the original examination of any subject, they neglected to master all that is already known about it. A student of astronomy, for instance, would be wilfully carrying himself back beyond the days of Ptolemy if he resolved to formulate a system of the universe from his own observations exclusively. He would act wisely in repeating the observations of others for the sake of verifying the results, learning the methods of investigation, and perfecting himself in the manipulation of instruments, but he would waste time and labour if he attempted to make discoveries already made.

Reading a means not an end

Books are a source of delight as well as of information. Thousands of poems, novels, and essays which add little to the knowledge of the reader add much to his stock of pure enjoyment; and the child, therefore, who has acquired the power of quickly and correctly translating printed symbols into spoken sounds, but has not acquired the habit of going to books for profit and pleasure, has simply come into possession of a most effective and valuable tool which he knows not how to use—a most effective and valuable tool,

Books a delight

[1] 'A man may as well expect to grow stronger by always eating as wiser

but an edged tool, which may be very dangerous in hands that have not been taught how to manage it.

Children cannot by reading increase their stock of knowledge if they do not understand what they read.[1] Questions on

[1] David Stow shows by an example (a rare one, let us hope) that children may read, and read fluently, without receiving any information whatever. He says :—'A few years ago I visited a school in one of the large towns of England, taught on the monitorial plan, and was introduced to the master by one of the directors, who stated that he was a very superior teacher, and had his boys, to the number of at least 350, in good order. I found the school, as stated, in excellent order, all busy at spelling lessons or reading the Scriptures. On reaching the highest class, in company with the master and the director, I asked the former if he ever questioned his pupils on what they read. He answered "No, sir ; I have no time for that : but you may if you please." I answered, that except when personally known to the teacher, I never questioned children in any school. "By all means do so now, if you please : but *them* thick-headed boys cannot understand a word, I am sure." Being again asked to put a few questions, I proceeded : "Boys, show me where you are reading"; and to do them justice, they read fluently. The subject was the story of Eli and his two sons. I caused the whole of them to read again the first verse—"And Eli had two sons, Hophni and Phineas." "Now, children, close your books." Presuming it impossible that any error could be committed in such a plain narrative, I proceeded : "Well, who was Eli?" No answer. This question appeared too high, requiring an exercise of thought, and a knowledge not to be found in the verse read. I therefore descended in the scale, and proceeded : "Tell me how many sons Eli had?" "Ugh?" "Had Eli any sons?" "Sir?" "Open your books, if you please, and read again." Three or four read in succession, "And Eli had two *soons*, Hophni and Phineas." "Now answer me, boys—how many sons had Eli?" "Soor?" "Who do you think Eli was?" "Had Eli any sons?" "Ugh?" "Was he a man, do you think, or a bird or a beast? Who do you think Eli was, children?" "'Soor?" (sir). "Look at me, boys, and answer me—If Eli had two sons, do you think his two sons had a father?" "Soor?" "Think, if you please—Had Eli ANY sons?" No answer. "Well, since you cannot tell me how many sons Eli had, how many daughters had he, think you?" "*Three*, sir." "Where do you find that, boys? Look at your Bibles. Who told you that Eli had three daughters?" "Ugh?" The director turned upon his heels and the master said, "Now, sir, didn't I tell you them fellows could not understand a word?! ! !"'—*The Training System*, 11th edition, p. 115.

the matter should therefore form a part of every reading lesson, and when the answers show that there is not a full comprehen-

Questions on matter

sion of the meaning, the necessary explanations should be given. Answers consisting of a single word should never be accepted. From the youngest child complete sentences should be required, and from older children a continuous narrative or statement, which should sometimes be in writing.

It is a good plan to let children read occasionally for the matter only. They should be allowed to peruse in silence a

Reading for matter

few pages of a book with which they are not familiar, and after a sufficient interval they should be asked in their own words the substance of the passage.

Another good plan, with the older children, is to set as the subject of an essay some topic treated in a book accessible to them, and to refer them to that book for their information. An extension of the same plan is to set a topic and to give time for getting it up without specifying the sources whence the information is to be obtained.

LOVE OF READING

A good teacher of swimming is careful not to frighten his pupils, because he knows that it is of little use for them to

Love of reading must be imparted

acquire the power of keeping on the surface of the water if his lessons make them resolve never willingly to enter it. So with Reading. A child at school can be compelled to read, can be compelled even to extract knowledge from books; but he who reads only on compulsion will cease to read as soon as the compulsion is withdrawn. The teacher must therefore strive to impart a love for Reading. He cannot impart what he does not possess; but it is to be hoped that if any one who has taken up teaching

does not possess a love for reading, he will soon be fortunate enough to find some more congenial occupation.

The teacher's own delight in reading will make his lessons pleasant, and this, in itself, is a very great advantage, for, when the lessons are pleasant, books will have agreeable associations.

Reading books should be carefully chosen

Reading books should be chosen with great care. Poor children read few other books, and no children read any other books so slowly, so minutely, or so repeatedly. We cannot expect children to love books which are not worth loving; hence, whether the lessons in the reading book be continuous or detached, whether they be selected because they contain certain words, convey certain information, inculcate certain moral truths, or stimulate certain emotions, they should invariably be interesting. They should also invariably be well written. They would then 'afford the best chance of inspiring quick scholars with a real love for reading and literature in the only way in which such a love is ever really inspired, by animating and moving them; and if they succeeded in doing this, they would have this further advantage, that the literature for which they inspired a taste would be a good, a sound, and a truly refining literature; not a literature such as that of most of the few attractive pieces in our current reading books, a literature over which no cultivated person would dream of wasting his time.'[1]

LIBRARIES

The appetite for reading grows with what it feeds on, and care should be taken to provide it with a good and plentiful diet. In the case of poor children it is the duty, and in the case of other children it is the policy, of the school to provide this,

[1] Matthew Arnold: *General Report for the year* 1860.—Many of the reading books of the present day are far from deserving the sweeping censure which Arnold considered those of 1860 to deserve.

for the reading which poor children get elsewhere is not likely to be very good or plentiful, and the reading which other children get elsewhere is likely to be more plentiful than good, and cannot be directed or controlled by the teacher. It is therefore advisable that *every* school, and essential that every *poor* school, should have a lending library All the books in this should be interesting, as the main purpose of the library is to create and foster a love of reading.[1] They should also, of course, possess high literary merit, and be suited to the capacities of children of various ages. When the authorities are not hampered by lack of means, each form or class should have its own library; and, when there is only one general library, the teacher of each form or class should superintend the distribution of the books among his own pupils. Knowing their individual needs and peculiarities better than anybody else, he can apply his knowledge in the choice of books and use his personal influence in encouraging reading.

School libraries

If there is a public library within reach of the school (and in an intelligent and educated community the public library is more of a necessity than the public-house) the teacher should take full advantage of it. He should make himself acquainted with its contents, and post up in the school classified lists showing the authors, titles, and catalogue numbers of the books most suitable for young people[2]; he should explain the routine for borrowing, and urge his pupils to borrow, and he should try to establish friendly relations with the librarian.[3]

Public libraries

[1] In a well-equipped school there will be a reference library as well as a recreation library.

[2] In some public libraries there is a 'Juvenile Department' with a catalogue of its own. Several copies of this catalogue should be kept in the school, and the teacher should not only urge the pupils to borrow, but excite their interest by talking about the books and reading striking passages from some of them.

[3] This is generally easy, for what an intelligent librarian desires to see

A READING LESSON

The details of a reading lesson must vary with the age of the children and with many other circumstances, so that what is an excellent method for one class may be a poor one for another. A good lesson implies a judicious choice both of the ends to be attained and of the means to attain them.

Means must vary with the end

The ends

The ends to be attained are :

1. Ready recognition of the printed symbols.
2. Clear enunciation and correct pronunciation.
3. Fluency.
4. Natural expression (involving an intelligent comprehension of what is read).
5. Mastery of the matter.

With young children the teacher will strive chiefly to secure the first three ; if his efforts are successful he will, with older children, have to strive chiefly for the last three.

When the furnishing of the school-room admits of it, children should stand in a semicircle during the reading lesson. Standing allows the deep respiration essential for good voice production, and is a relief from the sitting inevitable with most lessons. If the whole class cannot stand, the pupil called upon to read individually should always stand.

Standing

Steps in a reading lesson

In the typical reading lesson the following steps may be taken :—

1. The books are given out. To prevent waste of time the teacher has seen beforehand that there is a book for every child, and that the pages to be read are not wanting in any book.

2. The page is announced. When children are very young it is well also to announce the title of the

to say what picture (if any) occurs on the page. A rapid walk behind the class assures the teacher that every one has found the place. Young children should be made to point to the word. The mechanical act helps to fix the attention, and is a proof that the teacher's labours are not being thrown away.

3. There is a brief talk about the matter of the lesson. Children will better understand the meaning of each part if they have a general idea of the meaning of the whole.

4. The teacher reads the first sentence and tries to make his reading a model of clear enunciation, correct pronunciation, and natural expression.

5. If the meaning of the sentence is not transparent he explains it.

6. He deals with each word the reading of which is likely to present any difficulty.[1] The method of dealing with it will be the method employed in the school for teaching reading. Whatever the method, the word will be written (or printed) on the blackboard with other words presenting the same difficulty. In some reading books the hard words are placed together at the head of the lesson, and some teachers deal with these words together before beginning the reading. This does not seem the best plan; it is meeting troubles more than halfway. A list of hard words is useful for revision.

7. After dealing with the hard words in the sentence, the teacher reads it again, and the class simultaneously tries to imitate him. Mistakes of enunciation, pronunciation, and expression are corrected as they occur, and the simultaneous reading is repeated till it is as perfect as possible. One or two of the best and one or two of the worst readers are then asked to read the sentence individually. For every child to read every sentence individually would be impossible with a large,

[1] The teacher should reserve one copy of the reading book for his own use, and mark in it every word requiring special attention. The margins

and monotonous with any, class. Simultaneous reading is therefore a necessary device, but it should be employed with skill. The teacher must take care

a. That every child is reading. (This is a point of order.)

b. That the reading is really simultaneous.

c. That it is reading, and not intoning or sing-song.

d. That it is not excessive. There should be enough individual reading to enable individual mistakes to be corrected. The best readers should be called upon, because offering a pattern more easily imitated than the teacher's own, and the worst, because requiring most attention.

8. When the paragraph or section has been taken in the manner indicated it is read simultaneously and individually. The children who are not reading are kept alert by being made to point out the mistakes of the child who is.

9. When the whole lesson is gone through, questions are asked on the matter and on the meanings of the less common words.

SPELLING

MANY people appear to consider bad spelling an infallible sign of defective education, and would rather have their conduct than their orthography called in question. Bad spelling may arise from want of reading or from want of a sense for form. It may also arise from, though it does not necessarily prove, want of ability. The combination of letters which shall represent a given word is decided, not by reason but by custom, which often sets reason at defiance.[1] Nevertheless the very fact that the public (including parents and employers) attaches too much importance to what happens to be considered correct spelling compels the spending of too much time in teaching it.[2]

Too much importance attached to spelling

The power of spelling correctly implies the power of recalling rapidly and accurately the conventional images of words. This seems almost instinctive with some children. They unconsciously learn to spell as they learn to read, but with their less fortunate fellows systematic instruction is necessary. The aim of such instruction is twofold—the

What must be aimed at

[1] Though many apparent anomalies, such as the silent *b* in *debt* and the silent *u* in *honour*, are justified on etymological grounds, other anomalies are retained in spite of etymology. With a proper regard for etymology *island* would be spelled *iland* and *rhyme*, *rime*.

[2] Pharisaical adherence to one arbitrary form for each word is comparatively modern. Queen Elizabeth (whose great ability and great learning are undoubted) wrote *sovereign* in seven different ways; her favourite Leicester subscribed his own name in eight different ways; and Steele, in the first

training of the eye to the recognition, and of the hand to the reproduction of the forms of words.

In practical life we spell with the pen, not with the tongue; hence to impress letters on the memory by saying them again and again is to pay dearly for what is worth little. The chief object being the training of the eye and hand, the chief means should be reading and writing, though oral spelling may, with some advantage, be employed as an auxiliary. Saying the letters compels looking at them carefully; the ear may help the eye to remember; and speech is more rapid though, here, less effectual than writing.

Spelling with the pen

Oral spelling must, however, be employed with moderation and intelligence. It should be used as an aid to the training of the eye, but never allowed to become a substitute for the training of the hand. The letters should not be repeated so often that the operation becomes mechanical or monotonous, and there should be no uniformity in the manner or the number of the repetitions. If, for example, the words *chimney*, *lawns*, *boughs*, *buttercup*, *dawns*, *skies*, *daylight*, *sheaves*, *lowing*, *tinkle*, *whirl*, and *purple*[1] had to be taught orally, the teacher would pass quickly over *chimney*, *buttercup*, *tinkle*, and *purple* as being fairly regular, and over *daylight* as being compounded of two words certain to be already familiar. *Lawns* and *dawns* would be written on the blackboard with *fawns* and *prawns*, *boughs* with *ploughs*, and *whirl* with *twirl*; *sky* would be taken with *skies*, and *sheaf* with *sheaves*.

Oral spelling

Word-building is as essential a part of the spelling as of the reading lesson. The aim of the exercise in both cases is to teach the powers of the letters (in reading to impress on the mind the sound corresponding to the symbol, and in spelling the symbol corresponding to the sound). When these have been mastered the exercise may

Word-building

[1] Printed at the head of Lesson 52 in the Third *Ship Literary Reader*.

be extended to such rules as our orthography admits of. Thus, when the rule for the doubling of the final consonant has been taught, children should be asked to add *-ing* and *-ed* to *beg*, *plod*, *fan*, *fret*, *shrug*, *nod*, *rub*, *sup*, *hop*, &c. ; and *-er* to *rub*, *slip*, *stop*, *sup*, *big*, *fat*, *hot*, *hat*, *red*, *sad*, *sin*, *tan*, *thin*, *wet*, &c. When the rule for dropping the final *e* before affixes beginning with a vowel has been taught, children should be asked to add *-ing* and *-ed* to *hate*, *fade*, *gape*, *scrape*, *wane*, *care*, *plane*, *rattle*, *settle*, *manage*, *require*, *excuse*, *escape*, *injure*, &c. ; *-er* to *large*, *close*, *fine*, *write*, *sure*, *wide*, *idle*, *feeble*, &c. ; *-able* to *change*, *peace*, *desire*, *cure*, *move*, *note*, *excite*, *admire*, *advise*, &c. To impress the fact that the *e* is not dropped before an affix beginning with a consonant they should be asked to add *-ment* to *abate*, *amaze*, *confine*, *engage*, *improve*, *manage*, *excite*, *agree*, *measure*, &c. ; *-ful* to *peace*, *care*, *grace*, *hope*, *shame*, *tune*, *use*, &c. ; *-ness* to *close*, *feeble*, *fine*, *like*, *gentle*, *forgive*, *polite*, *fierce*, *coarse*, *white*, &c. ; *-less* to *care*, *taste*, *base*, *grace*, *hope*, *shame*, *use*, *sense*, *noise*, &c. ; *-ly* to *sure*, *sore*, *like*, *lone*, *polite*, *sole*, *safe*, *fierce*, *scarce*, *sincere*, &c.

The principle of comparison should be freely applied. Children are the more likely to remember that *knife* begins with a silent *k* when they see that *knee*, *knock*, *knack*, *knob*, *knead*, *know*, and *knave* also begin with a silent *k*. The principle of contrast should also be freely applied. Words like *conceive*, *deceive*, *perceive*, *receive*, and *seize* should be taught with words like *belief*, *relief*, *grief*, and *siege*.

Comparison and contrast

Oral spelling (with the variations and aids indicated) is not without its use, but for the training of the eye and hand the teacher must trust chiefly to copying or transcription. The words or passages to be copied or transcribed should of course be selected with a definite purpose, according to a pre-arranged plan, and the extent to which children have benefited by the exercise should be tested by dictation. In copying or transcription good writing should always be insisted on, as a well-written word leaves on the

Transcription

mind a clearer image than a scrawl. Supervision and correction should be thorough, as every mistake which is passed over leaves a confused or a wrong impression on the mind. Young children should generally write complete sentences. If their attention is confined to isolated hard words they will fail to become familiar with the common but by no means easy words which make the bulk of daily speech. Even older children must write complete sentences when dealing with words similar in sound.

Dictation

Dictation, often largely adopted as a method of teaching, is really only a method of testing spelling. A child who makes no mistakes learns nothing from it. Still, dictation, employed, like oral spelling, with moderation and intelligence, is a useful and necessary exercise. It may be made an incentive for the careful study of all the hard words in a given 'piece,' and it shows what pupils and what words call for special attention.

A dictation exercise

Having selected the passage to be dictated, the teacher reads it aloud. A knowledge of the meaning of the whole will help the children to catch the sound of each separate word, and to decide between the different spellings by which the same sound is sometimes represented.[1]

The passage is then dictated in sections of from two to six words, according to the age of the children and to the sense. The teacher should speak clearly enough for every one who is listening to hear and understand, and there should be, as a rule, no repetition. Children will not attend the first time if they think that there will be a second time. The rate of dictation should be regulated by watching a good writer of average speed. 'Copying' must be prevented by every means, moral and mechanical.

After the dictation comes the correction. If this be not thorough, the exercise is worse than valueless. A misspelling

[1] Without hearing the context it would be impossible to decide whether to write 'I heard the canon,' or 'I heard the cannon.'

indicates a false impression of the form of a word, and this is deepened by iteration. Every mistake must, therefore, be discovered, and the correct spelling written a sufficient number of times to remove the false and imprint the true impression. The best method of correction is for the teacher to examine every exercise himself (the children, meanwhile, being usefully employed), but this is possible only with small classes. The method of mutual correction generally adopted is open to three objections—the corrector's own right spelling may be confused or wrong spelling confirmed by the mistakes of the corrected; errors may be passed over; and there is a constant temptation for the child to look at his own exercise instead of the one before him. This temptation can be largely overcome by good discipline, and entirely obviated by a simple device. The child at the upper end of each row of desks takes his own book (or slate) and that of his neighbour to the lower end of the row; the remaining books (or slates) are then passed up two places.

A better plan than mutual correction is for each child to correct his own, but this can be followed only when the training in honesty and carefulness has been successful.

Whatever method is adopted for marking errors, all words misspelled should be written accurately several times. While this is being done some pleasant occupation should be found for the children who have no errors, and the teacher should go round the class glancing at each exercise, and more than glancing at the exercises of children likely to have many errors.

A note should be made of the words misspelled, and after a few days they should be dictated again, for it must be remembered that memory impressions are deepened by interest or by repetition, and, as spelling cannot often be made interesting, repetition is essential.

WRITING

PROGRESS in writing is evident at a glance, and parents generally are competent to judge of it ; whereas progress in other subjects can be ascertained only by careful periodical examinations, which many parents are neither able nor willing to make. The average parent's estimate of a school, therefore, rests chiefly on the success with which writing is taught in it. And the ground of the estimate, though narrow, is firm, for the character of the writing is a sure sign of the character of the teacher. If there are nearly as many styles of writing as there are pupils, and most of the styles are bad, the teacher must be wanting in industry, or method, or the power of enforcing his will ; and, on the other hand, if the children all write one style, and write that well, the plan must be good, the instruction skilful and persevering, and the discipline effective. There is no subject where success is so certain to follow intelligent effort, because writing is largely a mechanical exercise, and the dullard, who fails in subjects making greater demands upon the intellect, has in it an equal chance with the brightest—in fact, the best writers are often found in the lower part of a class.

A school judged by the pupils' writing

Before beginning the first lesson, every teacher must decide (unless the decision be made for him by authority)

Preliminary questions

1. What style of writing shall be taught.
2. Whether, in the earlier stages, slates shall or shall not be used.
3. Whether, after the earlier stages, books with engraved

headlines shall be used, or all copies be set on the blackboard.

1. The same style must be taught throughout the school, and if one department be fed from another the same style should be taught in both departments, otherwise the unfortunate pupils, having to learn a new style on each promotion, will be utterly bewildered, and end by acquiring a style of their own, compounded of the worst features of all the others. It has been objected that to insist on uniformity is to destroy the pupils' individuality. The objection would be weighty if true, because it is the teacher's duty to cultivate individuality. But it is not true: there is as much character in the writing of old scholars from schools where a particular style is enforced, as in the writing of old scholars from schools where every one is a law unto himself; the only difference is, that in one case the character is expressed in letters that are easy to write and pretty to look at, while in the other it is expressed in a scrawl. To be consistent the objectors should go further and say that the individuality of the pupil is destroyed by insistence on uniformity in pronunciation, in spelling, or in the Multiplication Table.

Style must be uniform

Assuming, then, that the same style is to be taught throughout a school, what style shall it be? The answer depends on four considerations—legibility, speed, beauty, and health.

Considerations which should influence choice of style

a. The object of writing being to make records for ourselves, or to communicate with others, it is foolish to do the one and discourteous (it might be foolish also) to do the other in letters which cannot be read with ease.

b. If legibility were the sole consideration, all the letters would be printed. But printing, involving as it does the frequent lifting of the pen, would be tedious, and we are willing to sacrifice the greater legibility for the sake of the greater speed.

c. Of two styles which can be read and written with equal ease, that should be chosen which is the more pleasant to the eye.

d. Finally, though a style combined legibility, speed, and beauty in a higher degree than any other, it should not be adopted if it necessitated or had a tendency to induce a position of the body or the eyes dangerous to health.

Slope

Applying this fourfold test, the teacher has, first of all, to decide on the slope of the down strokes: shall they incline backward, be vertical, or incline forward?

The fact that the backward slope has never formed the basis of any system, and that it is very rarely employed, though not conclusive, raises a presumption against it. On every point, however, it stands condemned. It certainly is not so legible as vertical writing, and few will maintain that it is so legible as the forward slope; it is inferior to both in beauty and in the rapidity with which it can be produced; and, as it compels bending the right side towards the desk, it gives the spinal column a twist, and exercises the two eyes unequally.

The choice therefore lies between the vertical down stroke and the forward slope. The vertical style is unquestionably the more legible. It is also the more hygienic, for it compels sitting parallel to the desk, with both eyes at the same distance from the work, whereas the other compels sitting with the left side towards the desk, and is therefore open to the same objection as the backward slope.

With regard to the remaining points—beauty and rapidity—opinions are divided. The : is a question of taste rather than of argument. The second can be tested by experiments. The fact that the loops are longer in sloping than in vertical writing does not necessarily prove that they take longer to make, for long lines in certain directions can be made more easily than shorter lines in other directions—a very important consideration in deciding the rapidity of rival systems of shorthand.

There is one other consideration, comparative difficulty in teaching. It is easy for the teacher to make children understand that the down strokes are to be vertical, and not hard for him to insist that they shall be so; but as the power of recognising any angle except a right angle is exceedingly uncommon, it is hard for the teacher to make children understand that the down strokes are to be at an angle of, say, 75 degrees, and practically impossible for him to insist that they shall be so. Even engravers cannot always maintain the same angle, the slope in some of the series of copy-books on the English market varying as much as 20 degrees.

Varieties of the same style

Having decided in favour of upright or of sloping writing, the teacher has next to decide which of the many styles of it he will adopt. Shall the letters be high in proportion to their breadth, or broad in proportion to their height—in other words, shall they be based on the circle or the ellipse? Shall the down strokes be thick

---

Value the admonitions.

Knowledge is useful.

Cr., is an Abbreviation.

Zodiac - a broad circle.

Right onward to the golden

[1] The examples which follow are taken from various English copy-books

Charles Kingsley, novelist.

Jealous endeavours

Keep good company and be

Imitate carefully every word

Revolution round the Sun

The ability to write

Good things go into

Natives of North America

Riga exports hemp

Good Writing should

A religious Sect dwelling in

in comparison with the up strokes? Shall the junctions be at the bottom, the middle, or the top? Shall the writing be continuous, or shall the pen be lifted at the end of every stroke? Shall there be wide or narrow spaces between the letters of the same word? Shall the tall letters be made with or without loops? How far shall the tall letters go above or below the line? What shall be the shapes of the capital letters, and if a small letter has two shapes, which shall be employed? Shall text, half text, and small hands be taught, and if so, what shall be the size of each? And if a sloping style has been chosen, what shall be the amount of the inclination? These are some of the questions which every one who would succeed as a teacher of writing must answer for himself. Respecting the answers to some of them a few words are added.

Continuous writing

While children should always be required to write legibly, they should be so taught that they will ultimately write quickly also. This implies that they should from the first be trained to write as many letters as possible without lifting the pen, and that it is unwise to adopt a style which necessitates the lifting of the pen twice in the letter *m*.[1] The crucial letter is *o*, for a good many styles which admit of writing *i*, *u*, *m*, *n*, *l*, *h*, &c., continuously, require *o* to be begun with an upward stroke on the right side, and consequently require the pen to be lifted before it, and the four letters of which it is an element, *a*, *d*, *g*, and *q*.

Loops

In text (or large) and half text (or round) hands, *b*, *h*, *k*, and *l* are generally written without loops above, and *f* without the loop below the line, the loops being introduced in small hand. There seems no good reason for teaching a form which ceases to be used as soon as it is learned,

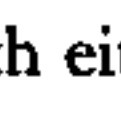
[1] From the fact that the junctions appear to be made near the top it does not necessarily follow that they are really made The hook joining the second stroke of the letter *m* to the first may *begin* at the bottom

especially when the long straight stroke is no easier to write than the loop.

Forms

The same remarks apply to the forms  and  which are generally abandoned in favour of  and  There is no conclusive argument in favour of either form of *r* and *t*; but that which is to be written at the end should be written from the beginning.

With the forward slope the choice between  and  is purely a matter of fancy; in vertical writing the second is the better form, as the down stroke of the first cannot be upright.

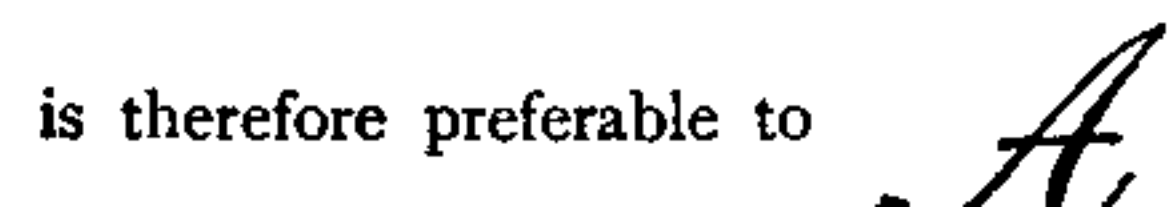
With either style  seems preferable to .

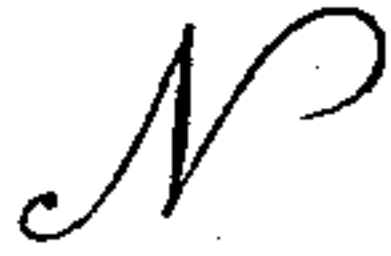
Lengths

For letters above the line many teachers have four heights, (1) *p*; (2) *t*; (3) *d*; (4) *b, f, h, k, l*; and for letters below the line two lengths (1) *p, q*; (2) *f, g, j, y, z*. In current writing there is but one length below, and also but one length above, except for *p*, and the advantage of having more than one length in 'copy-book writing' is not apparent.

Forms of capitals

With the exceptions indicated, there is for each small letter one recognised form; but for every capital letter there are at least two forms equally sanctioned by custom. Bearing in mind that continuity is the object to be aimed at from the first, the teacher will select that form which can be written without lifting the pen.

 or  is therefore preferable to 

 to , &c. Where possible also that form will be selected which admits of a small letter being joined to it without lifting the pen. The *C* in  is therefore preferable to that in  . If the upright style be adopted  and  are preferable to  and  which cannot be written vertically.

Another preliminary question is, whether the children shall begin, as in Mulhäuser's system with large hand, or as in Jacotot's, with small.[1] Certainly not with small, for size gives distinction and character, and young children's fingers and eyes need training before they are fit to deal with the minute. And certainly not with large, for that also is beyond the power of young children. There are many adults who could not with one motion draw a perfectly straight line an inch and a half long, such as Mulhäuser's *f* demanded. As text therefore cannot be taught at the beginning, and is not required at the end, and does not appear to have much practical or educative value at any intermediate stage, a valid reason for teaching it at all is hard to find.

Earliest 'hand'?

[1] There is no standard authority for the altitude of the body of the letter in the three 'hands.' In Mulhäuser's system it was, for large or text, seven-sixteenths of an inch, and for half text or round seven-thirty-seconds of an inch. According to the regulations of the English Education Department large or text has an altitude 'not less than three-eighths of an inch.'

2. Shall slates be used? Slates were first used by Joseph Lancaster in the school which he opened in Belvedere Place, Borough Road, London, in the year 1804. At that time there were no State grants or School Board rates, and the education of the poor to be made possible must be made cheap; but now, when efficiency is to be considered before economy, it is time that slates should go the way of Lancaster's other money-saving devices, one teacher for a thousand pupils, and a reading card for each class instead of a reading book for each child.[1] Writing on slates is supposed to prepare for writing on paper, but what it chiefly prepares for is a wrong method of holding the pen, and the belief that mistakes can be rubbed out with the finger. If slates are used they should always be framed; one side should be uniformly ruled,[2] and there should be some plan of cleaning them less objectionable than the unsightly and insanitary plan still tolerated in so many schools, of spitting on them.

Slates or paper?

3. Whether slates or paper be used, the writing must be taught at first by means of the blackboard, because, if the copy be not produced in the presence of the children they will not know how to set about imitating it, and they require far more drill in the elements than any series of

Engraved headlines?

[1] After all it may be doubted whether there is much money saved by the employment of slates. The original cost is considerable; broken ones have frequently to be replaced; pencils and pencil-holders wear out quickly; and sponges do not last long. On the other hand, paper, pens, and ink are now very cheap, and the younger scholars can use up the blanks at the end of the examination papers of the elder.

[2] The following is suggested as a method of ruling slates or paper for beginners:—

1. A thin line.
2, 3. Thick lines. } Repeat as often as the slate or page will allow.
4. A thin line.

The distance of the lines apart will depend on the 'hand' to be taught. The body of the letters will be between 2 and 3, loops will reach 1 above and 4 below. The space between 4 and the second 1 will keep the downward loops of one line from touching upward loops of the next.

engraved books allows. But whether, when they have mastered the elements and learned how to hold their pens, they should continue to be taught by means of the blackboard only, or should be given books with engraved headlines, is a much debated question.

The advantages of the former plan are :—

a. The copy, as already stated, is produced in the presence of the children, so that they can see how the letters are made. It is from want of seeing this that children taught from copy-books alone often begin small *o*, capital *I*, and other letters in the wrong place.

b. Collective teaching is rendered possible. Though all the pupils of a class start on a new book together, absence, fresh admissions, and divers causes soon divide them. When nearly every child is doing a different copy, nearly every child is committing a different mistake, and needing separate instruction. Unless the class be very small, there is no time for the teacher to give the amount of individual attention thus demanded. When the copy is set on the blackboard, every child is shown how the letters that he is to write are made, difficulties are smoothed away in advance, and by correcting the mistakes of one publicly, the teacher saves himself the necessity of having to correct the mistakes of twenty privately.

c. Perfect gradation is rendered possible. The compiler of a copy-book tries to provide for the wants of average pupils, but a teacher has to provide for the wants of his own. The compiler may have given one page to the treatment of a particular difficulty, the teacher may find a page too much or half a dozen pages too little.

The advantages of the plan being so very great, it might be recommended without hesitation but for one drawback, the difficulty of obtaining good and uniform copies. Some teachers write badly on the blackboard, and those who write well do not all write one style. A pupil, therefore, through changes of teacher or through promotion, may at one time be

set a copy unworthy of imitation, and at other times copies worthy of imitation in themselves, but inconsistent with each other.

With upright writing this drawback is less than with slanting, for, though the teacher may not be quite capable of drawing vertical lines himself, he can make all the children understand clearly that he wants such lines, and may make a good many draw them. When the system leaves nothing to chance, when the elements are well defined, when the length, breadth, and slope of each letter are all thought out, the model may sometimes fall somewhat short of perfection, but the very perfection of an engraved headline may sometimes make children despair of being able to imitate it.

The advantages and disadvantages of engraved headlines need not be stated at length. They are implied in the statement of the disadvantages and advantages of blackboard teaching. The ultimate choice, however, ought to be not between the blackboard and engraved headlines but between the blackboard and engraved headlines supplemented by the blackboard to show the formation of the letters and correct typical errors.

If the decision be in favour of the latter, great care should be exercised in the selection of a series of copy-books. The

Choice of copy-books

series selected should be based on some intelligent and intelligible principle; the principle should be applied consistently, and should accord with the views of the teacher on the various debatable points discussed in the preceding pages.

Whatever may be the answers to the preliminary questions certain remarks are applicable.

1. For purposes of teaching the letters should be grouped

Grouping of small letters

according to a well-reasoned plan. If, for instance, it be decided that tall letters are the most difficult to make, and that there are to be no loops above the line, the following classification is defensible :—

i. The down stroke.
ii. Down stroke with loop following, **i, u.**
iii. Down stroke with loop preceding, 'pot hook,' **n, m.**
iv. **c, e, o, a.**
v. **r, v, w.**
vi. **s.**
vii. **x.**
viii. **t, l, b, p, h, k.**
ix. **d, q, g.**
x. **j, y.**
xi. **f, z.**

If the long letters are not to come at the end, **l, t, b** will be added to group ii, **p** and **h** to group iii, **j, y, d,** and **q** to group iv.

If the long letters are to have loops and need not come at the end, the following classification is defensible :—

i. As before.
ii. As before, with the addition of **t.**
iii. As before, with the addition of **p.**
iv. **c, e, o.**
v. **a, d, q.**
vi. **l, h, b.**
vii. **r, v, w.**
viii. **j, y, g.**
ix. **s, x.**
x. **f, k, z.**

As soon as the letters have been taught they should be combined—in words if possible. With the first classification, when groups i and ii have been taught, *in* and *ui* should be combined ; and when group iii has been taught, *in*, *im*, *ni*, *mi*, *un*, *um*, *nu*, *mu*, *mun*, *mnu*, *minim*, *minimum*, &c., should be written.

The grouping of the capitals will depend on the forms adopted, but by the time that the child has learned to write all

the small letters and their combinations he will have obtained such a command of fingers and pen that the particular order of the capitals will be a matter of comparatively little moment. The following grouping is suggested where the simplest forms are adopted :—

Grouping of capitals

i. **N, M.**
ii. **V, U, W, Y.**
iii. **O, A.**
iv. **C, G.**
v. **E.**
vi. **P, B, R.**
vii. **I, J.**
viii. **T, F.**
ix. **S, L.**
x. **D.**
xi. **H, K.**
xii. **Q, X, Z.**

2. For the earliest exercises on paper lead pencils should be used and not pens. This postpones two difficulties—the management of the points of the nib, and the management of the ink.

Lead pencils

3. Good writing is absolutely impossible unless the pen be held properly, and good writing under healthy conditions is impossible unless the body, arms, and head be rightly placed also. Children must therefore, from the very beginning, remember and understand a long set of rules, and the best way to make them remember and understand is to make them practise. If the instructions be given in a mass they will simply produce bewilderment ; they must be given singly, and the teacher must see that each one is obeyed by the whole class before he gives the next. Every lesson should begin with pen-holding drill till the children not only

Holding the pen

have acquired the habit of doing it automatically.[1] The following series of commands is suggested :—

a. Take the end of the holder between the finger and thumb of the left hand.
b. Turn the back of the nib upwards.
c. Place the tip of the forefinger of the right hand on the back of the holder, a little way above the lower end of the metal.
d. Place the second finger of the right hand beside the holder, with the metal resting a little over the end of the nail.
e. Keep the right thumb nearly straight and place the right part of the tip under the metal. [The holder should be higher than the highest joint of the first finger. If it falls below, the flat ot the thumb has been placed on it instead of the side of the tip.]
f. Remove the left hand.
g. Bend the third and fourth fingers of the right hand slightly.
h. Rest the right forearm (about half-way between the elbow and the wrist) flat on the edge of the desk.
i. Rest the hand on the tip of the little finger (and if necessary the tip of the third finger also). The upper end of the holder will now point to the elbow. The right side of the palm should never be allowed to touch the desk.
j. Body parallel to the edge of the desk but not touching it.
k. Paper parallel to the edge of the desk, with the left edge opposite to the middle of the chest, and the line to be written just under the point of the pen.

[1] In the early lessons under Mulhäuser's system the children did not write or even sit. While standing around the blackboard, they were taught

l. Right and left elbows three or four inches away from the sides.

m. Fingers of the left hand above the line to be written (to steady the paper).

n. Heads up.

In the early lessons this or some other drill having the same purpose should be repeated again and again, the main object then being not the production of many lines of writing but the formation of a good habit. When the habit is in a fair way of being formed, the drill should be gone through once at the beginning of each lesson ; when the habit has become automatic, the drill may be omitted altogether.

Though the orders are given collectively, the teacher must see that they are obeyed individually, and he will often be compelled to place the fingers &c. in the right position.

4. Some teachers act as if the Writing lesson were intended to give them a little rest, and others as if it were intended to give them a little leisure for sending notes to absentees, or doing other necessary work. This is a fatal mistake, for no lesson requires greater watchfulness and activity.

Supervision necessary

5. After the pen drill, the formation of the letters to be copied must be shown on the blackboard ; then all mistakes must be corrected. If only two or three pupils make a mistake, it can be corrected on their books. The teacher should write the wrong letter several times in pencil and have it traced. All corrections should be made with the utmost neatness, for children cannot be expected to take pride in a page defaced by the teacher.

Corrections

6. If several children make the same mistake the attention of the whole class should be called to it. The teacher should write the wrong letter on the blackboard, exaggerating the fault, and then ask what is wrong with it. He should afterwards show how the letter is formed, and make some of the

children who were wrong copy his model on the blackboard. Sometimes a useful lesson may be given without paper, the teacher calling on some of the worst and some of the best writers to make letters or words on the board, the rest of the class criticising.

7. For every mistake there is a reason. For instance:

a. If the letter is badly formed, the teaching has not been clear, or the children have not been attentive.

Causes of mistakes

b. If the stroke has ragged edges, there is more pressure on one leg of the nib than on the other.

c. If the strokes are not parallel, there has been a change in the position of the body, or the hand, or the paper.

d. If the down stroke is thin, and the curve at the end of it thick, the pen is held sideways.

e. If the down strokes are of varying thickness, there has been varying pressure on the pen.

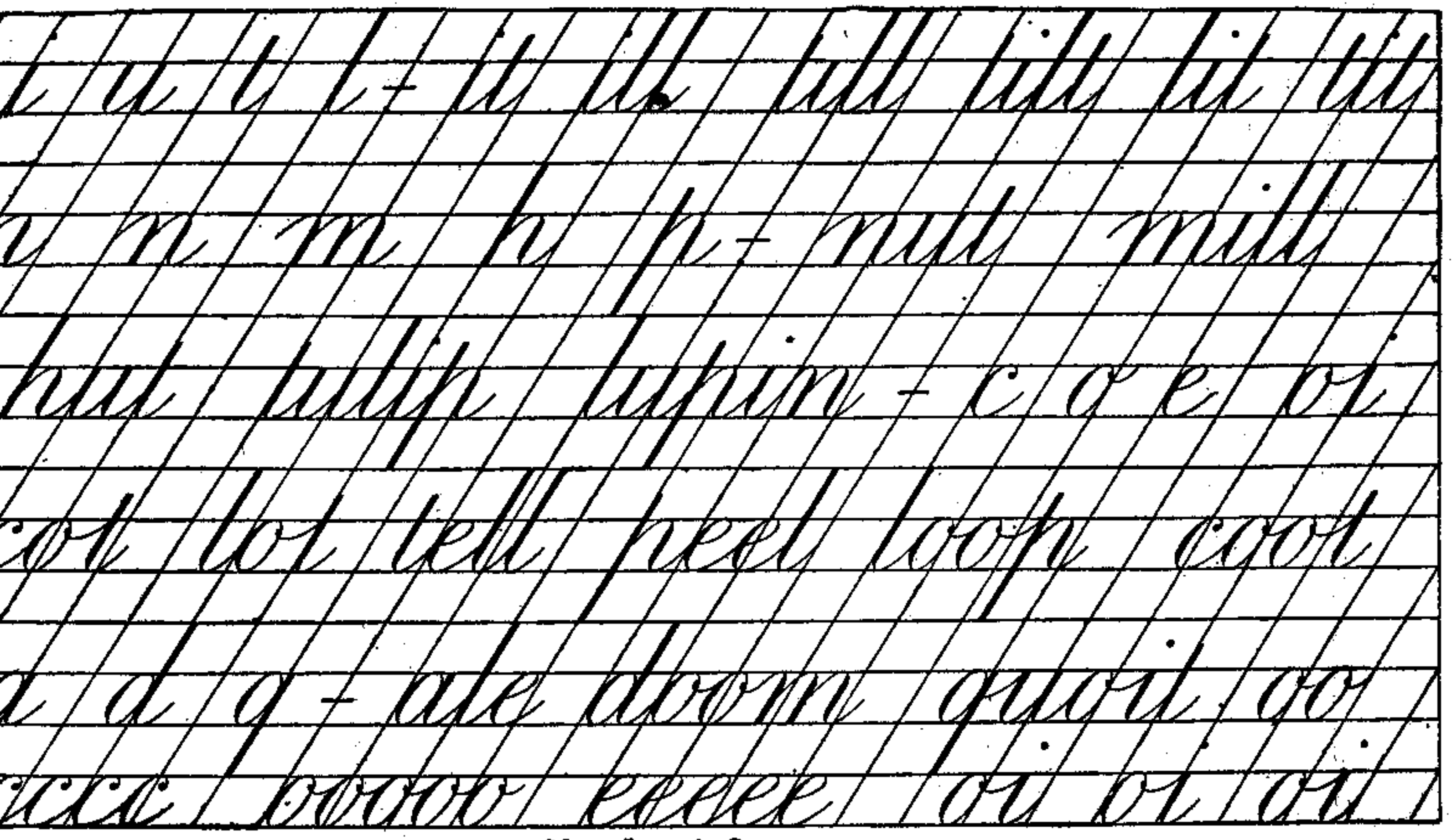
To correct the mistake is not enough, it should be prevented by removing the cause.

8. In the lower classes the teacher should regulate the pace. It is not well to fix so many minutes for each line, because if, through an error of judgment, the number is too small, the children have to hurry, and if it is too large, they have to waste time. The better way is to say 'First line'; then, when the majority of the children have finished, to say 'Second line,' &c.

Pace

9. What was said of emulation in a previous chapter applies to writing as to all other lessons. The children should always be encouraged to strive to excel. When the last line has been written, the teacher should go round the class, assign a mark ('excellent,' 'very good,' 'good,' &c.) to the work just done, and make all who have reached a certain standard stand. Occasionally there should be competitions, in which the whole class is arranged in order of merit, and the best copy is posted up. By such means carelessness

Emulation



MULHÄUSER'S SYSTEM.

be treated like any other breach of order. The natural punishment for the child who has written badly is to detain him and make him write well—though, as a general rule, it is unwise to set writing for punishment.

10. There is a 'personal equation' in writing as in other things. Hence a pen which has been used by one hand fails often to suit another exactly, and it is a good plan to let each pupil have his own pen. The nibs, however, should be uniform, and selected by the teacher.

Pens

11. When the lesson is over, the pen should be carefully cleaned—not on the pupil's clothes, or on his neighbour's. Where slates are used, each child has (or ought to have) a sponge, and the pen can be wiped on this. If slates are not used each child should be required to have a pen-wiper. Another method is to have the pens placed, as collected, point downwards in a jam pot or jar containing about half an inch of water, and then to have them wiped by a monitor.

Cleaning pens

12. There should be a piece of blotting paper in every copy-book, and the children should be made to employ it for two purposes only—to lay under the hand in order to keep the paper clean, and, when turning over the leaf, or at the end of the lesson, to dry the last lines written. The habit which some children have of employing the blotting paper for every few words is due to the carelessness of the teacher, or his inability to exact obedience. 'Smudging' is due to ignorance of the proper method of using.

Blotting paper

APPENDIX

MULHÄUSER'S SYSTEM OF TEACHING WRITING

Mulhäuser's method, though now little employed, deserves some mention as a serious and successful attempt to reduce the teaching of writing to a system. Mulhäuser, being appointed

inspector under the Geneva Commission of Primary Schools, found the writing very unsatisfactory, and came to the conclusion that it would continue to be very unsatisfactory, till the custom of imitating a complete copy was abandoned for something which deserved to be called a plan of instruction. Recognising that children cannot be expected to reproduce a complex whole till they have learned to reproduce the simple constituents, he carefully resolved the small letters into the following elements :—

1. The right line, down and up.
2. The curve, down and up.
3. The loop, down and up.
4. The crotchet (at the end of v, &c.).

The paper was ruled with horizontal lines crossed by parallel lines at an angle of sixty degrees. These rhomboids regulated the length, breadth, and slope of each letter, so that nothing was left to caprice or chance.

The small letters were taught in the following order :—*i*, *u*, *t*, *l*, *n*, *m*, *h*, *p*, *c*, *o*, *e*, *a*, *d*, *q*, *j*, *g*, *y*, *b*, *f*, *r*, *v*, *w*, *k*, *s*, *x*, *z*. (The capitals were not analysed.)

The teaching was divided into two parts, 'the study at the circles' and 'study at the desks.' In the first the elements were taught orally and illustrated on the blackboard ; in the second came the actual practice on paper.

ARITHMETIC

EDUCATIONAL VALUE

ARITHMETIC is a science setting forth the general properties of numbers, and an art showing the application of those properties to computation. Studied as a science it is an admirable training in abstraction, judgment, and reasoning. Practised as an art it enters into the daily life of nearly every civilised being, from the boy who sells matches in the street to the minister who controls the finances of a nation. It has, therefore, two incontrovertible claims to form part of any scheme of education. So strong did Plato consider one of them, that in his 'Republic' he advocates making the teaching of Arithmetic compulsory. He somewhat disparages the art, as being useful to merchants and shopkeepers only, but holds the science to be worthy of the highest powers of the philosopher.

Arithmetic a science and an art

We hold the science to be worthy of the highest powers of merchants and shopkeepers also, and of all who have dealings with merchants and shopkeepers. To treat Arithmetic as nothing more than a body of rules is a grave error, for the rules themselves can be applied with greater certainty and intelligence when the reasons for them are understood,[1] and the main business of teachers is to produce not 'lightning calculators,' but men and women with symmetrically developed minds.

[1] 'En arithmétique surtout comprendre c'est apprendre.'

Arithmetic is of extreme value as a mental discipline because :—

Its value as a mental discipline

1. It deals with pure abstractions.

2. Its operations are the simplest examples of perfect deductive reasoning ; while under skilful guidance the learning of the rules is a good exercise in inductive reasoning.

3. It is absolutely independent of every other science.

4. The processes can be arranged in a logical chain, each link firmly connected with that which goes before and with that which comes after.

5. It induces a habit of concentrated attention. Allowing the thoughts to wander for an instant is like letting go the crank of a windlass ; the work must be begun all over again. 'More haste less speed' does not apply to computation.

6. It induces a habit of accuracy. If there is a single mistake made all subsequent (and, indeed, all previous) labour is wasted.

7. It creates self-confidence. In many departments of thought there is no immutable standard ; there is room for difference of opinion, but in Arithmetic a result is absolutely right or absolutely wrong, and the youngest child who reasons correctly and computes correctly may defend his answer against a senior wrangler.

8. It teaches to distinguish between what is essential and what is accidental. One problem may take a thousand forms, but the student must recognise the identity under every disguise.

ABSTRACTION

Abstraction

Of the foregoing reasons the weightiest is the first : Arithmetic is the simplest and most perfect of the means readily available for training children to deal with abstractions, but in order that the means may be employed

to the greatest advantage, teachers should consider how abstract ideas are formed.[1]

Methods must be natural

To be successful, education must follow the method of nature. When dealing with things it must, therefore, proceed from the individual to the species, from the species to the genus ; and when dealing with qualities it must proceed from the quality with the thing to the quality without the thing, and from the individual quality to the general.

Applying this psychological truth to Arithmetic, we see that number must first be presented in association with actual objects, then in association with the memory or idea of objects, and finally by itself as an abstraction. Children must, for instance, first learn by actual counting and handling that 4 marbles + 3 marbles = 7 marbles ; 4 cubes + 3 cubes = 7 cubes ; 4 sticks + 3 sticks = 7 sticks ; 4 marbles − 3 marbles = 1 marble ; 4 cubes − 3 cubes = 1 cube ; 4 sticks − 3 sticks = 1 stick. Then, without having the objects actually present, they must realise that 4 cows + 3 cows = 7 cows ; 4 horses + 3 horses = 7 horses ; 4 birds + 3 birds = 7 birds ; 4 cows − 3 cows = 1 cow ; 4 horses − 3 horses = 1 horse ; 4 birds − 3 birds = 1 bird. The next step will be to understand that $4 + 3 = 7$; $4 - 3 = 1$, and the last, when Algebra is studied, to understand the general formulæ, $a + b = c$; $c - a = b$; $c - b = a$.

From objects to abstractions

In this as in other respects the development of the individual has its counterpart in the development of the race. 'An abstract conception is something quite foreign to the essentially primitive mind. . . . The savage can form no mental concept of what civilised man means by such a word as *soul*, nor would his idea of the abstract number 5 be much clearer. When he says *five*, he uses, in many cases at least, the same word that serves him when he wishes to say *hand* ; and his mental concept when he

In the race as in the individual

[1] See p. 9.

says *five* is of a hand. The concrete idea of a closed fist or an open hand with outstretched fingers is what is uppermost in his mind. . . . He sees in his mental picture only the real material image, and his only comprehension of the number is "these objects are as many as the fingers on my hand." Then in the lapse of the long interval of centuries which intervene between lowest barbarism and highest civilisation the abstract and the concrete become slowly dissociated the one from the other. First, the actual hand picture fades away, and the number is recognised without the original assistance furnished by the derivation of the word. But the number is still for a long time a certain number of *objects*, and not an independent concept. It is only when the savage ceases to be wholly an animal, and becomes a thinking human being, that number in the abstract can come within the grasp of his mind. It is at this point that mere reckoning ceases and Arithmetic begins.'[1]

Number-names as illustrations of concrete counting

An examination of the number words of any language will prove the concrete nature of primitive calculations,[2] for it will show that the counting was done in series, with the fingers of one hand (quinary), with all the fingers (decimal), or with all the fingers and toes (vigesimal), and that in the same language there are often traces of more than one base. The fact that the Roman symbols, *IV.*, *VI.*, *VII.*, and *VIII.* are formed from the symbol for five, suggests a quinary reckoning, and if, as asserted, the symbol for ten is formed by the junction of an upright and an inverted *V.*, the suggestion gains strength. The English and the Latin words for the multiples of ten (*twenty*, *viginti*; *thirty*, *triginta*; *forty*, *quadraginta*, &c.) point to decimal counting on the part of the Teutons and the Romans. The Kelts reckoned by scores. In Welsh twenty is *ugain*, forty *deugain* (2 × 20), sixty *triugain* (3 × 20), and eighty *pedwar-ugain*

[1] Conant, *The Number Concept*, p. 72.

[2] The word *calculation* itself (from *calculus*, a pebble) is highly significant. So is *digit* (from *digitus*, a finger).

(4 × 20) ; but thirty is *deg-ar-hugain* (10 + 20), fifty *deg-a-deugain* (10 + 40), seventy *deg-a-thriugain* (10 + 60), and ninety *pedwar-ugain-a-deg* (80 + 10). Is it because French is the Romance language of a Keltic people that we have in it a mixture of decimal and vigesimal? *Vingt* (20), *trente* (30), *quarante* (40), *cinquante* (50), *soixante* (60) are decimal, but *soixante-dix* (60 + 10), *quatre-vingts* (4 × 20), and *quatre-vingt-dix* (4 × 20 + 10) are clearly vigesimal. In Welsh the numbers from 15 to 19 indicate a quinary system, fifteen being *pym-theg* (5 + 10), sixteen *un-ar-bym-theg* (1 + 5 + 10), thirty-five *pym-theg-ar-hugain* (5 + 10 + 20), thirty-six *un-ar-bym-theg-ar-hugain* (1 + 5 + 10 + 20), &c.

These facts have a practical application as well as an historical interest, in that they bring the experience of the race to confirm the need of making the teaching of Arithmetic start from the concrete ; and, furthermore, in that they appear to countenance the habit of young children who reckon with the aid of their fingers. There is no reason for the unqualified disapprobation with which some authorities regard this habit. The early lessons, unquestionably, ought to be based on actual objects, and why should pebbles, spills, blocks, marbles, pencils, beads, and many other things be allowed while fingers, literally the handiest of objects, are sternly forbidden?

Application

Those who condemn the habit perceive only half the truth. Objects at first are useful and essential, but there should come a time when they are useless and harmful. They are useful and essential in helping the pupil to proceed from the perception of a number of things to the abstract idea of the number ; they are useless and harmful when they confine him to concrete after he has attained the power of forming abstract ideas, and when they retard calculation by encouraging him to treat a number as separate units instead of as a whole. The only valid objection to the use of fingers (granting that the time for ceasing the use of objects has not come) is that they are too readily available, too handy;

Counting on fingers

and children are consequently tempted to resort to them long after the habit of dealing with numbers as abstract aggregates should have been formed.[1] There is the same objection to strokes.

COUNTING

Counting and memory

The ability to count a little is an indispensable preliminary to even the simplest lessons in Arithmetic. As there is no inherent reason why three should precede four or eight come after seven, the order of the numerals (like the order of the alphabet) is purely arbitrary, and therefore purely a matter of memory. But it should be memory of words *and* ideas, not of words alone. A child who can repeat the numerals without having clear concepts of them has made no further advance towards Arithmetic than a child who can repeat but cannot recognise the letters of the alphabet has made towards Reading. Memory impressions are deepened by interest,[2] and if only the *names* of the numerals were to be learned, a skilful teacher would make the operation interesting by using actual objects. But when, in addition to the names, the corresponding ideas have to be learned, the objects which in any case would be useful become absolutely indispensable.

From the beginning the counting should be associated with the analysis and synthesis of the numbers counted, according to Grube's (or some better) method. If this be done, very few names will be mere matters of memory. A child, for instance, who has realised that thirteen[3] is $3+10$, fourteen $4+10$, fifteen $5+10$, &c., will have no difficulty in remembering the words, and the order of the words, *thirteen, fourteen, fifteen*, &c. Similarly if he has realised that twenty is 2×10, thirty 3×10, forty 4×10,

[1] I have seen in an examination candidates of twenty counting with their fingers.

[2] 'Wo der Antheil sich verliert, verliert sich auch das Gedächtniss' (Where interest is lost, memory is lost also).—*Goethe.*

[3] Etymologically the *e* (= *en* or *an*) of *eleven* is *one*, and the *tw* of twelve *two*, but this could not be made intelligible to young children.

&c., he will have no difficulty in remembering the words and the order of the words *twenty*, *thirty*, *forty*, &c.

EARLY LESSONS

The old method

The traditional method of teaching Arithmetic (which assumed that a child somehow learned to count out of school) began by setting long 'sums' in Simple Addition from a book. When, however, the laws according to which the young mind grows and develops came to be studied, this method was seen to be at variance with them and was discarded. Skilful teachers now prepare the soil before sowing the seed; the first formal lesson on rules is preceded by a long series of exercises intended to produce clear concepts of the smaller numbers, and facility in computation with such numbers.

The Grube method

The best known system of exercises was devised by August Wilhelm Grube.[1] Improved by subsequent thinkers, it is now extensively used in Germany; it has been adopted in a good many American schools, and its principles, if not its details, have been silently incorporated in several English text-books.

Number and language

By this method 'the number lesson must also be a language lesson. It is of the utmost importance that the child give his answers in complete sentences, plainly spoken, with clear accent. Great importance must be attached to the explanation of every example from the outset. So long as the child is not master of the language

[1] Born in the Hartz Mountains in 1816, he was trained as a teacher and taught for a little while in a school. He then became a private tutor and a writer on education. He died in 1884. His *Leitfaden für das Rechnen in der Elementarschule nach den Grundsätzen einer heuristischen Methode* (Guide for Reckoning in the Elementary School according to the Principles of an Inventive Method) was published in 1842. There are several translations or adaptations of it in use in American schools. The illustrations

necessary to express the operations performed with the number, he is not master of the representation or idea of the number itself—he does not know the number . . . So far as possible the pupil must be allowed to speak for himself and not depend upon half the answer being put into his mouth by the teacher. . . .

'The uniform objects to be used are the fingers and blocks; for blackboard or slate use simple straight lines. Too many kinds or objects must not be used. . . . The mental comprehension of number is disturbed if things which awaken other ideas or desires are employed. The mind is capable of only a certain amount of interest, and when this interest is wholly or partly withdrawn, but little can be expected for the particular thing at hand. For this reason, while teaching the abstract number, there should be but few things shown the child, and these should be simple and uniformly the same. The best things are blocks, which awaken little interest in themselves, and these must be the chief objects used throughout. . . . Apples, nuts, &c., which awaken desire, stimulate the appetite, and thus divide the attention, must not be used as objects in teaching number. All the interest which the child gives to the colour, taste, &c., of objects is just so much lost to number. . . .

The objects to be used

'The work of teaching a number is not complete until the child has been taught to make neatly and with despatch the figure which stands for the number.'[1]

Figures

Of the four years mapped out by Grube, the first is to be spent on the numbers 1—10, the second on the numbers 11—100, the third on the numbers 101—1,000, and the fourth on Simple Fractions. As an illustration of the method the lesson on the number **2** is summarised.

The course

The teacher begins by holding a block in each hand, asking

[1] Seeley, p. 17.

how many he has in each. He then brings the hands together slowly and asks what he has done. The pupils answer, 'You put one and one together.' The operation is repeated till the children can describe it fully and accurately, after which it is represented on the blackboard by means of strokes, and the figure 2 is taught.

Lesson on the number 2

In the next step the teacher, showing two blocks together, asks—

How many have I?
Pupils.—You have a two.
T.—How many twos have I?
P.—You have one two.
T.—How many times have I two?
P.—You have two one time (or once).
T.—How many does one two make?
P.—One 2 makes 2.

In the next step the teacher holds the two blocks together and asks what he has. He then slowly takes away one block and asks what he did.

P.—You took one away from two.
T.—And what does that leave?
P.—It leaves one.

The operation is then represented on the blackboard, first concretely, and then '2 less 1 leaves 1.'

The teacher again shows the two blocks and takes one away, asking—

What have I done?
P.—You have taken one away.

He then takes away the other one and asks

Now what have I done?
P.—You have taken one away again.
T.—How many times have I taken one away from two.
P.—You have taken one away two times.
T.—Then how many ones are there in two?
P.—There are two ones in two.
T.—Now we will write that on the board. 'In 2 there are two 1's,' or we may say, '2 divided by one makes 2.'

The next step consists of such exercises as—

What number is found twice in 2?
Of what number is 2 the double?
Of what number is 1 the half?
What number must I double in order to get 2?
I know a number which has 1 more than 1 : what is it?
What number must I add to 1 in order to get 2?

The lesson ends with problems of every kind involving 2.

During the first year, whatever the number to be taught, it is 'measured' by all the preceding numbers in succession.

Measuring

The following tables give a summary of the measuring process as applied to the number 5 :—

a. With 1

○	1	
○	1	1 + 1 + 1 + 1 + 1 = 5
○	1	5 × 1 = 5, 1 × 5 = 5
○	1	5 − 1 − 1 − 1 − 1 = 1
○	1	5 ÷ 1 = 5

b. With 2

○ ○	2	2 + 2 + 1 = 5
○ ○	2	2 × 2 + 1 = 5
○	1	5 − 2 − 2 = 1
		5 ÷ 2 = 2(1)

c. With 3

○ ○ ○	3	3 + 2 = 5, 2 + 3 = 5
○ ○	2	1 × 3 + 2 = 5
		5 − 3 = 2, 5 − 2 = 3
		5 ÷ 3 = 1(2)

d. With 4

○ ○ ○ ○	4	4 + 1 = 5, 1 + 4 = 5
○	1	1 × 4 + 1 = 5
		5 − 4 = 1, 5 − 1 = 4
		5 ÷ 4 = 1(1)

The worst method of teaching is the no-method; and comparatively good results may be obtained by almost any method in which the teacher has faith. To say that the Grube method has produced good results is, therefore, no conclusive argument in its favour, especially as, where used, it has generally taken the

Value of the Grube method

place of the no-method. On the other hand, the argument that it is apparently slow is not conclusive against it. A skilful teacher will employ a slow method provided it be based on sound principles, and provided also there be no quicker method equally based on sound principles. And it is just because they contend that it is not based on sound principles that some modern thinkers [1] condemn the Grube method.

They assert the following general propositions :—

General propositions

1. Number is not an inherent property of objects. The shape, size, colour, taste, and weight of objects, and the sounds made by them are as clearly perceived by the savage that cannot count eleven, and perhaps by animals that cannot count at all, as by the ablest calculator. It is therefore clear that

2. Number is not a product of the senses alone, but of the way in which the mind deals with sense objects.

3. In arriving at an idea of number, we first perceive a vague unity or whole ; we then discriminate or recognise it as composed of distinct individuals or units. Disregarding all qualities in these, except such as are necessary to limit each object as *one*, we finally group together the like objects or units into a whole class, the sum.

4. Hence to teach number merely as a set of symbols is to leave out the objects ; while to teach it as a direct property of the objects is to subordinate thought to things.

Objections based on them

If the preceding propositions are true, the Grube method is open to the following strictures :—

1. It is based on the *observation* of things, not on the *use* of them.

2. It works with fixed units instead of with a whole quantity measured by the application of units of measurement.

3. In passing from 1 to 2, 2 to 3, &c., 'it leaves out of

[1] The case against the method is fully and ably stated by McLellan and Dewey (*The Psychology of Number*, New York : D. Appleton & Co.), whose arguments are here quoted or summarised.

sight the principle of limit, which is both mathematically and psychologically fundamental.' This is 'as sensible as it would be to make a child learn all the various parts of a machine, and carefully conceal from him the purpose of the machine . . . and thus make the existence of the parts wholly unintelligible.'

4. 'In beginning with the fixed unit one object (1), then going on to two objects, three objects, then other fixed units, there is no intrinsic psychological connection among the various operations. We *may* add, we *may* subtract, we *may* find a ratio; but addition, subtraction, ratio remain (psychologically) separate processes. According to true psychology we begin with a whole of quantity, which, on one side, is analysed into its units of measurement, while on the other these units are synthesised to constitute the value of the original magnitude; we have parts which refer to a whole, and units which make a sum. Here the addition and subtraction are psychological counterparts; we actually perform both these operations whether we consciously note more than one of them or not.'

5. The idea of number simply as a plurality of fixed units necessarily leads to exhausting and meaningless mechanical drill.

6. The facts presented, $2+2=4$, $2\times3+1=7$, &c., appeal to the memory only. They are something external to the mind's activity, something impressed upon it and carried by it, not something growing out of its own action and coming to be a habit of intrinsic mental working.

Practical conclusions

Amid this conflict of opinions the teacher may safely arrive at the following practical conclusions :—

1. There ought to be *some* method of bridging over the interval between counting and formal rules.

2. The Grube method is infinitely better than none, though not better than any.

3. In proceeding painfully from 1 to 2, 2 to 3, 3 to 4, &c., the Grube method is needlessly slow.

4. The habit of considering the number as made up of separate units is a hindrance to rapidity of calculation. The child who finds the sum of 8 and 5 by adding one 5 to one 8 must work much faster than the child who finds the sum by adding 5 ones to 8 ones.

5. Instead of beginning with 1 we should begin with such numbers as 4, or 6, or 8, which can be measured by others.

NUMERATION AND NOTATION[1]

The place-device which is the basis of the Arabic (or, as it should more properly be called, the Hindoo) system of notation presents a great difficulty to young children; but, great as it is, the difficulty must be overcome, for, till it has been overcome, written operations involving any number higher than 9 are impossible.

Difficulty

Whatever method be adopted for teaching notation the numbers from 10 to 99 will be first taught. The method which gives the teacher least and the children most trouble is to do without apparatus. The teacher rules two columns on the blackboard, and writes, *tens*, *units* at the head of them, the children copying the framework on their exercise books (or slates). Having explained as clearly as he can what is meant by *units* and *tens*, he states that any figure placed in the right column stands for units, and any figure placed in the left column for tens. He then writes in the proper columns a number, say 11, and pointing to the left figure, asks, 'How many tens have we?' Pointing to the right figure he asks, 'And how many units have we?' When he has made the children discover that the number written is 11 he tells them to write it. Other numbers

Notation without objects

[1] Numeration is the reading, notation the writing, of numbers. In French *numération* is applied to both processes, one being called *orale* and the other *écrite*.

are similarly dealt with, 10 and its multiples receiving special attention.

This method may appear simple, but, as it does not appeal to the senses, it is ineffective, and it loses sight altogether of one great end of education, the training of the mind through instruction in useful arts. The skilful and painstaking teacher will therefore employ apparatus to make the principles of notation visible. Several forms of apparatus may be bought, but the teacher can easily manufacture his own.[1] A small packing-case, divided into twelve compartments, four rows of three, will serve to teach not only notation up to 999, but also Simple and Compound Addition and Subtraction. Matches (with the ends washed off) will serve for objects—separate for the units, and in bundles of ten for the tens, and bundles of ten tens for the hundreds.

With objects

The first stage, as with the other method, will comprise the numbers 10 to 99. The box being placed on end the teacher will explain that the right compartments are for separate sticks, and the middle compartments for bundles of ten. The blackboard and exercise books (or slates) will be used and the lesson will proceed on the lines already indicated, with the very important difference that a vapoury and illusive explanation is converted into a transparent and concrete demonstration.

The method for teaching hundreds is, of course, only an expansion of the method for the tens. The apparatus need hardly be employed for numbers of more than three figures, because

Objects dispensed with

[1] In countries which have a decimal currency counters representing money form excellent illustrations of notation. In the United States, for instance, the cent would serve admirably for units, the dime for tens, and the dollar for hundreds. The method would have the double advantage of directly teaching notation and of indirectly teaching money values and compound rules. Its use in Italian schools is recommended by Signor G. Bagatta in his *Guida all' Insegnamento dell' Aritmetica.*

1. Young children should not be required to deal with such numbers.

2. Older children, understanding the principle already, will understand its further application without concrete illustration, and the concrete should not be employed longer than is necessary.

3. Objects for rendering large numbers visible must be cumbrous.

There should be frequent exercises in numeration and notation. Special attention should be paid to numbers containing ciphers, and to the writing in proper positions under each other of numbers of unequal lengths.

TABLES

How Multiplication Tables are to be committed to memory

Though the Multiplication Tables must be indelibly fixed in the memory, so that any two factors instantly suggest their product, they should be fixed not (as they too often are) by unthinking repetition of words, but by intelligent repetition of the processes employed in the construction of the tables. Children should regard the tables not as venerable formulæ to be accepted on the authority of the teacher or the book, but as a convenient statement of the results arrived at by experiment. Each table should be first made and then learned, or rather learned by frequent making. If, for instance, the three times table is to be mastered, the teacher, by means of the beads of a ball-frame or other tangible objects, makes the children discover that when two threes are added, the sum is six ; when three threes are added, the sum is nine, &c. Each result as obtained is written in tabular form on the blackboard, and when the end is reached the table, if not remembered, will be, at any rate, understood. After sufficient repetitions with objects the table can be constructed without, for there is

no reason why children properly taught cannot write any table even though they do not know it by heart.

If we grant that the method of teaching the tables by verbal repetition alone is justifiable, we must also grant that it lays upon the memory a burden twice as heavy as is necessary. Ignoring the fact that $a \times b = b \times a$, it makes two statements of every truth, treating the twelve times table as though it contained twelve new products instead of one. As usually written the Multiplication Tables appear to give 132 results, though the number of separate results is only 66. But for the usefulness of the twelve times in compound rules the tables might end at 9×9 and there would then be only 36 products to learn.

Tables too long

After the construction of a table, and the repetition of it backwards and forwards, there should be copious cross-questioning, especially on those tables which are most difficult to remember,—7, 9, 12, 6, and 8.

Difficult tables

The farthings, pence, and shillings tables are generally learned by heart, but the time spent on them might be spent to greater profit. Facility in dividing by 4, 12, and 20 (which ought to come from a thorough knowledge of the Multiplication Tables) is far more useful than the recollection of a few money equivalents.

Money tables need not be learned

Tables of weights and measures, on the other hand, must, so far as they are learned at all, be learned by heart, because they express not unchangeable truths derived from the properties of numbers, but custom, which may at any time be changed. Still, all the weights and measures found in a table-book need not be learned. The memory of the ordinary boy or girl should be burdened only with the facts that ordinary men and women require. Why, for instance, should one who is not a druggist be troubled with drachms and scruples, minims and fluid ounces? 'We are more likely to be poisoned by the wrong

Weights and measures

substance than the wrong quantity; and if the doctor and apothecary can learn to read the dog-Latin, they can also get up the weights and measures which accompany it.'[1]

Every school should have a set of the smaller weights and measures, the pound, ounce, quarter, the foot, inch, yard, the pint, quart, gallon, &c., and these should be constantly employed in teaching the tables. Children will thus see the relations between the different multiples, and acquire some definite idea of each. For lack of concrete teaching it is common enough to find young people who can repeat their tables correctly, but who yet cannot tell whether the playground is a pole or a furlong long, and whether a scuttle of coal weighs a pound or a quarter. The dimensions of the room, and of its doors and windows, should be ascertained by actual measurement, in which the pupils take part, and the distances to certain well-known spots should be familiar, and constantly employed as standards of comparison.

Specimens necessary

THE TEACHING OF RULES

The least effective way of teaching a rule is to show the processes without giving any reason for them.[2] This reduces

[1] Dr. T. H. Safford, *Mathematical Teaching and its Modern Methods*, p. 22.

[2] Has the state of things which De Morgan described as existing in the days of William IV. passed away entirely? He says:—'When [a boy] arrives at school he is taught to *say* the table of numeration, and then proceeds through a number of rules . . . which, if he understand, it is well, but if not, nobody cares. Some of these rules are so unintelligible, that were it not for an example at length which usually accompanies them, they would be equivalent to as much Hebrew. . . . As to the reasons for the rules, the pupil cannot trouble his head (to use a common term for that much-avoided operation, thinking) about them, not knowing whether there are any at all, or whether the rules themselves came from the moon, or are a part of that wisdom of our ancestors about which he sometimes hears. Should there be any natural defect in his mind, owing to which he finds it difficult to produce a correct result, knowing neither what

the rule to a mere jugglery with figures, to a cunning device handed down by tradition, instead of an inevitable outcome of the properties of numbers. Children so taught have no power of the mind exercised but the memory, and they will probably forget because they do not understand.

Three methods

A better method is to show the processes and prove that they are right. It is true that when this is employed the rule will not appear inevitable, but it will at any rate appear rational, the memory will be aided by the understanding, and there will be some mental discipline.

The best method is by skilful questioning to make the children find the rule out for themselves. There will then be no need to prove that it is right, or to teach the reasons for it; should the learner forget it, he can always arrive at it afresh by repeating the induction; and in any case he will have undergone a mental discipline which must be of permanent value. It would be impossible, except in a work devoted solely to

he is to do, nor how to do it, there are several approved methods of proceeding. The best of these, unfortunately now somewhat exploded, is a flogging; which works on a principle recommended by physicians, of curing a disorder in a part which cannot be got at, by producing one in another which can. Next to this comes the method of keeping the patient from all recreation until he has done what is required of him, it being considered the same thing in the end, whether he cannot work for want of means, or will not from want of application. It has been suggested to teach the principles involved in the rules, and thus to render the pupil their master instead of their slave; but to this plan, independently of its being an innovation, there are grave objections. Many instructors, if placed in the temple of truth, would be obliged to ask, "How shall I teach what I do not know?" Others would say, "All I have to do at present is to look at the pupil's work, and compare it with the key which I have locked up in my desk; should I begin teaching principles and all that, there would be no end of troublesome questions." In this last idea is much of the secret of the system. It works well, whatever the pupils may do, because, like the grammar and dictionary instruction in Latin and Greek, it saves the *teacher* a world of trouble.'—*The Schoolmaster*, vol. ii. p. 142.

the teaching of Arithmetic, to show the application of this method to all rules; one illustration must therefore suffice.

Illustration of the inductive method

For a first lesson on Compound Addition, the teacher should use the box suggested for the teaching of Notation, together with counters representing pennies, shillings, and sovereigns. After making the children realise that the left compartments are for sovereigns only, the middle compartments for shillings only, and the right compartments for pennies only, he lets them count, as he puts in the upper row £8 9*s.* 4*d.*, in the second £6 8*s.* 3*d.*, and in the third £7 6*s.* 8*d.* He writes each amount on the blackboard thus :—

Pounds	Shillings	Pence
8	9	4
6	8	3
7	6	8

The teacher revises by asking the children to tell him how much money there is in each row. The lesson then proceeds :—

Teacher.—Now let us see how much money we have altogether. How many pennies are there in this compartment? [*Takes them out.*]

Pupils.—8 pennies.

T.—And how many in this? [*Takes them out.*]

P.—3 pennies.

T.—How many pennies have I in my hand now?

P.—11.

T.—How many pennies are there in this compartment? [*Takes them out.*]

P.—4 pennies.

T.—How many pennies have I in my hand now?

P.—15 pennies.

T.—If I had 15 pennies in my pocket I should find them heavy. What could I do to lighten the load?

P.—Change them.

T.—For what?

T.—How many pennies make a shilling?
P.—12 pennies make one shilling.
T.—Then we will take out 12 of these pennies and put in——?
P.—One shilling.
T.—But these [*pointing to the right compartments*] are only for ——?
P.—Pennies.
T.—Which compartments are for shillings? [*Pupils point.*] What then must I do with this shilling?
P.—Place it in the next compartment.
T.—Brown, please come out and *carry* this shilling to the next compartment.

The shillings and pounds are dealt with in the same way as the pence, except that there is no carrying of the pounds to another compartment.

T.—Now how much did we have in this row?
P.—£8 9*s.* 4*d.*
T.—And in this?
P.—£6 8*s.* 3*d.*
T.—And in this?
P.—£7 6*s.* 8*d.*
T.—Now we have collected these sums of money in the lowest row. How much is there in it?
P.—£22 4*s.* 3*d.*
T.—Therefore the sum of £8 9*s.* 4*d.*, £6 8*s.* 3*d.*, and £7 6*s.* 8*d.* is——?
P.—£22 4*s.* 3*d.*

The process having been repeated several times with other sums, the children ought to be able to describe its essential features, that is, to state the rule for Compound Addition. Much still remains to be done, but a broad and solid foundation has been laid in the concrete and inductive teaching indicated. The same method can be applied to Simple Addition and, with variations, to Simple and Compound Subtraction. If this were done, there could be no possible excuse for the employment in Subtraction of the absurd term *borrow*.[1]

[1] If a young teacher should persist in the use of the term, let him be asked from what number he borrows the one, and how, when he pays back,

When there is no need to teach a whole rule by objects, concrete illustration will often remove a casual difficulty. Children, for instance, can be made to see clearly, by the use of abstract numbers, that division by factors produces the same quotient as division by the product of the factors, but they can hardly be made to understand the treatment of the remainder without some such example as the following :—

Concrete illustration

3)• • • • • • • • • • • • • • • • • •
2) : : : : : : : : : : : : : : : : : :
: : : : : : : : : : : : : : : : : :

3)17 units
2)5 threes & 2 units over
2 sixes & 1 three and 2 units (=5) over.

Hence the rule for the whole remainder is :—Multiply the second remainder by the first divisor, and add the first remainder.

MENTAL ARITHMETIC

As an aid and supplement to Written Arithmetic, Mental Arithmetic is of such immense value that there should be daily exercises in it. These exercises should aim at

Purpose

1. Facilitating the working of written problems,
2. Promoting rapidity in written work, and
3. Skill in calculating without paper.

1. Children who can find the answer to a long 'straightforward sum' in any given rule are often incapable of solving the simplest problem involving the same rule. This is especially the case when children have been taught Arithmetic as jugglery with figures. Such children if asked 'How much has a man in the bank who paid in £44 16*s.* and drew out £9 10*s.* and £5 14*s.*?' would be

Aid to written problems

the question is one in Addition ;[1] though, if they were asked 'How much has Tom left out of 10*d.* after spending 2*d.* and 3*d.*?' they would be equally likely to answer correctly. Even then they might not be able to say what rules they had been using, for the analysis of processes of thought is difficult to untrained minds. The aim of the teacher must therefore be both to teach the rule so intelligently that the pupils will know how to apply it, and to encourage them to analyse the processes by which they work problems mentally. Thus, whenever a written problem has to be worked they should be required, first, to make up a mental problem of the same type, and next to discover how they obtained the solution to it.

Though the written problem should always be based on a number of mental problems of the same type, mental problems should not be set simply with a view to facilitating written work. They should also be set with a view to the needs of practical life, and should include every kind of calculation likely to be useful—cost, change, wages, measurements, &c.

Promoting rapidity

2. Various methods may be suggested for promoting rapidity in written work.

a. In Addition, totals only should be named. If, for instance, 9, 4, 6, 2, and 8 have to be added, the pupil should say not '9 and 4 are 13, 13 and 6 are 19, 19 and 2 are 21, 21 and 8 are 29,' but '9, 13, 19, 21, 29.'

[1] It is to the study of Arithmetic for commercial purposes alone, which began in the seventeenth century, that 'we owe the destruction of demonstrative Arithmetic. . . . It never was much the habit of arithmeticians to prove their rules, and the very word *proof* in that science never came to mean more than a test of the correctness of a particular operation. . . . As soon as attention was fairly averted to Arithmetic for commercial purposes alone, such rational application as had been handed down from the writers of the sixteenth century began to disappear, and was finally extinct in the work of Cocker [1631–1675]. . . . From this time began the finished school of teachers whose pupils ask, when a question is given, what rule it is in, and run away when they grow up from any numerical statement with the declaration that anything may be proved by figures—as it may, to them.' *De Morgan*

b. Rows of numbers should be written on the blackboard and added orally. They should generally be written under each other, but sometimes side by side. By rubbing out only one number and substituting another, an ever fresh variety of 'tots' may be produced with little trouble.

c. All the children in the class should in turn be made to add a given number to a preceding total, or subtract it from a preceding remainder. Thus, if the number for addition were 3, and the starting point 4, the first child would say '7,' the second '10,' the third '13,' &c. If the number for subtraction were 4, and the starting point 61, the children would say '57,' '53,' '49,' &c. The numbers employed should increase with the age of the children, and should always be added or subtracted as *wholes*. Children badly taught might *say* '9 and 4 are 13,' but they would *think* '9, 10, 11, 12, 13.' If rapidity is insisted on, the habit of dealing with numbers as separate units will be overcome, and the greater the rapidity the greater the accuracy.

d. In all arithmetical progressions the units figures recur regularly. Thus, if 2 be added to an odd number we have the series

3 5 7 9 1

and if it be added to an even number we have the series

4 6 8 0 2

Beginning, for instance, at 31 we have

33 35 37 39 41
43 45 47 49 51
53 55 57 59 61, &c.,

and beginning at 32 we have

34 36 38 40 42
44 46 48 50 52
54 56 58 60 62

Similarly, if 3 be added to an odd or even number we have the recurring units

4 7 0 3 6 9 2 5 8 1

as in

24 27 30 33 36 39 42 45 48 51
54 57 60 63 66 69 72 75 78 81

A very useful exercise can be made by writing these recurrent units on the blackboard, and pointing to them as the children work an increasing or a decreasing progression. Another form of the exercise is to set for addition and subtraction successive numbers alike in the units, as

7 + 4, 17 + 4, 27 + 4, 37 + 4, 47 + 4, 57 + 4, 67 + 4, &c.
6 − 3, 16 − 3, 26 − 3, 36 − 3, 46 − 3, 56 − 3, 66 − 3, &c.

e. Questions embracing the four simple rules should often be set, as

4 and 3 and 7, double it, take away 4, divide by 6, multiply by 5, take away 4, call it farthings, how many pence?

9 and 9 and 9 and 9 and 9, take away 5, divide by 4, square, take away 16, divide by 7.

In these exercises the child who once gets left behind cannot overtake the teacher. The pace should therefore be generally such that the majority of the class can follow. Sometimes it should be faster to encourage the bright and sometimes slower to encourage the dull.

f. Rapidity is the result of methods as well as of mental alertness. For subtraction experts in computation recommend the 'shop' or 'supplementary' method, which has for its basis not $a - b = c$, but $b + c = a$. With the following numbers

42695
26538
16157

8 and 7 are 15; carry 1
5 and 1 are 6
4 and 5 are 9
6 and 6 are 12; carry 1

This method, however, should not be adopted till children have thoroughly mastered the principle of the more ordinary method, and acquired some facility in computation.

g. Experts also work long division by the method called in England 'Italian' and on the Continent 'Austrian.' This consists in multiplying and subtracting at once, as in the following example :—

2659843÷7489

7489)2659843(355
41314
38693
1248

9 × 3 = 27 ; 27 + 1 = 28 ; carry 2
8 × 3 + 2 = 26 ; 26 + 8 = 29 ; ,, 2
4 × 3 + 2 = 14 ; 14 + 1 = 15 ; ,, 1
7 × 3 + 1 = 22 ; 22 + 4 = 26

9 × 5 = 45 ; 45 + 9 = 54 ; carry 5
8 × 5 + 5 = 45 ; 45 + 6 = 51 ; ,, 5
4 × 5 + 5 = 25 ; 25 + 8 = 33 ; ,, 3
7 × 5 + 3 = 38 ; 38 + 3 = 41

9 × 5 = 45 ; 45 + 8 = 53 ; carry 5
8 × 5 + 5 = 45 ; 45 + 4 = 49 ; ,, 4
4 × 5 + 4 = 24 ; 24 + 2 = 26 ; ,, 2
7 × 5 + 2 = 37 ; 37 + 1 = 38

3. A good many teachers formerly looked upon Mental Arithmetic as nothing more than the application to mental calculations of rules for abbreviation, and some have now fallen into the opposite error of not teaching those rules at all. The rules are so useful in practical life that they must be taught.

Rules

The proper method of teaching them is, of course, the inductive. If, for instance, the rule for multiplying by 25 has to be taught, the teacher will not say, 'We add two noughts and divide by 4,' but he will elicit that

1. When we add two noughts we multiply by 100.

3. ∴ the number obtained by adding two noughts is 4 times too great.
4. ∴ it must be divided by 4 to obtain the product required.

Finally, after sufficient examples have been worked he will elicit that the addition of the two noughts may be 'understood,' and that if in dividing by 4 there be no remainder we must add 00.

If the remainder be 1 we must add 25
" " " 2 " " " 50
" " " 3 " " " 75.

Sometimes the reason for a rule may be too difficult for the children to understand. The teacher will then show by actual working that the full and the abbreviated methods bring the same result; and children who see that the rule is true of every case in which they try it, will believe (probably infer) that it must be true of all cases.

The rule for squaring a number depends on the fact that

$$a^2=(a+b)\ (a-b)+b^2,$$

a statement which children who know nothing of Algebra would hardly comprehend. The teacher would therefore show by actual working

that $15^2=225$ and that $(15+5)\ (15-5)+5^2=225$
" $28^2=784$ " " $(28+2)\ (28-2)+2^2=784$
" $47^2=2209$ " " $(47+3)\ (47-3)+3^2=2209$

Caution

One general caution may be necessary. Arithmetic is not Written Arithmetic worked on imaginary paper. The methods of the two are altogether distinct. For example, in adding 426 and 314 in writing we begin with the units; in adding them mentally we begin with the hundreds and say '426, 726, 736, 740.' Similarly, in

multiplying 356 by 3, we say '900, 150, 1050, 18, 1068. Few children could multiply 26 by 24 by the ordinary written methods, but by mental methods the question is easy enough. They might resolve 24 into factors and say '$26 \times 4 = 104$; $104 \times 6 = 624$'; or, employing the rule for multiplying by 25, they might say '$24 \times 25 = 600$; $600 + 24 = 624$.'

PROBLEMS

Uses

The value of the solution of problems in producing mental alertness has long been recognised. 'There is a collection of "Problems for Quickening the Mind" which is certainly as old as 1000 A.D., and possibly older. Cantor is of the opinion that it was written much earlier and by Alcuin' [735 (?)—804].[1] Problems are also valuable as a test of the thoroughness with which the application of rules has been taught. They have a further use still, for, in the affairs of practical life, Arithmetic consists solely of the solution of problems. A man may require to know what three things will cost at 6*d.* or 6*s.* or 6*l.* each; what he will earn in three hours at 6*d.* an hour, or in three days at 6*s.* a day; how many feet there are in six yards; or how many apples can be bought for 6*d.* at three a penny, but he will never require to know the abstract product of the abstract numbers three and six. It follows that problems should serve two purposes, mental discipline and preparation for business.

Problems serving more than one purpose

The same problem will serve both purposes often but not always; for the solution of practical questions may demand rapidity and accuracy of computation rather than thought; and, on the other hand, the conditions assumed in questions demanding an elaborate train of reasoning may be such as are not likely to come in the way of ordinary people. The question

[1] Dr. F. Cajori, *History of Elementary Mathematics*, p. 113.

A grocer mixes two kinds of tea which cost him respectively 1*s.* 10*d.* and 1*s.* 4*d.* per lb. ; in what proportion must he mix them so that by selling the tea at 1*s.* 10*d.* per lb. he may gain 25 per cent. ?

is a typical trade problem, but it cannot be solved without a certain amount of thought. The question

4 men and 6 boys mow 69·3 acres of a field in 10 days of 9 hours each ; how many more days of 10·6 hours each must they work to finish mowing the field if 1 more man is put on and 2 of the boys are taken off, and 2 men do as much work as 5 boys?

demands more thought, and is therefore valuable as a mental exercise, though the conditions assumed would hardly be less real if the field were Elysian.

In practical life a man aims at reaching the answer to a problem quickly ; he therefore works as much as he can of it in his head, and sets down as few figures as possible for the rest. In school the teacher is concerned with the clearness and conciseness of the reasoning as well as with the accuracy and brevity of the computation. He therefore requires both the reasoning and the computation to be fully set forth. Most people could solve the following problem mentally :—

Working must be fully set forth

I have to be at a certain place at a certain time, and I find that if I walk at the rate of 4 miles an hour I shall be 5 minutes too late, if at the rate of 5 miles an hour I shall be 10 minutes too soon. How far have I to go?

If they could not, they would probably write :—

$$\begin{array}{r} 15 \\ 12 \\ \hline 3 \end{array} \qquad 3)\underline{15} \\ 5$$

But the teacher is not satisfied with these bald figures. He requires some such statement as this :—

Time for walking 1 m. at 4 m. an hr. = 15 min.
,, ,, 5 m. ,, = 12 ,,
∴ the difference fo the two rates for 1 m. = 15 min. − 12 min. = 3 min.
but ,, ,, ,, ,, the given distance = 15 min.

When there is an error the teacher can then see whether it arises from false reasoning or false calculation, and the pupil, having correctly recorded all the steps taken, may be able to discover where he first went astray.

Problems should be classified

Problems should never be given at random. They should have a definite end in view, and lead up to it by a well-considered sequence. If the end is testing they should be of mixed kinds (like the 'Miscellaneous Exercises' in a text book), but if the end is teaching, they should be classified into types, and the attention of the children should be confined to the first type till (and only till) they can recognise and solve it under any form. It is well for every teacher to make his own classified collection of problems, original, selected, and adapted

Useful information conveyed by problems

Some writers advocate making problems a medium for conveying useful information, and, provided the information do not swamp the Arithmetic, there is no harm in the practice. It may, on the contrary, give interest and actuality to the lesson. Lengths of rivers, heights of mountains, the distance between towns, areas, populations, dates, facts in physical science, statistics, &c., can be made factors in many kinds of problems without, at any rate, diminishing their value as exercises in Arithmetic, while the manipulation and repetition of the figures will insensibly fix them in the memory.

Absurd conditions

A problem should not lay down absurd conditions. The more it is in accord with the facts of life, the better it is as a preparation for dealing with them. Furthermore, if the data are probable the teacher can reasonably require that the answers shall be probable also.[1]

[1] The absurdity of the answers sometimes given to problems is almost incredible. In a recent examination (not of children either) one candidate, given the distance from the equator to the pole in metres, and the equivalent of a metre in inches, and asked to calculate the circumference of the

MISCELLANEOUS HINTS

1. It has already been pointed out that in practical life Arithmetic is applied only to the solution of problems. It follows that in school, which is a preparation for life, many of the questions set should be in the form of problems, and many of the problems should be practical. Rules (like True Discount) teaching methods which do not prevail in business should, by common consent, be dropped.

Many problems

2. The mechanical 'sums' which are intended to fix the rules in the mind and to promote accuracy and rapidity of calculation should be as varied as possible in form. A sum in Simple Subtraction, for instance, might take the forms :—

Various forms of questions

From *a* take *b*.
Take *b* from *a*.
What is the difference between *a* and *b*?
What is the difference between *b* and *a*?
What must be added to *b* to make *a*?
What must be taken from *a* to leave *b*?
What is the remainder when *b* is taken from *a*?
By how many is *a* more than *b*?
By how many is *b* less than *a*?

3. Till notation presents no difficulty the questions should often be written in words on the blackboard or dictated, and the answers should be read in words.

Question in words

4. The numbers involved in mechanical 'sums' as well as in problems should generally be small. Children of eight or nine can be made to add, subtract, multiply, and divide by millions, but it is absurd to make them when they probably have no clear concept of even a thousand. Merely as an exercise in accuracy and speed,

Numbers should be small

carth in miles, gave 18 miles! Another, asked how much time, under given conditions, would be saved in a week, gave 25 years!

short 'sums' are best, admitting of so much greater variety in a given time. The formidable array of figures often demanded by questions in Multiplication, Reduction, Fractions, Practice, and Compound Proportion is enough to frighten a child. A question which is very short may require many operations. Thus to find the sum of $\frac{1}{19}$, $\frac{1}{23}$, and $\frac{2}{29}$ a child would have to multiply the three denominators together, divide the common denominator in succession by 19, 23, and 29; multiply the respective quotients by 15, 17 and 22; add the products; and divide the sum by the common denominator—processes demanding nearly two hundred separate figures. In practical life few denominators are over 12, and of these fewer still are prime.

5. The arguments in favour of letting each child work from a printed book are :—

For and against books

a. It saves the time of the teacher in setting questions.

b. It keeps every child occupied.

c. It allows bright children to advance without waiting for the dull.

d. It facilitates the prevention of 'copying.'

The arguments on the other side are :—

a. The book may be compiled with little judgment.

b. When compiled with judgment it is suited to the needs of the average child only.

c. If the class is large the children work faster than the teacher can examine.

d. When a 'sum' proves too difficult for any particular child, he must be shown individually how to work it.

If a book is used it should

a. Be the compilation of a teacher-mathematician.

b. Contain only questions if it is intended for young pupils. Printed instructions are useless for such pupils, and a knowledge of the answers is a snare to them. Instead of relying on their own powers they 'work to' a known answer.

6. It is better for children not to work a sum than to work it and not have it carefully examined. A wrong answer may result from unsound reasoning or from inaccurate computation,

Correction

and if the fact that it is wrong be not pointed out, the pupil is confirmed in unsound reasoning or encouraged in a habit of inaccuracy. The teacher, however, should not show where the error occurs till the pupil has tried and failed to detect it.

7. The use of slates for Arithmetic is a disadvantage. The knowledge that figures can be instantly rubbed out leads to slovenliness and carelessness.

8 All 'sums' should be set down neatly and intelligibly.

Neatness

If it is true that clear thought leads to clear statement, it is also true that clear statement tends to clear thought.

9. So to train the moral nature of children that they would not 'copy' if they could is a task calling for time, patience, and

'Copying'

skill. Till it is accomplished the teacher must employ such devices that they could not 'copy' if they would. One, the use of books of questions, has already been suggested. Another is to give alternate pupils different 'sums.' The sums need not be entirely different—one line in Addition or Subtraction, the multiplier in Multiplication, the divisor in Division—would be sufficient variation.

10. The test-cards universally employed in English ele-

Test-cards

mentary schools are an absolute bar to 'copying,' but they should be strictly kept to their proper purpose (which is testing, not teaching).

11. If there is a short method of 'proving' an answer it should be taught to, at any rate, the older scholars, though

Proof

the wisdom of requiring them always to apply it is doubtful. The power of ascertaining quickly whether a mistake has been made is certainly valuable, but the habit of making no mistake is more valuable. Still, in examina-

tions, answers should, whenever possible, be proved. A mistake may then be disastrous, and if not corrected at once it is irrevocable.

Varying progress

12. There is perhaps no subject in which one child's progress differs so much from another's as in Arithmetic. It follows that a frequent reclassification in this subject is necessary.

ENGLISH

COMPOSITION

Utility of Composition

EVERY ONE, except the absolutely illiterate, is called upon, at some time or other, to communicate in writing with relatives, friends, employers, or business connections. The power of saying, clearly and concisely, what one has to say is therefore of universal utility, and no further argument need be given for the teaching of Composition in schools of all grades.

Teaching often insufficient

There is probably no school which does not profess to teach it, but too often nothing is done in the lower classes or forms, and little in the higher, the labour of the teacher being limited to the setting and correcting, and the labour of the pupils to the composing, of essays or themes. The essay, like the 'sum' in arithmetic, is a valuable exercise when it compels children to apply instruction already received; but till the instruction has been given the teacher should no more expect an essay to be written than he expects the 'sum' to be worked. Granting that the instruction has been given, an essay assumes the possession of ideas, of words to express them, and of the ability to write and spell; hence, it is an exercise beyond the capacity of the lower classes, in which the lessons are necessarily preparatory and the exercises mostly oral.

These lessons have a double aim, the enlargement of vocabulary and the construction of sentences. It is possible to have words without ideas, but not ideas without words.

The vocabulary of a child is therefore enlarged not so much by giving him direct instruction on the meanings of new words as by making him have definite conceptions of the new words needed to express the new ideas conveyed to him in talks on common things, in object lessons, in reading, &c. It must not, however, be forgotten that, while ideas bring words, words properly explained also bring ideas. The word *roundness* for instance, connotes a general property, but the words *ring*, *circle*, *disc*, *ball*, *globe*, *sphere*, *cylinder* add breadth and distinctness to the general notion. It follows that systematic lessons on words have their place in the teaching of Composition.

Vocabulary

We have already seen [1] that the dictionary meaning of a word may create quite a wrong impression. This shows the necessity of presenting every new word in a sentence, and shows also the peculiar value of the reading-book as a means of enlarging the vocabulary. Not only is every word presented in its appropriate setting there, but the meaning of a strange word may often be inferred from the context. Early in 'Pilgrim's Progress' we meet the following passage :—

Words should be taught in sentences

> Just as they had ended this talk they drew near to a very miry slough that was in the midst of the plain, and they, being heedless, did both fall suddenly into the bog. . . . Here, therefore, they wallowed for a time, being grievously bedaubed with the dirt, and Christian, because of the burden that was on his back, began to sink in the mire.

A child reading this passage would almost certainly not understand the word *slough* (which the conserving genius of Bunyan has alone prevented from becoming obsolete), and he might not understand the word *miry*, but reading to the end he could not fail to discover with certainty the meaning of both. There is, of course, a danger that the inference may be false. The

ings of some of the words which they favour (*fain* and *ilk*, for instance) probably springs from this cause.

Children should see as well as hear every new word that they learn, and after it has been presented to them in sentences they should be required to make sentences of their own introducing it.

and written

Paraphrasing is an exercise often adopted in the higher classes for widening the vocabulary, though its utility in this respect may be easily overrated. It is open to the serious objection that it compels one to express a thought in inferior language, since all the best words have already been claimed by the author. Converting his gold into baser metal, it reverses the effect of the philosopher's stone. Paraphrasing is of real value only as a test of general intelligence and of the extent to which the author's meaning is comprehended.

Paraphrase

Matthew Arnold, in his Report on English Elementary Schools for the year 1874, states that Campbell's line,

> As monumental bronze unchanged his look,

was paraphrased by one candidate, 'His demeanour was as unchangeable as ornamental ironwork,' and by another, 'His countenance was fixed as though it had been a memorial of copper and zinc.' Arnold adds:—'To paraphrase passably a few lines . . . is as good a proof of general intelligence as any that could be required or given. To paraphrase them eminently well may be a proof of a special faculty and not necessarily indicative of a general intelligence of an eminent order. But to paraphrase them passably is at least a good negative proof, a proof that one's mind is not so poorly furnished and so dull of movement that one must be pronounced wanting in general intelligence.'

Training in the construction of sentences should

anything about Subject or Predicate or Parts of Speech, the teacher should insist upon the little ones using complete sentences in their familiar talks with him, and in their answers to his questions.

Training in the construction of sentences

In the second stage the instruction begins to gain form.[1] Exercises are set on the construction of sentences containing given elements, *e.g.* :

a. Make sentences introducing given words (which should be Nouns, Verbs, Adjectives, and Adverbs).

b. Make sentences introducing given pairs of words (Nouns and Verbs, Adjectives and Nouns, Verbs and Adjectives).

c. Make sentences introducing three words (Adjectives, Nouns, and Verbs; Nouns, Verbs, and Adverbs).

d. Make sentences introducing four words (Adjectives, Nouns, Verbs, and Adverbs).

If the children have learned something of analysis they should be required to work such exercises as the following :

a. Place Predicates after the following Subjects.
b. Place Subjects before the following Predicates.
c. Supply the omitted Objects in the following sentences.
d. Place Subjects before and Objects after the following Predicates.
e. Add Adjuncts to each Subject.
f. Add Adjuncts to each Object.
g. Add Adjuncts to each Subject and Object.
h. Add Adjuncts to each Predicate.

When a certain facility in the construction of simple sentences has been acquired, the combination of two or more sentences into one should be taught.

The way is then prepared for continuous and written Composition. The simplest essay or theme calls for reading, experience, and reflection, and as these cannot be expected from young children the earliest exercises in continuous Composition should be the reproduction of a short narrative with an obvious point. The incidents being

Easy narrative

easily remembered, attention will be concentrated on the finding of the words necessary to describe them.

The teacher begins by telling the story two or three times. This is better than reading it, for if the story is told the language will vary, whereas, if it is read, the language will always be the same and the children will probably reproduce the very words of the book, so that what should be an exercise in Composition becomes an exercise of memory.

When the story has been told and the teacher has ascertained by questioning that the children understand it and can place each part in the right order, they may be called upon to write it. Those who have not a natural facility of expression will find this difficult at the outset, and it will therefore be well for the class to compose collectively. One pupil is asked to make up the first sentence. This is written on the blackboard, criticised by the rest of the class, and, if necessary, amended. When every sentence has been treated in the same way the whole story is revised, the blackboard is turned, and the pupils write their own versions. After a while the preliminary collective Composition may be dispensed with.

To counteract the tendency of children to reproduce the sentences which they have heard instead of making up sentences of their own, narratives in rhyme should be freely employed. These should at first be perfectly direct and simple stories, such as Eliza Cook's 'King Bruce and the Spider,' Mrs. Hemans' 'Casabianca,' Blake's 'Chimney Sweep,' Campbell's 'Lord Ullin's Daughter,' Southey's 'Bishop Hatto,' Wordsworth's 'Fidelity,' Tennyson's 'Revenge,' and the Percy Ballads. Afterwards poems may be selected in which the incidents are not related in detail, or in which the narrative is mixed with comment, such as Kingsley's 'Three Fishers' and 'Sands of Dee,' and Tennyson's 'Lucknow' and 'Charge of the Light Brigade.'

Next in order of difficulty to the telling of a story come (1) the description of a picture, a building, a village, a walk, a

scene, &c. ; (2) the writing of a letter ; (3) an essay or theme. With these, as with a story, collective Composition should pre-

More difficult exercises

cede individual effort. Actuality may be given to the letter by supposing it to be in reply to an advertisement, or to convey definite information.

With regard to the essay the difficulty to be overcome is not the expression but the thought. With the previous pre-

The essay 1. Simultaneous composition

paration children ought to know how to say anything if they have anything to say, and the teacher must help them to gain confidence by showing them that if they only think they have something to say. This he can do by means of stimulating questions ; indeed, a whole essay (crude in form, it is true) might be made up of the answers to consecutive questions, thus :—

Question	Answer	Essay written on the Blackboard
Where is the cat found ?	The cat is found in nearly every house.	The cat is found in nearly every house.
What is it kept for ? What else ?	It is kept as a pet. It is kept to catch mice.	
What do most people keep it for ? *Combine these three answers into one sentence.*	They keep it as a pet and to catch mice.	Sometimes it is kept as a pet only, and sometimes it is kept to catch mice, but most people keep it for both purposes.
What kind of beast is the cat ? How is it fitted by Nature to be a beast of prey ?	The cat is a beast of prey. Its teeth are long and sharp, its claws are long and sharp, it can walk without making a noise.	
Why ?	Because it has pads under its feet.	

Question	Answer	Essay written on the Blackboard
Combine these three answers into one sentence.		The cat is fitted by Nature to be a beast of prey; hence its teeth and claws are sharp and long, and under its feet are pads which enable it to walk without making a noise.
&c.	&c.	&c.

2. Simultaneous sketch

At the next step the material is elicited as before, but only a brief outline of it is written on the blackboard. Thus the sketch of the preceding essay would be :

1. Where kept.
2. Why kept.
3. Fitted to be a beast of prey :
   a. Teeth. *b*. Claws. *c*. Pads. &c.

3. Individual sketch

At the next step each pupil expands into an essay, not the outline which the class has prepared, but an outline which he has himself prepared. This outline should always be insisted on as an essential preliminary. The work of an experienced author often lacks balance and proportion because he has neglected to take a comprehensive view of his subject before beginning to write; how much more is this likely to be the case with a little child ! A Composition which has no skeleton cannot help being invertebrate. The teacher should therefore lay down two inviolable rules :—

1. Think out your whole essay before penning one sentence of it.

2. Think out each sentence before penning one word of it.

outline is exceedingly absurd.[1] The essay, and therefore the outline, must vary with the nature of the subject and the mental characteristics of the writer. The frame which is excellent for a kite would be useless for a coracle.

Subjects of themes

The subjects set for themes should at first be concrete things, about which children have simply to say what they know; afterwards more abstract subjects may be set, about which they are required to say what they think. The teacher should, however, exercise considerable discretion. Sad or melancholy topics, topics which assume a large experience and broad views of life, topics calling for a too intimate statement of private sentiments and relations, should never be chosen.

Correctness of style

The first great object to be attained is fluency, the second, correctness. To attain this demands a careful classification of typical errors and careful lessons on the avoidance of each. Ignorance or bad taste in the choice of words, clumsiness in the arrangement of them, violation of the rules of Grammar, obscurity and ambiguity of style, must all be exhaustively treated; and the teacher must not confine himself to explanation and exhortation (which would leave no more permanent impression than a ship leaves in water). The best method is the correction of faulty sentences, such as :—

Dr. Dodd is a very populous preacher.
A respectable widow wants washing.

---

[1] The following is such an outline :

1. Theme [whatever that may mean].
2. What it is (definition, &c.).
3. Description.
4. Uses (if any).
5. General remarks.

An essay written according to this plan on, say, 'Cruelty to Animals,' or 'The Peculiarities of the English Climate' would be a curious production.

That which we appellate a rose by any other cognomen would possess the property of titillating the olfactory nerve in an equally dulcet manner.

She fed sans façon on the mangeaille provided by the chef of the village auberge.

One of the combatants was unhurt and the other sustained a wound in the arm of no consequence.

The king has given me the title of a duke.

The population of London is greater than any other city.

Gold is more precious than all metals.[1]

Correction of exercises

Great pains must be taken with the correction of all exercises. A fault uncorrected is a fault confirmed. Not only should every mistake be marked,[2] but the reason why it is a mistake should be pointed out. It would be tedious (and, if the class be large, impossible) for the teacher to do this with each pupil. And it is hardly necessary, because the majority of errors conform to certain general types, and when the whole class has been shown why the genus is wrong each pupil will be able to discover for himself why his particular species is wrong. In awarding marks errors should be weighed, not counted. The essay which, though free from errors, 'has nothing in it' ought to be marked lower than the essay which, though faulty in style, shows some originality in treatment. Good work should be commended without stint; bad work should never be ridiculed; praise should be individual, blame general.

GRAMMAR

Utility of Grammar over-estimated

Grammar may be regarded as an art and as a science. As an art it is a branch of Composition, because it shows the application of the laws to which the best educated men and women conform in speaking and in writing. Hence the thorough teaching of Composition involves the teaching of the art of Grammar. Still, it

[1] See *Longmans' School Composition*, Part II.

[2] Arbitrary signs for the various common mistakes will save the teacher

is easy to overestimate the utility of that art. Correct speech (like correct conduct) is largely a matter of habit. A child brought up amongst cultured people speaks correctly because he hears them speak correctly; adults who have been brought up amongst people wanting in culture often speak incorrectly after going through a course of grammatical instruction.[1]

When a little child says, 'Me is dood,' his mother, though mistress of all the technicalities of Syntax, does not tell him that the Subject should be in the Nominative Case and the Verb in the First Person; she simply remarks, 'You should not say "Me is dood"; you should say "I am good."' Correct speech would be impossible to young children if it depended on a knowledge of Grammar, because the study of Grammar demands powers undeveloped in young children. With them, therefore, all that parents and teachers can do is to point out *how* a given sentence is wrong; they cannot point out *why* it is wrong. Even adults apply Grammar only to counteract habit. The habit, for example, of using a Plural Verb after a Plural Noun would lead one to write 'Every line of his poems and songs *were* like thumps on his own anvil'; the habit is counteracted by remembering that the real Subject, *line*, is Singular. So the habit of putting an Objective Relative before a Verb in the Active Voice leads one to say correctly, 'That is man *whom* I know,' and incorrectly, 'That is a man whom I know is faithful and true,' one's knowledge of Grammar counteracting the habit in the second case.

Educative value of Grammar

The science of Grammar divides words according to their functions, and subdivides them again and again according to function or structure. Its practical value may be comparatively small, but classification (considered logically or psychologically) is so important as a foundation of judgments (which are themselves the foundation of reasoning) that any science in which it plays an important

part must possess great educative value. It is, however, questionable whether time can be found in the necessarily limited course of a primary school for a science which is chiefly, if not wholly, gymnastic.

Grammar badly taught

It is unquestionable that of the ordinary subjects of instruction Grammar is one of the worst taught. The causes are probably three :—

1. The study is begun too early.[1] It is prescribed for the lowest Standard of English Elementary Schools, for children of seven or eight years of age, though such children cannot possibly possess the powers required. It is true that skill in the presentation of a subject will obviate many of the difficulties, but there are in Grammar some inherent difficulties which cannot be obviated. No child of seven or eight, for instance, can be expected to comprehend an Abstract Noun or the Verb '*to be*,' and yet the earliest and simplest lessons include notions of the Verb and the Noun.

2. The teaching is deductive. It begins with classes instead of with individuals, with functions instead of with examples. It makes the pupil accept general statements on the authority of the teacher, whereas he ought to reason them out for himself; and it compels him to overcome the resistance of the natural laws which are violated ; it gives him a summary in the shape of a definition before giving him anything to summarise.

3. The memory is needlessly burdened. Some writers of Grammars do not seem satisfied till they have divided and subdivided everything down to the *infima species* and recorded

[1] 'The science of English grammar as defining the Parts of Speech and developing the relations of these in the sentence is frequently pursued in the most superficial manner, because its classifications transcend the antecedent experience of the young student. His classifying faculty has not yet constructed the groups on which the definitions are based. . . . Grammar is, in fact, a subjective science and consequently . . . is one of the studies that in a logical order stands later in the series than the objective sciences

all the exceptions to all the rules; and what they write unfortunate children have to learn. The teacher, of course, is free to neglect small details, but he may be afraid to avail himself of his freedom lest the examiner should ask for them.

Assuming that external circumstances force the teaching of Grammar, the Parts of Speech will in the lower classes probably

Parts of Speech

be taken first. Of the Parts of Speech two are paramount, the Verb and the Noun. The Adverb depends on the Verb, the Adjective depends on, and the Pronoun is a substitute for, the Noun, while the Preposition and the Conjunction are connectives. It follows that the Verb and the Noun should form the subjects of the earliest lessons, and that the Noun, being simpler and more closely related to the concrete, should precede the Verb.

The following outline of a series of lessons on the Noun

The Noun

will show the inductive method suggested:—

1. *Names of particular persons.* Names have hitherto been associated in the mind of the child with the things for which they stand; he has now to think of them as something separate and distinct, and he will find it easiest to do so with Proper Nouns. Begin with such questions as:—

What is your *name*?
What is the *name* of your brother?
What is the *name* of your sister?
What is the *name* of your neighbour?
What is my *name*? &c.

Then ask for names:

Give the names of ten boys whom you know.
Give the names of ten girls whom you know.
Give the names of ten grown-up people whom you know.
Give the names of ten persons whom you have read about, &c.

Then ask the class to pick out the names of persons in sentences in which all the Nouns are names of particular persons, as:

Jack is playing with Tom and Alfred.

2. *Names of particular places* should be treated in the same way.
3. *Common names of persons.* Give such sentences as :

Captain Tempest is a sailor.
Major Pepper is a soldier.

Ask for the names of persons, and show that *sailor* and *soldier* are as much names of persons as *Captain Tempest* and *Major Pepper.* Ask for the names of so many shopkeepers (as *grocer*), relatives (as *father*), workmen (as *carpenter*), &c., and then have the names picked out in such sentences as :—

The nurse is minding the baby.
The master is teaching twenty boys.

4. *Common names of places* should be treated in the same way.

5. The idea of a name as distinct from the thing named will now be familiar, and the remaining classes of Common Nouns will present no difficulty.

6. *Abstract Nouns* will, however, present considerable difficulty, as the powers of abstraction are undeveloped, and the very terms *quality*, *action*, &c., which cannot well be avoided, are barely comprehensible. Complete success is hardly possible, but complete failure may be averted by connecting the abstract with the concrete, thus :

This is a piece of paper. It is white.
And . . . . ? [smooth].
And . . . . ? [glossy].
And . . . . ? [soft].

It is white, therefore it has the *quality* of *whiteness.*
It is smooth, therefore it has the quality of . . . . ?
It is glossy, therefore it has the quality of . . . . ?
It is soft, therefore it has the quality of . . . . ?

Treat other objects in the same way till the pupils, though they may not be able to define *quality*, have a general notion of the meaning of the word, and can name the qualities of any objects submitted to them. Then set exercises :

Name the qualities of paper, chalk, stone, iron, flint, &c.
Pick out the names of qualities in such sentences as :
The brightness of the sun nearly blinded the man.
Chalk has not the hardness of flint.

Deal in the same way with the remaining classes of Abstract Nouns.

The word Noun has not yet been mentioned, but the children, being familiar with the function, are now ready for the term which connotes it.

The teacher therefore says: 'We have been talking a great deal about different kinds of names; in Grammar all names are called *Nouns*'; and his question, 'What is a Noun?' ought to elicit the definition.[1]

Parsing

Before children proceed to Accidence and Syntax they should have plenty of practice in Parsing, using the word in its literal sense of telling the parts of speech (*quae pars orationis*). They should be trained to think first of the function, then of the name; first what the word does, then what it is; to say '*Jane* is a name, *therefore* it is a noun,' not '*Jane* is a Noun *because* it is a name.' 'Giving reasons after the answer is not the same mental process as giving first the facts and then deducing the answer from the facts. A boy that has given a bad answer will generally find little difficulty in supporting it with a bad reason. But if you fix his attention first on what the word does, before he has committed himself to an error and while his mind is open to receive the truth, he is more likely to reason in an unbiased and honest way; and, besides, he will attach importance to that which is really important, . . . the function and not the name of the word.'[2]

Too much Parsing

Parsing, in the fuller sense of the term, is useful so long as it is necessary to fix the newly learned Accidence and Syntax on the memory, but far too much time is frequently devoted to it, for it ceases to be useful as soon as it ceases to be novel. One Noun, one Verb, and one Pronoun are so much like another Noun, another Verb and another Pronoun that the parsing of them becomes mechanical, and an exercise which calls for no effort produces no development. All the benefit which Parsing can impart may be obtained and all the evils of vain repetition may be avoided—(1) By requiring the parsing of only such words as have something peculiar in their structure or mode of employment; and (2) by directing

[1] I pass over the other Parts of Speech, as my ideas on inductive teaching are fully exemplified in *Longmans' Junior School Grammar* (English edition) or *Longmans' Primary School Grammar* (American edition).

attention to some particular point alone,—by asking the children, for instance, to pick out all the Relative Pronouns, all the Subjunctives, all the Plural Verbs, or all the Possessive Cases in a specified passage of the reading-book.

Analysis

Grammatical Analysis tends to enlarge one's conception of the Parts of Speech. It makes one see, for example, that, in function and in essence, the Object is the same in the three sentences :

He hath heard *men*.
He hath heard *men of few words*.
He hath heard *that men of few words are the best men*.

For this reason the teaching of the Parts of Speech through Analysis has sometimes been advocated. There is much to be said for the method if the study of Grammar could be postponed to that comparatively late period when the powers of analysis manifest themselves.

What has been said of Parsing applies to Analysis ; the exercise is useful only so long as it is novel, and when it ceases to be novel vain repetition may be avoided by setting sentences which have something exceptional, or by asking the children to pick out from their reading-books sentences exhibiting some specified characteristic.

History of English

Our language is a growth, not a creation. A full understanding of its present state is therefore impossible without a full knowledge of the stages through which it has passed. This knowledge makes Accidence and Syntax interesting as well as intelligible. The fossil which to the untaught eye is but a dull dead stone reveals to the eye of the geologist a chapter in the history of the earth ; so, the 'exception,' which is but a burden to the memory of the uninstructed 'grammarian,' reveals to the philologist a chapter in the history of the language. The 'Irregular' Adjectives, for example, preserve in the Comparatives of *good*,

The history of the English speech cannot be understood without some familiarity with the history of the English nation, and with the languages from which our vocabulary is derived, nor without some experience in dealing with inflexions and concords. It cannot, therefore, be communicated to young children, but it should be ever present in the mind of the teacher, if only to save him from making grotesque blunders. Thus, the older writers (who were profoundly ignorant of the stages in the growth of their mother-tongue, and who considered that an acquaintance with Latin entitled them to speak with authority on English) used to say that *a* becomes *an* before a vowel. They did not know that *an* is the normal form, which becomes *a* before a consonant.

LITERATURE

Value

Literature has an educative, æsthetic, and ethical value. It quickens the imagination, widens the intellectual horizon, refines the taste, elevates the feelings, s a love for beauty, truth and purity, and provides some of the highest pleasures of which human nature is capable. The literatures of Greece and Rome, of Germany, France, Italy and Spain all amply repay study, grandeur, in variety, in interest and in merit our own is second to none of them.

> Great men have been among us ; hands that penned
> And tongues that uttered wisdom, better none,

and if we do not con with patience and loving care what these hands have penned and tongues uttered we stupidly refuse to enter into possession of a goodly heritage.

Where time permits, foreign literatures should be studied in addition to our own, but in no grade of school should they

Good reading

be studied to the exclusion of our own. In the primary schools time and the immature powers of the pupils do not permit of the study of even our own. The teacher cannot hope to bring much good writing under the

notice of the children, but he can be careful not to bring under their notice any writing that is not good. They cannot read many books; he should strive to secure that the books which they do read are worth reading. He will thus create a taste by means of which his influence will last long after his control is over.

In the earliest reading lessons, those by which children learn to translate the printed symbol into sound, words are introduced not because they are the fittest to express the thought but because they are the easiest to spell, and the style is necessarily bald and inartistic. But prose, and still more poetry, of real literary finish can be introduced earlier than the compilers of school books sometimes imagine. Inferior writers have no monopoly of simplicity. Tennyson's

> What does little birdie say
> In her nest at break of day?

and

> Minnie and Winnie
> Slept in a shell,

and some of Blake's 'Songs of Innocence' (such as 'The Lamb') are exquisite verse, and yet do not contain a word which a child of eight spell or an idea which he cannot understand.

Learning poetry

For the cultivation of taste there is one method more efficacious even than the reading of good books which can be employed in a primary school and which ought to be employed in all schools—the committing to memory of choice extracts from the best authors, and this method has the further advantage of storing the mind in youth with that which will charm and interest it in later years.

The passages selected should:

1. Conform to a high standard. There are miles of verse good enough to read but not good enough to learn.

2. They should be complete in themselves, self-contained, self-explanatory. The arm of a statue may be a beautiful

object in itself, but it has lost something of its beauty and more of its meaning in being detached from the trunk. A work of art must be studied as a whole. The dainty lyrics which stud the plays of Shakespeare and Ben Jonson, though charming as fragments, are more full of significance when not separated from the context. How much Amiens' song, 'Blow, blow, thou winter wind,' gains when we remember that it was sung under the forest trees to the duke who had just been speaking of the 'churlish chiding of the winter's wind,' who had learnt by bitter experience that 'most friendship is vain, most loving mere folly,' and was then suffering the consequences of 'man's ingratitude!' Again, Ben Jonson's 'Queen and huntress, chaste and fair' gains when we remember that it is sung by Hesperus to Diana, and occurs in 'Cynthia's Revels.'

The practice of learning by heart the 'beauties' of an author is, however, to be condemned only when they are detached from works of which the learner is ignorant. When 'Hamlet,' for instance, has been studied there is no reason why the most striking passages should not be committed to memory; on the contrary, there is every reason why they should be.

Suggestions

With regard to the teaching of literature in secondary and higher schools certain considerations may be suggested.

1. What has to be studied is literature, not philology, or Grammar or History. Much valuable information on each of these subjects may be picked up by the way, but the curiosities of the journey must not make the pilgrim forget the shrine which he set out to reach. Books must be considered as works of art, things of beauty, pictures of manners, revelations of the author's mind, contributions to the solution of the problems of life and destiny, *not* as an aggregation of lines to be parsed, analysed and paraphrased, allusions to be explained, and words to be defined and traced to their roots.

study of English classics, but they have, at the same time, helped to foster the delusion that the purpose of the study is to satisfy the examiners. Innumerable editions of the classics have been published, many of them showing sound scholarship, but (with very few exceptions) the trail of the examiner is over them all. If the production annotated be a play, the intentions of the writer, the means by which he obtained his effects, the development of character, the beauties and blemishes of the style are ignored; while the verbal points dear to the heart of most examiners are discussed at great length. The editors do not admire, they dissect.[1]

2. When a work is to be mastered the students should take a comprehensive view of it as a whole before beginning the minute study of any part of it. One cannot understand a part without some knowledge of the whole. On a first reading of the 'Merchant of Venice,' for instance, one would not know who Antonio, Bassanio, Portia and Shylock were; why Bassanio wished to borrow money; or why his rich kinsman was compelled to try what his credit would in Venice do,—all points which would be perfectly clear on a second reading.

3. Books about literature are not literature, any more than a cookery book is a dinner. Manuals giving the biography of a writer, criticisms of his works, the place of each in the history of his own mental development and the mental development of the nation, are valuable as guides to one travelling through his works, but not as substitutes for travel.

4. The study should be systematic, works being selected on some intelligible and well-considered principle. This principle might be psychological, historical, personal, subjective or chronological, though the last certainly should not be adopted except in the case of adults. If youths are compelled,

[1] In illustration of a literary as distinct from a philological treatment of a work of art I may mention Mr. Herbert Bates' edition of the *Rime of*

as they sometimes are, to begin a course with Chaucer, their attention is so much directed to worrying some meaning out of the text that they fail to see the poetry, the humour, the large-hearted humanity of the 'Canterbury Tales.' There might be something to say for a chronological course beginning with contemporary authors and going backwards.

GEOGRAPHY

To the question whether any time should be given to the teaching of Geography no answer is possible without a knowledge of what is meant by 'Geography' and what is meant by 'teaching.' If by 'Geography' is meant long strings of names,—capes, bays, mountains, rivers, natural products, imports, exports, manufactures, towns, &c.—and if by 'teaching' is meant compelling the class to repeat these names, or to learn them from a book, the answer should be an emphatic negative. Such 'Geography' is as useless to the learners as a directory of Timbuctoo would be; such 'teaching' is worse than useless, because it creates disgust. Rather than inflict it upon unoffending children turn them out into the playground, where at any rate they will enjoy themselves, and get some good for their bodies. If, however, the teacher has a true comprehension of Geography and of his own function in relation thereto, the subject is one of the most important that can be included in any curriculum, possessing, as it does, a high practical, educative, and even ethical value.

Is Geography worth teaching?

Rightly conceived, Geography is a science dealing with every aspect of the earth considered as the home of man,—with the distribution of sea and land; with tides and currents; with the structure and indentations of the coast; with the height and direction of mountains; with the length, depth, and speed of rivers; with

What is meant by Geography

grow in that soil; with all the creatures that live on earth, in air or water; with winds and clouds, rain, hail, snow and frost; with heat and cold; with the regular procession of the seasons; with the 'two great lights, the greater light to rule the day and the lesser light to rule the night'; and with the globe itself as a small factor in the vast universe of God.

Of Geography so considered a knowledge is profitable to every one engaged in trade or commerce,[1] is interesting to every one who reads a newspaper, and is necessary to every one who desires to understand the full significance of History. The study of it tends to foster habits of observation; combining the results of observation into inferences exercises and, by exercising, strengthens the reason; the imagination is perpetually called upon to construct pictures of unfamiliar men, animals, places and things out of familiar elements; the memory is stored with vivid and vivifying facts instead of with dead names; perception of the order and beauty of the world awakens the highest impressions of admiration and veneration:

Value of Geography

> He prayeth best who loveth best
> All things both great and small;

and he loveth best who knoweth best.

Geography is a very comprehensive subject, closely allied to History, and having Geology, Botany, Zoology, Ethnology,

[1] 'You shall not learn one single thing of all those you will most want to know directly you leave school and enter upon the practical business of life. You will in all probability go into business, but you shall not know where or how any article of commerce is produced, or the difference between an export and an import. . . . You will very likely settle in a colony, but you shall not know whether Tasmania is part of New South Wales or *vice versâ*.'—Huxley, *Science and Education*, p. 95.

The disasters of the year 1870 led to a great revival of the study of Geography in France. 'Il nous est resté de nos désastres, outre la douleur, un certain sentiment d'humiliation: l'étranger était géographiquement mieux

and Astronomy for auxiliaries.[1] The attainments of a teacher who hopes to be successful must therefore be wide and varied.

The teacher's qualifications

He must have a fairly intimate knowledge of several of the natural sciences, and he must have done some practical work in one or more of them so as to acquire the scientific habit. He must have read enough books of travel or topography to give him a clear conception of the places and things about which he has to speak; and he must have a power of graphic description so as to make those conceptions clear to his pupils also. Geography lessons fail more often from lack of knowledge than from lack of skill on the part of the teacher.

Assuming that the teacher possesses both the knowledge and the skill for his task, when does that task begin? Psychology indicates the answer. Geography is a difficult science, demanding for its strict and definite study experience of the world sufficiently large to furnish materials for mental pictures of sea and land, of towns and places; demanding also faculties sufficiently developed to be capable of making broad generalisations and comprehending the grand scale on which the forces of nature operate. Such strict and definite study must therefore be reserved for the upper classes, though much preparatory work can and should be done in the lower classes,[2] and some even in the Kindergarten.

Time for beginning

Psychology also indicates the kind of preparation which is possible or desirable. In the Kindergarten the drawing of simple

[1] 'In ancient times Geography was viewed as the root-science from which all others branched; now we prefer to view it as the focus at which all the physical and historical sciences converge to throw light on the earth as an organic whole.'—Dr. Mill, *Hints to Teachers and Students on the Choice of Geographical Books*, p. 8.

[2] In Germany Geography is divided into three parts: (1) *Anschauung* (intuition, *i.e.* instruction to develop the intuitive powers) assigned to the lowest class in the primary schools; (2) *Heimatskunde* (home knowledge) assigned to the next four classes; (3) *Erdkunde* (earth knowledge, or Geography proper) assigned to the upper classes.

outlines and the modelling of simple forms may lay the foundation for the subsequent drawing of maps and modelling of slopes and contours. After leaving the Kindergarten children must store materials for the imagination to employ at a future date. The pictures of a great mountain, a great river, a great plain, which they will see with the mental eye will be only an extension and adaptation of their ideas of the hill, the stream, and the level ground which they have seen with the bodily eye; and if the latter are vague the former will be much vaguer. Hence careful observation of the district surrounding the school is an essential preparation for the definite study of the geography of a wider area. So also is careful observation of such common phenomena as mist, rain, snow, wind, sunshine and moonshine. The teacher cannot command the mighty forces of nature and bring them into his school-room for examination, but he can generally show their operation in little. 'The world globes itself in a drop of dew'[1];

Preparatory work

> That very law which moulds a tear
> And bids it trickle from its source—
> That law preserves the earth a sphere
> And guides the planets in their course.[2]

The effect of the sun upon the ocean is the same in kind as the effect of the fire upon the kettle; the power which causes the smoke to rise, causes the wind to blow, and the power which causes the 'breath' to run down the windows on a cold day causes the rain to fall.

For teaching purposes the school is the centre of the universe; and the child's knowledge should extend from it in ever widening circles. Unless he is to spend his whole life in travelling, his knowledge of the outer circles must be obtained mediately or immediately through books, and it is all the more necessary that his

The school the centre

[1] Emerson.

[2] Rogers.

knowledge of the inner circle should be obtained from his own senses, since the clearness of his conception of what he has not seen will be in proportion to the clearness of his perception of what he has seen. The pupil must become acquainted with the surrounding region ; and as it cannot visit him, he ought to visit it.[1]

Open-air lessons

In countries where Geography is earnestly and successfully taught, the lessons not only begin with the neighbourhood of the school, but many of them are given in the open air. The children learn to draw plans of the school-room, the playground, the surrounding streets, the village, and even of the town, if it be not too large, from measurements made by themselves. Walks gradually increasing in length are an integral part of the course. The same point is sometimes visited several times, the observation being drawn each time to one particular set of facts, such as distance, direction, inequalities of surface, natural drainage, rocks, soil, plants, animals, &c. Sometimes a class from a town school will be taken for a whole day into the country to examine trees, flowers, birds, insects, agricultural operations, &c. ; and a class from a country school will spend a whole day in the nearest town, inspecting public buildings, museums, zoological gardens, botanical gardens, &c. ; and the school journey, which is taken on foot, and may occupy several days or even weeks, is considered essential.

Substitute for them

If the regulations imposed by the authorities compel the children to be upon the school premises during school hours, the efficiency of the instruction in Geography is seriously impaired ; but under the most adverse conditions an enthusiastic teacher can accomplish much. He can, for instance, organise little excursions of his pupils on

[1] Mrs. Thrale says that when a little girl she was 'half a prodigy.' There is a tradition that she could repeat the names of most of the rivers of the world, but when asked to name the river at the bottom of the garden (the Thames) she could not tell it.—*Mrs. Piozzi*, vol. ii. p. 10.

holidays and half-holidays; and the teacher who is not enthusiastic can tell his pupils to visit certain places and observe certain things. Thus he may, in a town, say, 'Next Wednesday I shall question you on the houses in the High Street,' and when the Wednesday comes he may ask such questions as :—

> How many houses are there in the High Street?
> What are they built of?
> What kind of stone?
> Where did the stone come from?
> Why are they built of stone and not of brick? *or*
> Why are they built of brick and not of stone?
> Where were the bricks made?
> What is the colour of the bricks?
> Why? &c.

On subsequent occasions he may question on other aspects, —on what is sold in the shops, on what is made in the factories, on the age of the buildings, the history attached to them, &c. If the town is a port the teacher may tell the pupils to visit the docks and ask them such questions as :—

> Was the tide in?
> How many tides are there in a day?
> What ships did you see coming in and going out?
> What were the names of the ships?
> To what ports did they belong?
> What goods did they bring?
> What goods did they take away? &c.

In a country school the teacher may tell his pupils to take a walk to the bridge over the brook and afterwards ask such questions as :—

> Through how many fields did you pass?
> What was the colour of the soil?
> What was growing in each field?
> What animals did you see feeding in the fields?
> What were the farmers' men doing?
> What trees did you pass?
> What flowers were in bloom?

And what insects?
Where did the brook come from?
Where was it going to? &c.

Auxiliaries

However enthusiastic the teacher may be, and however free to choose the best methods, the portion of the earth which he can bring under the actual observation of his pupils is infinitesimal. He must therefore try to make his teaching concrete by the best possible substitutes for, and complements to actual observation,—lantern slides or other pictures showing physical features, towns, buildings of interest, types of races and nations, costumes, vehicles, animals, &c.; samples of ores, minerals, rocks, raw materials, manufactured articles, commercial products, &c.; and above all he must try to give them the power of realising fully and clearly all that a map can convey.

Maps often only partly intelligible

This is a power which (notwithstanding its immense practical and educative value) children seldom acquire, and adults do not often fully possess. It is to be feared that a good many people would find such a map as the Bellman provided for the hunting of the Snark the easiest to read,—

He had brought a large map representing the sea
Without the least vestige of land;
And the crew were much pleased when they found it to be
A map they could all understand.

'What's the good of Mercator's north poles and equators,
Tropics, zones and meridian lines?'
So the Bellman would cry; and the crew would reply
'They are merely conventional signs!

'Other maps are such shapes with their islands and capes,
But we've got our brave captain to thank'
(So the crew would proceed) 'that he's bought us the best,—
A perfect and absolute blank.'

The 'conventional signs' do not convey any particular

meaning.[1] If one were to ask the first ten educated persons (persons, presumably, familiar with an atlas of the world) which is farther west, Bristol or Edinburgh, Plymouth or Inverness, nine of them would probably answer Bristol and Plymouth. And how many of the ten could arrange in order of area England, France, Palestine, India and Australia? Candidates who are asked to draw maps from memory at an examination frequently omit the scale, and not infrequently the lines of latitude and longitude, as if they were no more essential than the colouring of the political boundaries or the shading of the coast. A map, in short, will continue, till the teaching of Geography is much improved, to be a kind of puzzle in which the engraver tries to hide and the student to find the names.

When Geography is very badly taught the teacher assumes that his pupils will, by a kind of instinct, understand the meaning of a map. When it is taught a little better he employs the analytic method, showing a complete map of some country, and attempting to teach the signification of the 'conventional signs.' When it is well taught, he employs the synthetic method, and proceeds (as in all good teaching) from the simple to the complex, and from the concrete to the abstract.

Early lessons on distance

Here again the school-room should be the starting point. The purpose of the early lessons is the acquisition of fundamental ideas of direction and distance, and of the conventional representation of those ideas. Ideas of distance must be got by actual measurement. The teacher begins with the class-room. He paces it, asking the children to count. They tell him that it is, say, 8 paces

[1] 'On borne . . . toujours l'enfant à ces signes sans jamais pouvoir lui faire comprendre des choses qu'ils représentent. En voulant lui apprendre la description de la terre on ne lui apprend qu'à connaître des cartes ; on lui apprend des noms de villes, de pays, de rivières qu'il ne conçoit pas

long and 7 paces broad. One of the pupils then paces it, the rest counting, finding that it is, say, 10 paces long and 8 paces broad. The teacher next measures it with his foot, and finds it is 24 feet long and 20 feet broad. The pupil measures it with his foot and finds that it is 36 feet long and 30 feet broad. The need of a common standard will hence appear, and a foot, yard, or tape will be used in ascertaining the length, breadth, and height of the room, the door, the windows, &c. The same method will be employed with the other rooms, with the external walls, with the playground and (if open-air lessons are permitted) with the neighbouring roads, lanes, fields or streets.[1]

Ideas of direction should be obtained by actual observation. The universal standard, the sun, is happily available during school hours. The children should first note, generally, through which windows he shines at different times of the day. Then they should be taken into the playground and made to note where the shadow of some object, preferably a post, falls at noon. The fact that it always falls in the same place will enable them to fix the north and south (and consequently the east and west), and the fact that it varies in length will afterwards form the basis of lessons on the seasons. The pole star cannot be seen during school hours, but a diagram will enable the children to find it themselves, and continued observation will teach that it is always seen in the same part of the sky. The mariner's compass will then be introduced, and definite lessons on the cardinal points follow. These points should be marked on

and direction

[1] Children should be familiar with certain measurements, such as the length, breadth, and height of the school-room, the length and breadth of the playground, the distance from certain known places, the area of a known park or field, of the parish, of the county, and of the country. These should be constantly referred to as standards of comparison. Populations should be treated in the same way.

the ceiling (or, if there be no ceiling, on the floor) of the school-room.

Plans

The children are now ready for plans, and should again begin with the school-room. The teacher announces that they are going to draw a plan of the room on the blackboard, the walls being represented by straight lines. The length is ascertained to be 24 feet, and one of the children is told to draw a line of that length on the blackboard. As the board is only 5 feet long the impossibility is manifest, and a certain proportionate representation must be agreed upon. The teacher says, 'We cannot draw a line 24 feet long on the board, we must therefore let a smaller line stand for 24 feet. Suppose we say 4 feet. For how many feet of the wall will one foot on the board stand? Now measure the end wall. How long is it? How many feet on the board will stand for it? What kind of angle is that corner? What kind of angle must we make on the board then?' The process should be repeated with different scales till the idea of scale is thoroughly understood. When the children come to draw a plan themselves on paper the idea is further exemplified. The teacher can draw a line 4 feet long on the board, but the longest line which the children can draw on their paper is, say, one foot, and a scale of 2 feet to the inch is the largest which can be employed. When the four walls can be drawn to any scale, the doors, windows, fireplaces and furniture can be dealt with. The next step is a plan showing all the rooms, and the next one showing the whole of the school premises. If outdoor lessons are permitted, the immediate neighbourhood of the school will be dealt with in the same way. If they are not permitted, the teacher will show a plan as large as possible, and make the children recognise every part of it, find out the distances from the scale, and draw it themselves to different scales. The conventional sign for the north should be shown and question

ventional sign will be absent from the first real map exhibited, and the device by which the necessity of inserting it is obviated will have to be explained. A simple map of the county will be dealt with in the same way. The transition from this to the map of the country, and from the map of the country to the map of the continent, will then be comparatively easy.

Every school should have the ordnance maps of the district [1] and of the county, and good wall maps of the various countries,

Maps

but these must be used more for reference than for teaching. They cannot be seen by a whole class at once, and if they could they are so crowded with details that the particular feature to which the teacher wishes to call attention cannot be isolated. The teaching will therefore be based on maps drawn on the blackboard as the lesson proceeds.[2]

It would be well for the children to draw similar maps on paper, but if they have not passed the stage where the mere act of drawing presents difficulties they should be provided with printed maps in which the most important facts are represented very boldly and the less important facts are not represented at all. The insertion of details as they are taught helps to impress them upon the memory, but the copying of maps is not of great value. One can copy a map without paying any attention to the facts represented as one can transcribe a page of a book without paying any attention to the matter. The exercise which is of real value is learning to draw maps from memory. Only the chief features should be learnt, and, provided absolute neatness and accuracy be secured, too much time should not be spent on refinements of printing.

[1] 'I doubt if there is a primary school in England in which hangs a map of the hundred in which the village lies.'—Huxley, *Science and Education*, p. 87.

[2] To save time it is well to have the scale, latitude, longitude, coast-line and political boundaries ready painted on 'slate' or 'blackboard cloth.' There are on the market several series of maps so prepared.

The attempt to study Geography without a map is as futile as the attempt to get a correct notion of a landscape in the dark; but it is often more useful to find *facts from* than to find *names on* a map. With the map of England, for instance, before each child the teacher might ask such questions as the following :—

One way of using a map

What is this a map of?

What is the length of the country from the mouth of the Tweed to St. Alban's Head? [A strip of paper or a pair of compasses will be necessary in order to apply the scale.]

What is the breadth from St. David's to Yarmouth?

How many sides of the country are washed by the sea?

What is the difference between the east coast and the west? [The useless process of telling the children the answer to this question can be gone through in a minute; the useful process of making them think it out for themselves will take a whole lesson.]

Where do the mountains lie?

Which way does the land slope?

In what direction will the longest rivers run?

And the shortest?

How do you account for the length of the Severn?

How long would it be if it rose a few miles further west?

Where are the towns thickest together?

Why? [This question will lead to several lessons on the industries of the country.] &c.

Models and relief maps

'The first beautiful truth that comes to the student of Geography is that the surface of the whole earth is arranged in slopes . . . These . . . meeting at their lower edges form the vast depressions in which are held the oceans of the globe. The same slopes meeting at their upper edges form the great . . . continents.' The slopes influence soil, temperature and drainage, and, because they influence these, influence also vegetable and animal life.[1] Models are the most effective method of making the slopes concrete, and if the children have been taught to model, they

are the method which should be employed. Relief maps are of some use, but they are open to the objection that elevations can be rendered visible only when the vertical scale is very much larger than the horizontal. If only one scale were adopted in a map of England 9 feet by 8, Snowdon would be barely one-sixth of an inch high. The utility of a relief map therefore depends upon its inaccuracy, and if the inaccuracy be too great, false impressions will be conveyed. The photograph of a relief map is a cheap and not ineffective substitute for the map itself.

Various methods

If several courses of lessons were planned according to the concentric scheme recommended in the preceding pages, and each course were broadly divided into groups, there would probably be considerable similarity between the subjects included in each group, but there would probably be considerable difference between the arrangement of the subjects within the groups and between the treatment of individual subjects. One course might emphasise physical, another political, another commercial, another historical facts; one might take these facts separately, another in combination; one might chiefly cultivate the memory, another the imagination, another the thinking powers; one might contemplate the use of a text-book by the teacher or by the pupils, another oral lessons based not on any special book but on a wide course of reading.

Text-books

Text-books may be serviceable storehouses of facts, or they may be serviceable in revision, but it is a poor teacher who would be content with simply setting so much of any book to be 'got up,' and there are not many books which a good teacher would closely follow in his instruction. Most books give information without reasons, and by classifying the information dissociate phenomena naturally related. They dissociate capes from openings, for instance, though both are the results of the same forces; they dis-

sociate mountains from plains and rivers from lakes, though the length and character of the rivers and the size and position of the lakes are regulated by the height and direction of the mountains and the extent and elevation of the plains.

Whether the concentric scheme be or be not followed in planning a course of lessons, whether the text-book be or be not followed in giving the lessons, the great aim of the teacher should be the cultivation of his pupils' intelligence. Isolated truths have little educative value, strings of proper names (often mis-spelt, generally mis-pronounced) have none, but stimulating questions which will make the child see the relation between facts see which are antecedent and which consequent, which are cause and which effect, will help him to remember as well as to understand,—to remember because he understands. He will remember, for instance, that the rainfall in Cumberland is much greater than that in Norfolk, and he will remember that Cumberland is hilly and Norfolk flat, that the moisture-bearing clouds come from the Atlantic, and that the prevalent winds are westerly, when he understands the connection between the two sets of facts. Similarly he will remember and understand why the land gains on the sea in Lincoln and the sea gains on the land in the neighbouring part of Norfolk; why the east coast generally is devoid of openings and the west coast much indented; why the large towns are situated on the sea, near the mouths of rivers, or on coalfields; why the British are a leading commercial nation; why the Celtic-speaking people survive in Wales and the Highlands; why the empires of the ancient world had their origin in the alluvial valleys of mighty rivers; why the natives of mountainous regions are brave and liberty-loving, and why they are often divided into small communities, &c., &c. And he will not only remember facts because he understands reasons, he will do something still

Cultivation of the intelligence

And his mind will grow humble as well as inquiring; when he cannot find a reason he will infer not that there is none to find, but that his knowledge is insufficient. Geography will thus become to him an interesting and profitable study, not the dull and useless task it too often is.[1]

[1] 'Accuse geography of being dry! You might as well accuse the ocean of being dry.'—*Herder*.

HISTORY

THE detached facts which are sometimes called History deserve no more to be so called than detached wheels deserve to be called a steam engine. Before facts can become History they must be selected according to some consistent idea, and arranged so as to show their mutual relations,—in short, they must be organised. Till organised they are not worth learning or teaching; when organised they constitute an exceedingly profitable study.

Historical facts must be organised

There is no subject more likely to interest. Terence makes Chremes say that being a man he deems nothing human indifferent to him. Every child is in this respect a Chremes. His boundless curiosity embraces the past as well as the present,—embraces the past with as much ardour as the present if it is made as real. When little ones have been told a story they generally ask, 'Is it true?' and if the narrator can answer 'Yes,' their interest is greatly increased. History is a succession of stories all true.

Reasons for teaching History.—1. Interest

There is no subject more likely to rouse the imagination. It concerns itself not with words, like Grammar, not with abstract ideas, like Mathematics, but with the doings of actual men and women. It therefore furnishes material which, with the aid of a skilful teacher, children can work up into vivid pictures.

2. Imagination

History is a fine mental discipline. The Greeks distinguished between the knowledge of phenomena and the knowledge of causes,—between the knowledge *that* and the know-

ledge *why*. However taught, History is, more or less, an illustration of the first; well taught, it is an excellent illustration of both. At its lowest it is a series of facts, at its highest a series of organised facts. The study of these, being pre-eminently a study of the relations between cause and effect, is a valuable training.

3. Mental discipline

Furthermore, it is, in its advanced stage, when authorities have to be compared and weighed, a preparation for life. Separating what is relevant from what is incidental, and what is probable from what is impossible; judging what opportunities the witness had for knowing the truth, and what motives he might have for misrepresenting it; and, generally, estimating the credibility of conflicting testimony, are essential in the domain of History, but they are no less essential in the affairs of every day. Exactly the same powers of the mind are called into operation in deciding whether Richard killed his nephews in the Tower as in deciding whether Mr. Jones killed his neighbour's cat in the garden.

4. Preparation for life

History fosters patriotism. It fills the student with admiration for his forefathers' wisdom, heroism, and devotion to duty, which have made the nation what it is; with longings for a chance of emulating their glorious deeds; and, failing that, with a firm resolve to do nothing that shall tarnish the fair fame of their common country, and to pay the debt which he owes his ancestors,

5. Patriotism

> By transmitting down entire
> Those sacred rights to which himself was born.

It is no mere coincidence that with the Jews, the most intensely patriotic people that the world has ever known, their historical books should be sacred, and the regular reading of them a religious duty.

The study of History should be a necessary preliminary to the performance of civic obligations. Ours is a land

> Where freedom slowly broadens down
> From precedent to precedent.

Our constitution is, not the symmetrical creation of an Abbé Siéyès, but a gradual growth, intelligible only by a reference to its past. 'History is past politics,'[1] and present politics become clear in the light which it throws upon them.[2]

6. Morals

Finally, History has a powerful ethical influence. Conduct springs from feelings rather than from intellect, and the effect of History upon them can hardly be overestimated. We insensibly pass moral judgments on the actions of persons of whom we read; we have our favourites among them, and we wish to emulate those whom we admire.

A complete course

A complete course of study should extend over about eight years, and include a detailed history of our own country, viewed from several standpoints; a more summary history of the modern nations with which we have had dealings; an intelligent and (on the 'classical side' of a school) a full account of Greece and Rome; and some acquaintance with the ancient Eastern Empires.

In planning a series of lessons for such a course one has to think of more than the logical and chronological sequence of the facts,—one has to think of the mental growth of the

[1] E. A. Freeman.

[2] Mr. Herbert Spencer ridicules the idea that History can 'illustrate the right principles of political action.' He says 'the biographies of monarchs (and our children learn little else) throw scarcely any light upon the science of society. . . . Supposing that you diligently read not only "the Fifteen Decisive Battles of the World," but accounts of all other battles that history mentions, how much more judicious would your vote be at the next election?' Mr. Spencer's argument is utterly irrelevant, for no teacher would attempt to base his teaching of Civics on either the biographies of monarchs or the details of battles. He is equally wide of the mark when he contends that history should be read for amusement only, the facts which it presents being 'facts from which no conclusion can be drawn,—*unorganisable* facts.' *Unorganised* by bad teachers, if

pupil. What would be impossible to a child of ten would be easy to a boy of fifteen and puerile to a youth of eighteen.

Arrangement

The teacher must, therefore, give only elementary instruction on the history of the countries taken first, and only advanced instruction on the history of the countries taken last, or he must go over the whole course more than once, varying his treatment according to the gradual development of the pupils' minds.

The latter is the method followed in Germany. There are three surveys. The first occupies from the age of ten to the age of twelve. The lessons are confined to interesting stories and biographies of great men.

The German method

The second survey occupies the next three years, and attention is devoted more to national movements than to personal incidents, more, for instance, to the Second Punic War than to Hannibal, more to the struggle between the popular and senatorial parties than to Cæsar and Pompey, more to the Crusades than to Peter the Hermit, Godfrey of Bouillon, Richard Cœur de Lion or Saladin. Attention is also paid to dates and to the relation between cause and effect. During the third survey still more stress is laid on the connection between cause and effect; there is a thorough revision of the history of Greece and Rome; the epoch-making events of mediæval times are studied in outline; the military, political, and social history of the fatherland in modern times is studied fully; and a year may be given to an 'intensive' or minute examination of some particular period, such as the era of the Renaissance, of the Reformation, or of the French Revolution.

In primary schools, where the course must be limited to three or at the most four years, nothing can be included beyond the history of our own country, and only the simple concrete aspects of that can be exhibited. Political and social questions cannot be made clear to a child to whom an election means only an

Primary school course

themselves hoarse without apparent reason, and to whom law means only a policeman. Hence psychology and time concur in limiting the ground which the primary teacher can cover, but of even that ground a double survey is desirable,—the first personal and picturesque, and the second more purely historical. If the second only were attempted it would be too difficult for the younger pupils, and many of the older pupils might leave before it was completed,—would leave knowing least of the times which concerned them most. They would be able to write a clear narrative of the Battle of Hastings, but the Battle of Waterloo would be nothing more than a name to them; Elizabeth would be more real to them than Victoria, Faulkland and Hampden than Disraeli and Gladstone.

Oral instruction

In primary schools the instruction should throughout be oral. There are on the English market a considerable number of 'Historical Reading Books.' Most of them are well printed and illustrated and some of them well written, but no book can be an efficient substitute for the living teacher. Any book which gave all the explanations necessary for perfect simplicity, and all the little touches that add vividness to a narrative, would be long and expensive, and, if neither length nor cost were an objection, printed words would not appeal to the children with the same force as spoken. The little books of outlines which are so plentiful are useful, if accurate and well compiled, and employed merely to impress the main facts on the memory after they have been taught in the oral lesson.

Aids

The task of making the past as real as the present to children whose reading and experience of the world are both small is not easy, and it can be accomplished only by contrasting and comparing the past with the present. Pictures, objects, and all other aids to the imagination should be freely utilised, and if there are any historical monuments in the district the teaching should centre around

centre around a cromlech, on the Romans around a camp, on the Feudal System around a castle, and on the Reformation around a ruined abbey.

Choice of matter

The judgment of the teacher will be shown as much in what he omits as in what he attempts to teach. The short time at his disposal compels him to omit very much, and while he cannot afford to pass over the picturesque details which make a lesson interesting, he should aim rather at exhibiting a connected view of the history of the people than incidents in the lives of kings and queens. Green in his 'Short History' devoted 'more space to Chaucer than to Cressy, to Caxton than to the petty strife of Yorkists and Lancastrians, to the Poor Law of Elizabeth than to her victory at Cadiz, to the Methodist Revival than to the escape of the Young Pretender,' and though a teacher of the young would not make the same selection as the writer of a book for adults, the principle of selection should be the same.

Dates

The sequence of events should be clearly marked, but there is no need to teach many dates, and the few that are taught should be taught as far as possible by contrast or comparison ; *e.g.*

1215. The Great Charter.
1415. Agincourt.
1815. Waterloo.

1314. Bannockburn.
1415. Agincourt.

1588. The Spanish Armada.
1688. The Revolution.

THE EDUCATION OF INFANTS

HISTORY

THE veriest savage teaches his offspring hunting, shooting, swimming, or whatever art may be necessary for their preservation. Hence education, in the sense of a preparation for life, is as old as the human race. And education in the sense of school instruction must be as old as the art of writing. Without education the art could not have been transmitted from generation to generation ; and without education the records of the past would have become unintelligible. Even in Persia, where the boys were said to be trained only in riding, shooting with the bow, and speaking the truth, the training was given collectively in public buildings provided for the purpose.

Infant schools are modern

Schools for older children (or at any rate for older boys) being thus as ancient as civilisation, it is remarkable that schools for infants should be quite a modern innovation. The explanation is probably threefold :

Why

1. The belief that the children of the poor need schools of any kind is itself a modern innovation.

2. For other children maternal teaching was probably considered sufficient during the period of infancy. It *is* sufficient if mothers have the time, the inclination, and the ability to undertake it. If time, inclination, or ability be lacking the director of the Kindergarten is the best substitute for the

mother, and in any case the Kindergarten offers a better soil than the home for the growth of the social instincts.

3. Infants are incapable of receiving instruction of the kind usually given to older children. The discovery that education is not synonymous with such instruction is comparatively recent; consequently, schools for infants are also comparatively recent.

Oberlin

The first of which we have any account was established by Jean Frédéric Oberlin, who was for fifty-nine years (1767–1826) pastor of the Ban de la Roche. Like Chaucer's 'Good Man of Religioun' he was poor in worldly wealth,

> But riche he was in holy thought and werk.
> He was also a lerned man, a clerk
> That Cristes gospel truly wolde preche;
> His parischens devoutly wold he teche.
> Benigne he was and wondur diligent
> And in adversité ful pacient . . . .
> Wyd was his parisch and houses fer asondur.

The Ban de la Roche

This parish consisted of several narrow gorges lying high in the Vosges and separated from Alsace by the vast plateau of the Champ-du-Feu. Its character is indicated by its German name, Steinthal (stone valley). The devastations of war had added to the misery induced by a rigorous climate and scanty soil; while the entire absence of roads cut the people off from the civilising influence of intercourse with the world. When Oberlin entered upon his duties there were no schools of any kind. In the days of his predecessor there had been what was called a school. A few of the Waldenbach boys and girls assembled daily in the hut of a bedridden old man who could neither read nor write, and who, rendered unfit by the infirmities of age for looking after the village pigs, had been degraded to looking after the village children.

Oberlin was wonderfully prolific in schemes for the physical

intellectual, moral, and economic amelioration of his flock; but his greatest hope and trust lay in the education of the young. With true insight he saw that if he could only devise plans for forming the young of one generation there would be no necessity for him to devise plans for reforming the adults of the next, and he therefore made the provision of means of education his first care. Although the manse was so ruinous that rats frolicked in his bedroom, and rain pattered on his bed, he would not hear of a new one till a school had been built in each village, and as the people were afraid of the cost he made himself personally responsible.

Schools established

In the winter of 1769 he heard that Sara Banzet was, on her own initiative, teaching the children of Belmont an art almost unknown in the Ban—the art of knitting. In order to overcome her father's objection that she was wasting her time, Oberlin took her into his own service, and she thus became the first of his *conductrices de la tendre jeunesse*. Her example was followed by others, notably by Louise Schepler, who was for sixty years the most devoted of Oberlin's fellow-workers in the cause of infant education.[1]

The first teachers of infants

Oberlin started with a clear perception of the ends to be attained and of the principles to be applied, but it was only by experience that he found how best to apply the principles to attain the ends. His system when perfected embraced three grades—schools for infants, schools for older children, and schools for adults. The aims of the infant school were :—

Oberlin's school system

1. To root out bad habits.

[1] In 1829 the Académie française recognised her noble service to humanity by awarding her the Montyon grand prix de vertu. She accepted the prize, but would not accept the honour which Cuvier in his report ascribed to her of originating the idea of infant schools. That, she

2. To cultivate good habits, such as obedience, truthfulness, courtesy, kindness, and neatness.

3. To inculcate the first notions of morality and religion.

4. To teach the elements of Reading, Writing, and Arithmetic.

5. To discourage the use of patois and accustom children to the use of standard French.

The little ones were assembled in airy, spacious rooms, where the *conductrices* watched over them with motherly care.

The infant school

Amusement had a large part in the scheme. The youngest children played together while the rest were learning to spin, to knit, and to sew. Natural history and Scripture were taught by means of pictures. A good deal of attention was given to drawing, and the painting of maps became one of the home occupations of the long winter evenings. In fine weather the *conductrices* took their charges for walks and made them find the flowers which had been described to them. These formed the subject of familiar talks, and the children were inspired with a desire to grow the flowers, for which purpose the parents willingly gave up little plots of garden.

Oberlin's plans succeeded beyond expectation, and when his fame was noised abroad, benevolent persons from various parts of France, as well as from foreign countries, visited his mountain home to study them at first hand. In 1801 M^me^ de Pastoret established in Paris a *salle d'hospitalité* somewhat on the model of his infant schools; but, either because the conditions were adverse or because she failed to catch the spirit of his method, the experiment was not very successful, and the original of the *salles d'asile* (which ultimately developed into the *écoles maternelles* or infant schools of France) may be traced rather to New Lanark than to the Ban de la Roche—to a Welsh cotton-spinner [1] rather than to the Strasburg pastor.

A Paris copy

Almost immediately after Arkwright's invention of the water frame, David Dale, one of the pioneers of Scotch industry, established cotton mills on the banks of the Clyde about a mile from Lanark. He employed a thousand 'hands' and built for them and their families a large village called New Lanark. When he retired he sold the mills, and Robert Owen carried them on for the buyers. Owen held very strong views as to the duties of employers, and immediately began to put these views into practice. As the business continued to pay large dividends his partners winked at his economic heresies for some time, but when he proposed to spend 4,000*l.* on the erection of schools[1] they objected strongly. He bought them out and took other partners, but they proved equally unenlightened. Owen then went to London and found among the promoters of the British and Foreign School Society enthusiasts for education who joined him in acquiring the mills.

New Lanark

He was now free to carry out his schemes. He built a school containing five large halls, several smaller rooms, and a swimming bath, and providing accommodation for about 500 children. In 1816 Owen stated in his evidence before the Committee appointed 'to inquire into the education of the lower orders,' that there were then 213 children under, and 231 over, six years of age in attendance. In answer to the question, 'What is the plan adopted by you?' he said:

The schools

'The children are received into a preparatory or training

an apprenticeship to a draper, started in a small way at Manchester as manufacturer of cotton machinery, achieved great success as works manager, was offered a partnership in a prosperous business, married David Dale's daughter, and became director of the New Lanark mills which his firm had bought. He died at Newtown in 1858.

[1] The juvenile population was abnormally large from the fact that hundreds of orphan children from the poor-houses were employed at the

school at the age of three, in which they are perpetually superintended, to prevent them acquiring bad habits, to give them good ones, and to form their dispositions to mutual kindness, and a sincere desire to contribute all in their power to benefit each other; these effects are chiefly accomplished by example and practice, precept being found of little use, and not comprehended by them at this early age; the children are taught also whatever may be supposed useful, that they can understand, and this instruction is combined with as much amusement as is found to be requisite for their health, and to render them active, cheerful and happy, fond of the school and of their instructors. The school, in bad weather, is held in apartments properly arranged for the purpose; but in fine weather the children are much out of doors, that they may have the benefit of sufficient exercise in the open air. In this training school the children remain two or three years, according to their bodily strength and mental capacity; when they have attained as much strength and instruction as to enable them to unite, without creating confusion, with the youngest classes in the superior school, they are admitted into it; and in this school they are taught to read, write, account, and the girls, in addition, to sew; but the leading object in this more advanced stage of their instruction is to form their habits and dispositions. The children generally attend this superior day school until they are ten years old; and they are instructed in healthy and useful amusements for an hour or two every day during the whole of this latter period. Among these exercises and amusements they are taught to dance; those who have good voices to sing; and those among the boys who have a natural taste for music are instructed to play on some instrument. At this age both boys and girls are generally withdrawn from the day school, and are put into the mills or to some regular employment. Some of the children, however, whose parents can afford the wages which the children

longer in the day school, by which they acquire an education which well prepares them for any of the ordinary active employments of life. Those children who are withdrawn from the day school at ten years of age and put into the mills, or to any other occupation in or near the establishment, are permitted to attend, whenever they like, the evening schools, exercises, and amusements, which commence at from one or two hours, according to the season of the year, after the regular business of the day is finished, and continue about two hours; and it is found that out of choice about 400 on an average attend every evening. During these two hours there is a regular change of instruction and healthy exercise, all of which proceed with such order and regularity as to gratify every spectator, and leave no doubt on any mind of the superior advantage to be derived from this combined system of instruction, exercise, and amusement.'

Asked 'How many masters have you in the day schools?' Owen said, 'Generally ten or eleven; in the evening schools usually two or three more;' and to the question, 'Is the expense of this institution considerable?'[1] he answered in memorable words, 'It is, apparently; but I do not know how any capital can be employed to make such abundant returns as that which is judiciously expended in forming the character and directing the labour of the lower classes.'

Owen's son adds some details. The children under six were in charge of James Buchanan and Mary Young. No attempt was made to teach them Reading or Writing or even their letters, nor had they any set lessons. Much of their time was spent in a spacious playground. They were trained to be orderly and clean, to abstain from quarrels, and to be kind to each other. They were amused with childish games and with stories suited to their capacity. The children under four had a room to themselves, and those from four to six another, which was hung with pictures of animals and with maps, and furnished with

[1] No fees were charged.

natural objects from the garden, fields, and woods. These suggested themes for conversation or for brief familiar lectures, but there were no tasks, and, in fact, nothing formal. No corporal punishment, no threat, no violent language was allowed.[1]

The success of the infant department was largely due to the happy choice of a master. Buchanan was a weaver with little learning and no experience of teaching, but lack of learning was not regarded as an important drawback where the communication of knowledge was not regarded as an important object, and lack of experience was condoned in a man who possessed in an eminent degree patience, sympathy, tact, readiness of resource, and an intuitive power of managing young children.

Buchanan

Owen's economic experiments, of which the school was only a branch, excited great interest. From 1815 to 1825 nearly twenty thousand persons, many of them bearing distinguished names, visited New Lanark, and some, at any rate, of them went away resolving to imitate part of what they had seen. Lord Brougham, the Marquis of Lansdowne, Lord Dacre, Zachary Macaulay, John Smith, Joseph Wilson, and others in 1818 opened an infant school at Brewer's Green,[2] Westminster, and borrowed James Buchanan to start it. In July, 1820, Joseph Wilson opened another in Quaker Street, Spitalfields.

First London school

Buchanan had made the acquaintance of Samuel Wilderspin, clerk to the New Jerusalem Church, Waterloo Road, London, and was pleased to discover that he had thought much about the education of infants and had arrived at some original ideas on the subject. When, therefore, a master was required for the Spitalfields school, Buchanan suggested Wilderspin, who, 'after some deliberation,' accepted the appointment offered.

Samuel Wilderspin

[1] Robert Dale Owen, *Threading my Way*, p. 90.

[2] Afterwards removed to Vincent Square, Westminster.

On the morning when he entered upon his duties there were about 150 children present. 'A few who had been previously at a dame school sat quietly, but the rest, missing their parents, crowded about the door. One little fellow, finding he could not open it, set up a loud cry of "Mammy! Mammy!" . . . . and all the rest simultaneously joined. My wife,' he says, 'tried with myself to calm the tumult, but our efforts were utterly in vain. The paroxysm of sorrow increased instead of subsiding, and so intolerable did it become that she could endure it no longer and left the room; and at length, exhausted by effort, anxiety, and noise, I was compelled to follow her example, leaving my unfortunate pupils in one dense mass, crying, yelling, and kicking against the door. . . . Ruminating on what I then considered egregious folly in supposing that any two persons could manage so large a number of infants I was struck by the sight of a cap of my wife's, adorned with coloured ribbon, lying on the table, and observing from the window a clothes-prop, it occurred to me that I might put the cap upon it, return to the school and try the effect. The confusion when I entered was tremendous; but on raising the pole surmounted by the cap all the children, to my great satisfaction, were instantly silent. . . . There would have been a sad relapse but for the marchings, gambols, and antics I found it necessary to adopt, and which at last brought the hour of twelve, to my greater joy, than can easily be conceived.'[1]

First experiences

Wilderspin displayed in the discharge of his new duties unbounded enthusiasm, considerable insight into child-nature, and no little power of inventing new or adapting old devices for overcoming his novel difficulties. We owe to him, for instance, the invention of the gallery, once an indispensable fixture in every infant school, and the adaptation of the ball frame[2] (or, as he called it, the transposition frame).

An estimate

[1] *Early Discipline*, p. 3.

[2] He also called it the Arithmeticon. It appears to have been first

Owen's chief aim had been healthy amusement, useful occupation, and the formation of good habits. Wilderspin emphasised the need of moral training, made religious instruction and the games of the playground an essential part of such training, introduced 'object lessons' (which, however, consisted chiefly of the naming of objects), and added instruction in Reading, Writing, Arithmetic, Geometry, Botany, Natural History, Geography, Grammar, and even Astronomy. In attempting so much in the way of instruction he seems to have sacrificed his own convictions to the prejudices of the public, for he himself correctly states the principle with which his own practice was at variance. He remarks, 'It has been a charge brought against the system that we are not sufficiently anxious to teach the children to read &c. Now, though I may venture to say that under no other plan do the children acquire a knowledge of the characters of the alphabet and the formation of words as soon as under the present, yet I am quite ready to concede that I consider their learning to read a secondary object to that of teaching them to examine into and find out the nature and property of things, of which words are but the signs. It is with *things* and not *words* we wish to make our children acquainted.'[1]

Wilderspin had had no training or experience, and his reading did not enable him to profit by the training or experience of others. In his anxiety to claim the whole credit of originating infant schools he admits, almost boasts of, his ignorance of the history of education. His system, he said, had been ascribed to Pestalozzi. 'That he might long ago have practised a similar system I should not have denied had it been asserted, but . . . . the first edition of this work was written before I had read a single work on the subject of infant education by that individual or any other; and the

described in a work on Arithmetic by Friend about the end of the eighteenth century.

[1] *Infant Education*, p. 148.

plan described in it was that which necessity, the long-reputed mother of invention, taught me during my labours as master of the Spitalfields Infant School.'[1]

Considering his defective preparation for his work it is surprising that Wilderspin should have re-discovered so many old truths, and succeeded in throwing a new light on some of them. But it is not surprising that he should have failed to apply correctly some of his own theories. In the passage already quoted he rightly insists that things should come before words, yet in actual practice he sometimes ignored things altogether and exhausted his ingenuity in the search for methods of making words easy to remember. In teaching the tables, for instance, instead of employing concrete illustrations, he trusted to rhymes, such as—

Theory v. practice

Sixteen drams are just an ounce,
As you'll find at any shop;
Sixteen ounces make a pound,
If you should want a mutton chop.

Infant Education, p. 300.

Twenty grains make a scruple—some scruple to take;
Though at times it is needful, just for your health's sake.—*Id.* p. 301.

Take barley-corns of mod'rate length,
And three you'll find will make an inch;
Twelve inches make a foot—if strength
Permit, I'll leap it and not flinch. . . .

But what's the girt of hell or heav'n?
(No nat'ral thought or eye can see)
To neither girt or length is given;
'Tis without space—Immensity!—*Id.* p. 301.

Two pints will make one quart,
Four quarts one gallon strong:
Some drink but little, some too much,
To drink too much is wrong.—*Id.* p. 302.

A little wine within
  Oft cheers the mind that's sad;
But too much brandy, rum, or gin,
  No doubt is very bad.—*Id.* p. 303.

Sixty seconds make a minute;
  Time enough to tie my shoe;
Sixty minutes make an hour,
  Shall it pass and nought to do?—*Id.* p. 303.

After the opening of the Spitalfields school the movement spread with fair rapidity. A meeting was held in London under the Presidency of the Marquis of Lansdowne to establish an Infant School Society. The Society engaged Wilderspin as agent. His duty was to try to induce the benevolent to start schools, and, if he succeeded, to organise such schools and instruct the masters and mistresses in his methods. The Society did not last long, but Wilderspin severed his connection with it before its untimely end, and the rest of his life was spent in missionary efforts on his own account. He found that the readiest means of inciting people was to show them what infants taught by him could do, and we accordingly read of his taking classes in carts from Harden Grange to Keighly, by steamer from Glasgow to Greenock and from Greenock to Rothsay, and by stage coach from Glasgow to Edinburgh.

Infant School Society

The school at Glasgow prospered for a fortnight, when the attendance mysteriously fell off. One of the children had been asked by his mother, 'Well, Sandy, what hae ye been at?' He answered, 'Eh, mither, we've been counting the beads,' and an alarm spread through the neighbourhood that the school had been started to promote the spread of the Roman Catholic religion. A stern Protestant investigator having been convinced that the ball frame was not an instrument of the Propaganda the children returned and the school flourished.

A scare in Glasgow

At the end of a month there was a public examination of the school in the presence 'of no less than a thousand of the most respectable and influential persons in Glasgow.' 'While the examination of the children as to form, size, and position was proceeding, one gentleman asked them the position of the pillars by which the gallery was supported, when there was a general exclamation of "perpendicular." After many similar questions he inquired whether the chandelier before was suspended or supported, to which they promptly replied "suspended." To try them still further, he asked them to tell him what difference there was between being supported and suspended; when a little boy took from his pocket a piece of string at the end of which was a button; placing the button on the palm of his hand, he answered, "That is supported," and holding the end of the string so as to let the button fall, he said, "That is suspended." . . . At length he wished them to mention something not previously named which was perpendicular, when . . . a little black-eyed boy . . . shouted out "Ye're ane yer-sel." The effect of this was so ludicrous that the composure of our friend was a little disturbed, but soon rallying, he said, "Suppose I were to strike Mr. Wilderspin and knock him down, would he be perpendicular then?" To this the answer was immediate, "No! he'd be ho-ri-zon-tal."'[1]

A public examination

Wilderspin had gone to Glasgow at the invitation of David Stow.[2] Business caused Stow to pass through one of the low quarters of the city daily, and charity led him to visit some of the houses in that quarter regularly. Shocked by the degradation and depravity which everywhere met his gaze, he resolved that what one honest, earnest man could do to bring about a reform should be done. He knew that success was more likely with the young than with those who were confirmed in evil habits, and he began by establish-

David Stow

[1] *Early Discipline*, p. 129.

[2] Born 1793, died 1864.

ing a school open every Sunday night for the instruction of all who could be persuaded to attend. He found, however, that his efforts were dissipated by being spread over too large an area, and he started a second school, the pupils of which were drawn exclusively from the lanes contiguous. He was thus able to concentrate his attention upon one small neighbourhood, and his success was so encouraging that the 'Local system' spread till about 9,000 children were brought together under it. But ten years' :perience convinced him that one evening spent in a religious atmosphere did little to counteract the influence of seven days and six evenings spent in the streets, and in 1826 he determined to try the effect of a day school. '"Prevention is better than cure" was our motto,' he said afterwards, 'and to begin well we cannot begin too early My first object, therefore, was to begin with children under six years of age, before their intellectual and moral habits were fully formed, consequently when fewer obstacles were presented to the formation of good ones.' [1]

His first infant school

The building situated in Drygate Street was capable of holding about a hundred, and the master chosen, David Caughie, was a born teacher of infants. Stow, having heard of the movement in London, visited Wilderspin, saw his system at work, and invited him north. The greatest result of the interest awakened was the founding in 1836 of the Glasgow Church of Scotland Normal School,[2] where Stow's Training System was fully developed.

The Training System

He laid great stress on the distinction between training and teaching. 'In Scripture,' he says, 'the command is given, "Train up a child in the way he should go," and the promise attached to the precept is, "and when he is old he will not depart from it." Whatever may have

[1] *The Training System*, p. 33.

[2] At the Disruption in 1845 Stow was compelled to leave this Institution, and the Glasgow Free Church Normal School, over which he presided

been done in families, training the child has not been the practice hitherto in popular schools. Teaching or instruction has been given, not training, or at the best the head has been trained, not the child—the whole man. We have, therefore, no right to expect the fulfilment of the promise which is attached to the precept. . . . We understand then the precept to be "train," not simply teach or tell; and the whole nature of the child, not merely his intellect or memory; *up* from the beginning of life to manhood "in the way he should go." . . . The child's affections, and physical and moral habits, must be properly exercised and trained.'[1]

Training was the end proposed; one of the chief means was 'picturing out in words.' This, Stow says, is 'attained by the various processes, viz. simultaneous and individual questions and answers, simultaneous and individual ellipses, naturally mixed and arranged; analogy and *familiar* illustrations, and physical exercises by both master and scholars including the influence of the eye, tones of voice, &c., the "sympathy of numbers" being the oil-spring of the whole process.'[2]

'Picturing out'

This definition is not very clear, but an illustration will throw light upon it. A local member of Parliament, visiting one of the schools, expressed himself satisfied that the Training System was worthy of attention, but added that he did not precisely understand the distinction between teaching and training. The 'master-trainer' said that the children were then reading an account of the Israelites being forced to make bricks without straw. If he were to tell them why straw was necessary, that would be *teaching*; but if he were to make them tell him, that would be *training*. He therefore 'brought out of them by analogy the difficulty of breaking a bunch of straw, however thin; what the effect would be of layers of straw in parallel lines, being mixed with clay while yet in a soft state,

render the bricks more tenacious, or at least less liable to break. He then brought out from the children that the bricks were not burned in Egypt, seeing, as they told him, that if so the straw used would have been of no service, as in the process of burning the bricks the straw must be reduced to ashes; that straw in this country would be of no use in the making of bricks, seeing that we *burned them* and that we could not get them sufficiently dried in ordinary seasons by the sun, even in summer; all which the gallery of children readily told by the use of ellipses mixed with questions. From the nature of the climate of Egypt . . . they inferred that the bricks might be dried in the sun—also that the clay could not be so firm or solid or tenacious as ours, when they required straw to strengthen it. They therefore thought that the clay in Egypt must be more sandy than ours, seeing that our brickmakers did not require to use straw to strengthen the bricks. Thus the mode of drying bricks in Egypt, and the nature of their clay compared with ours, was determined by Analogy and Familiar Illustrations without *telling*.'[1]

Stow deserves well of his country, but his claim to be remembered as a thinker on education rests, like Wilderspin's,

An estimate

rather upon his re-assertion of old truths than upon his enunciation of new ones. He emphasised—he did not discover—the distinction between teaching and training, instruction and education, the cultivation of memory and the development of faculties, the acquisition of knowledge and the formation of habits, and indeed he had a tendency to over-emphasise it, for he tacitly assumed that the things were antagonistic as well as different. 'Picturing out,' which was the fly-wheel of his system, is only another name for eliciting, and the sympathy of numbers has been felt ever since people with a common interest or a common purpose began to assemble together.

[1] *The Training System*, p. 322.

While Stow was zealously promoting one plan of infant education in Scotland other men were as zealously promoting another plan of infant education in England, and the year which saw the establishment of a college in Glasgow for the training of infant teachers saw the beginnings of a college in London for the same purpose. The Rev. Charles Mayo, 'D.D. 'profoundly convinced of the truth of Pestalozzi's views and warned against his errors by long actual observation of their consequences,' at Yverdun, 'determined to attempt the introduction of his method into this country, religiously preserving the idea, but adapting the form to those circumstances in which he might be placed. He considered that the most effectual mode of accomplishing this end was to devote himself to the formation and conduct of a school in which the arrangement and practical application of those principles might be made. To exhibit the system in operation, to elaborate by means of experiments, continually repeated, a course of instruction, and above all to prepare materials for an appeal to actual results, seemed to him a far more useful and effectual, though less brilliant, process than that of dragging it before reluctant audiences at public meetings, or of advocating its merits in the periodical publications of the day; he was content that it should be buried in oblivion for a while, assured that if it possessed the life of truth it would spring up with renovated vigour.' With his sister he therefore set up at the village of Cheam, in Surrey, a school for the children of the upper classes, and from time to time gave the results of his observations to the world in the form of little books of 'Lessons.' A common zeal brought the Mayos into contact with Mr. John Stuckey Reynolds, and together they conceived the idea of applying the principles of Pestalozzi to the education of the poor. The result was the establishment in 1836 of the Home and Colonial Infant School Society [1] for the 'extension of the infant school

The Home and Colonial Society

system on Christian principles' by the provision of a supply of properly trained Christian teachers.

This was the greatest service that could be rendered to the cause of infant education and the beneficial consequences of the Society's work were soon apparent. In 1846, only ten years after the establishment of the Society, Joseph Fletcher,[1] one of the earliest inspectors, stated in his report on infant schools that teachers of the older style were generally found in the older schools. To them must be allowed the merit of 'having been among the first to explore these now well-trodden paths of Christian duty,' but little beyond this merit could be generally allowed them ; nor was it surprising that desultory individual efforts should be outstripped by the combined exertions of gifted and faithful minds such as had co-operated to form and maintain the Home and Colonial Infant School Society.[1]

The result

'Previous and even subsequent to the date of its formation some of the promoters of infant schools appear to have considered them merely as asylums for healthy amusement under some degree of discipline and moral control . . . a purpose which is in no wise sacrificed in the more modern schools. Others seem to have thought that they presented opportunities likewise for mental development, and some process of learning to read and account were introduced from the plans of Bell and Lancaster, never calculated for infants, while others again . . . early made oral instruction from the Scriptures a part of their plan. This, though made so prominent as almost to supersede the purposes first contemplated, was yet carried out so crudely' that Mr. Fletcher 'saw many traces of its having often and grievously failed through employing no other faculty than the memory, and exercising it almost exclusively upon words without educating the infant mind to the remotest conception of their

Defects of some infant schools

[1] *Minutes of the Committee of Council*, 1845, vol. ii. p. 217.

meaning.[1] The most fatal error, however, was the leaven of intellectual display which . . . appears to have crept into a good many of those establishments of earlier foundation. It seems to have produced in some of them . . . the prodigy system under which the quicker children were to be wonders of envy and admiration of the rest, and the whole school in which they were exhibited one of admiration if not of envy to its friends and neighbours on the occasion of each examination,[2] which might more truly have been described as a little drama in which the cleverer children had each their little part of representation by rote. Conceit, envy, and fretfulness, ill-restrained by fear were the leading moral elements of such a system, and stultifying verbal repetition its chief intellectual exercise.'[3]

The theory of all the more modern infant schools which Mr. Fletcher visited appeared to contemplate an education at

[1] Plenty of evidence might be quoted in confirmation of Mr. Fletcher's opinions. Thus the Rev. W. Johnson, the superintendent of the National Society's School at Westminster, stated in 1834 that, in his opinion, the mode of instruction was so defective that he had seen nothing in infant schools to enable him to speak favourably of them. The teaching at one time seems to have been almost limited to requiring little children to learn chapters of the Bible by heart. In fact, it was once stated in public that every lesson should have either an intermediate or indirect reference to the sacred volume. 'If,' says one, 'the lesson should be on the subject of a flower, the children should be taught to remember every passage in Scripture in which the word flower is mentioned. They should be reminded that "man cometh forth like a flower and is cut down."' The Bible, in fact, was in most infant schools the only class book, and the alphabet was a Scriptural adaptation of 'A was an archer who shot at a frog,' *e.g.*,

> G is for Goshen, a rich and good land;
> H is for Horeb, where Moses did stand;
> K is for Kadesh, where Miriam died;
> L is for Lebanon, can't be denied.

Bartley, *The Schools for the People*, p. 109.

[2] The seeds of this evil may be distinctly seen in the displays which Wilderspin originated and organised.

[3] Fletcher, *loc. cit.*

once physical, intellectual, industrial, moral, and religious. The occupations of each child were more or less directed into all these channels. In fact, to implant good habits of body, heart and mind, which should grow with the growth and strengthen with the strength of the child, was the largest part of the work undertaken by the best infant schools. Mr. Fletcher proceeds to describe the routine of these, and his description is an interesting proof of the great progress which had been made since Wilderspin converted his wife's cap into a standard.

The best schools in 1846

That progress continued to be maintained as the number of trained teachers increased, and the improvements suggested by experience were introduced. The best schools of 1876 were as superior to the best schools which came under the observation of Mr. Fletcher in 1846 as those in turn were superior to the dame schools. But even in 1876 the school for infants was too much a copy of the school for older children. Too much importance was attached to set lessons, and instruction was too often allowed to usurp the place of education. Within the next few years, however, a wonderful change occurred. There was a transformation not only of methods but of aims; the infant school became the children's garden, and when the methods of the Kindergarten were not expressly adopted, the spirit of its founder breathed upon the dry bones of formalism.

and in 1876

FROEBEL AND THE KINDERGARTEN

Friedrich Wilhelm August Froebel was born at Oberweissbach, a village in the Thuringian Forest, in the small Principality of Schwarzburg Rudolstadt, on April 21st, 1782, the fifth son of the chief pastor of the district. The childhood of the man who did so much to make the childhood of others bright and profitable was gloomy, if not unhappy. His mother died when he was nine months

Infancy

old, and his father devoted himself to the oversight of the temporal and spiritual affairs of his widely scattered parishioners with a stern conscientiousness that left no time or inclination for the oversight of the forlorn little parishioner under his own roof. Till the boy was four he was left to the care of maid-servants who neglected him ; then he came under the care of a step-mother, who would have added to his comfort if she had neglected him also.

The manse was shut in by the church in front, by buildings on both sides, and by a steep hill behind.

Love of Nature

'For a long time,' he says, 'I remained thus deprived of any distant view ; but above me I saw the sky clear and bright . . . and around me I felt the pure fresh breeze [1] stirring. The impression which that clear sky and that pure air made on me has remained ever since present to my mind. My perceptions were thus limited to only the nearest objects. Nature, with the world of plants and flowers, so far as I was able to see and understand her, early became an object of observation and reflection to me.' [2] To Froebel's lonely and circumscribed childhood we may probably trace, besides his intimacy with plants and flowers, his delicate health and that early habit of introspection which seems foreign to a free, robust boy.

Under his father's instruction he learnt reading so slowly that he was set down as a dunce and packed off to the village girls' school.

First school

The perfect neatness, quiet, intelligence, and order which reigned there had, he says, a remarkable influence on the development of his inner self. The text which the children were repeating in unison on the day of his admission ('Seek ye first the Kingdom of God and His righteousness and all these things shall be added unto you') made such an impression upon him, that forty years later every word and every tone were still vivid in his

[1] Oberweissbach is 3,000 feet above the level of the sea.

mind. Froebel leaves us in doubt as to whether in this school he acquired a knowledge of any books except the Bible and the hymn book, but he mentions his 'unceasing self-contemplation, self-analysis, and self-education,' and notes the great joy with which he proved to his own satisfaction that he 'was not destined for hell.'

Second school

When he was nearly eleven years of age his mother's brother, Herr Hoffmann, who held a position of some eminence in the Church at Stadt-Ilm, came on a visit. He noticed that his little nephew was surrounded by adverse influences and took him to live with him. Nothing better could have happened to the boy. He exchanged the austerity of his father's house for the gentleness of his uncle's; mistrust gave way to confidence, restraint to liberty. He was sent to the town school, and after a while grew strong and agile enough to join in the games of his schoolfellows. Froebel enjoyed his uncle's sermons because they were pervaded by a beautiful charity. He enjoyed still more the religious instruction of his teacher, which, though too philosophical and abstruse for an ordinary child, was exactly suited to the needs of an extraordinary child with a natural love for the philosophical and the abstruse. In addition to religion, the subjects best taught in the school were Reading, Writing, and Arithmetic. Latin was miserably taught and miserably learned. In Physical Geography the tasks were merely parroted. 'The teaching,' he says, 'had not the very least connection with the real life, nor had it any actuality for us, although . . . we could rightly name our little specks and patches of colour on the map. . . . As for . . . instruction in German it was not to be thought of, but we received directions in letter-writing and in Spelling. I do not know with what study the teaching of Spelling was connected, but I think that it was not connected with any; it hovered in the air.'[1]

[1] *Autobiography*, p. 20.

Looking back on his school life, he reflects 'how eminently injurious it is in education and in instruction to consider only a certain circle of future activities or a certain rank in life. A wearisome old-fashioned education *ad hoc* (that is for some one special purpose) has always left many a noble power of man's nature undeveloped.'[1]

A reflection

Whatever the special purpose to which the education of Froebel had been directed it seems to have missed its aim, for he made several false starts before finding his true career. He spent two years as a forester's apprentice; then he was allowed to go to the University of Jena, where he spent a year and a half in study, and nine weeks in prison for a debt of about five pounds. It was only after he had tried in succession being clerk, land surveyor, and private secretary that he found his life work. He had gone to Frankfort on the Main to learn architecture when a schoolmaster friend said to him, 'Give up architecture, it is not your vocation at all. Become a teacher. We want one in our school.' Froebel accepted, and shortly afterwards wrote to his brother, 'Even in the first hour my duties did not seem strange to me. It appeared to me as if I had been a teacher and was born to it. . . . It is plain to me now that I was really fitted for no other calling. . . . In the hours of instruction I feel myself as truly in my element as a fish in the water or a bird in the air.'

Froebel becomes a teacher

Having become a teacher, Froebel remembered reading of a teacher in Switzerland named Pestalozzi, whose views were exciting some attention, and he resolved to visit him. In the autumn of 1805, therefore, he spent a fortnight at Yverdun seeing the methods there practised. He observed them with more interest than understanding, because his own notions of teaching were as yet only a memory of his schooldays, and because the system itself was not based on any complete and consistent principles. When Pestalozzi was

At Yverdun

[1] *Autobiography*, p. 23.

asked to give an account of his ideas or intention, he used to answer, 'Go and look for yourself ['Very good,' says Froebel, 'for one who knew *how* to look, how to hear, and how to perceive'] ; it works splendidly.'

In 1808 he was back again at Yverdun for a long stay. In the July of the preceding year he had undertaken the education of the three sons of a Frankfort gentleman on two conditions—that they should live in the country and be handed over entirely to his care. He was already disgusted with the methods which he had seen followed in schools, though a long time was to elapse before he succeeded in bringing his own into orderly sequence and organic unity. At first the routine with his pupils 'consisted in merely living, lounging, and strolling in the open air, and going for walks. From the circumstances of my own culture,' he says, 'I eagerly fostered to my utmost every budding sense for Nature that showed itself, and there soon developed amongst them a life-encompassing, life-giving, and life-raising enjoyment of natural objects. In the following year this way of living was further enhanced by the father giving his sons a piece of meadow-land for a garden.'[1] When winter rendered outdoor employments impossible, Froebel found occupation for himself and his pupils in 'the easy art of impressing figures and forms by properly arranged simple strokes on smooth paper,' which led to making forms out of paper itself, out of pasteboard, and, finally, out of wood. In spite, however, of all his thought and all his ingenuity, he concluded that his own lack of training unfitted him for the adequate training of others, and he obtained permission to take the boys to Yverdun.

Private tutor

They lodged close to the Institution and shared in its whole life. As on the previous occasion, Froebel saw much that was imperfect, but, like every one else who came within the circle of Pestalozzi's influence

At Yverdun again

he was carried away by the prevailing vigour and enthusiasm. 'Thus did the power and manysidedness of the educational effort make up for deficiency in unity and comprehensiveness; and the love, the warmth, the stir of the whole, the human kindness, and benevolence of it replaced the want of clearness, depth, thoroughness, extent, perseverance and steadiness.'[1] Struck with this want Froebel became a scholar in all subjects and thus succeeded in constructing for the system what he convinced himself was a more complete and more consistent theory than Pestalozzi himself could formulate.

Play

He was greatly pleased with 'the boys' play, a whole series of games in the open air, and learned to recognise their mighty power to awaken and strengthen the intelligence and the soul as well as the body.' He detected in them 'the main spring of the moral strength which animated the pupils and the young people of the Institution. Closely akin to the games in their morally strengthening aspect were the walks . . . especially when conducted by Pestalozzi himself. These walks were by no means always meant to be opportunities for drawing close to Nature, but Nature herself, though unsought, always drew the walkers close to her.'[2]

His summary

Summing up his impressions he says, 'On the whole I passed a glorious time at Yverdun, elevated in tone and critically decisive for my after life. At its close, however, I felt more clearly than ever the deficiency of inner unity and interdependence, as well as of outward comprehensiveness and thoroughness in the teaching there.'[3]

Keilhau

He returned to Frankfort in 1810; in 1811 he entered himself at the University of Göttingen; in 1812 he removed to the University of Berlin, and in 1813 he answered his country's call for men to resist the invasion of Napoleon. His career as a soldier was bloodless, but it had an important effect upon the development of his

system, because it gave him for messmates two divinity students, Heinrich Langethal and Wilhelm Middendorf, who had thought much about education. Around the camp fires they discussed his theories, and after the peace they joined him in putting these theories into practice. In 1816 he had started at Griesheim 'the Universal German Educational Institute,' of which he was himself the only teacher, and his five nephews the only pupils. Next year the Institute was transferred to Keilhau; his two friends were added to the teaching staff, and the number of pupils increased. The many vicissitudes in its life, and Froebel's own multitudinous labours, wanderings, and difficulties between its establishment and the establishment of another Universal German Institute, the Universal German Kindergarten, must be passed over in silence.

As early as 1826 Froebel had pointed out in his great book, 'The Education of Man,' the extreme importance of continuous development from one point. 'It is highly pernicious to consider the stages of human development—infant, child, boy or girl, youth or maiden, man or woman, old man or matron—as really distinct, and not, as life shows them, as continuous in themselves in unbroken transitions; highly pernicious to consider the child or boy as something wholly different from the youth or man, and as something so distinct that the common foundation (human being) is seen but vaguely in the idea and word, and scarcely at all considered in life and for life.'[1]

Continuous development

Subsequent experience and reflection only deepened his conviction of the truth of this view. Continuous education was a necessary corollary of continuous development, and Froebel concluded that the most urgent practical reform was the establishment of schools for children younger than those admitted into the

The first Kindergarten

existing schools. In February, 1837, he opened his first in an old powder mill at Blankenburg.[1]

His idea had obtained a local habitation, but it still wanted a name. At one time he thought of calling it the 'Nursery school for children' or 'the Self-teaching Institution;' at another he inclined to a longer title, 'the Institution for the culture of family life and for education towards national and individual life through the culture of the instinct for activity, enquiry and creation inherent in man —that is in the child—as a member of the family, of the nation, of mankind; that is to say, an Institution for the self-teaching, self-education, and self-culture of man by means of play, of creative original activity, and of voluntary self-instruction, for families and national schools.'

The name

Weighted with such a name the Institution could not make any progress, and Froebel still racked his brains for a better. 'Middendorf and I[2] were one day walking to Blankenburg with him over the Steiger Pass. He kept on repeating, "Oh! if only I could think of a suitable name for my youngest born." Blankenburg lay at our feet, and he walked moodily towards it. Suddenly he stood still as if rooted fast to the spot, and his eyes assumed a wonderful, almost refulgent brilliancy. Then he shouted to the mountains, so that it echoed to the four winds of heaven, "Eureka! I have it! Kindergarten shall be the name of the new Institution."'[3]

The name was not purely fanciful. 'As in a garden under God's favour and by the care of a skilled intelligent gardener

[1] Blankenburg is a village near Keilhau. The building is still used as a school, and a tablet on the front states 'Friedrich Froebel established his first Kindergarten here on June 28th, 1840.' The reason for this date is given on p. 245.

[2] Barop, a faithful fellow-worker, who married Froebel's niece.

[3] *Autobiography*, p. 137. 'Perhaps we can hardly understand the

growing plants are cultivated in accordance with Nature's laws, so here, in our child-garden, our Kindergarten, shall the noblest of all growing things, man (that is children, the germs and shoots of humanity) be cultivated in accordance with the laws of their own being, of God, and of Nature.'[1] The word was meant to indicate also that 'the culture of Nature herself, especially the care of plants and flowers, must form part of the work.'[2]

Meaning of the name

The Institution was solemnly christened on June 28, 1840, when the 400th anniversary of Gutenberg's invention of printing was celebrated with much pomp and ceremony, but it never grew strong, and its languishing life came to an end in 1844. Froebel's own life came to an end in 1852, the intervening period having been spent in attempting to popularise his opinions, and in training teachers to carry them out. His grave at Schweina is marked by a pedestal with the cube, the sphere, and the cylinder of his second gift standing upon it, but

Death of Froebel

> For his honoured bones
> The labour of an age in piled stones

would be a needless monument. Every school throughout the world where infants are trained with care and skill to develop all the powers of their nature by self-activity is a living and abiding monument.

Though Froebel strove so persistently to obtain a clear and connected view of the principles underlying the educational systems of others, it is impossible to obtain from his writings a clear and connected view of the principles underlying his own system. The methods identified with his name were of slow growth, and as his published works cover a period of thirty years they exhibit not his matured

'The Education of Man'

[1] *Froebel's Letters* (Michaelis and Moore), p. 101.

[2] *Id.* p. 164.

opinions,[1] but every stage in their development. And they do not exhibit anything luminously; his meaning is obscured both by a bad style and by a constant tendency to symbolism.[2]

It would be as difficult to present skeletons of his books as to present skeletons of pearl oysters. One can only pick out a few of the pearls.

'In all things there lives and reigns an eternal law. . . . This all-controlling law is necessarily based on an all-pervading, energetic, living, self-conscious, and hence eternal Unity. . . .

[1] His complete opinions are not set forth even in his complete works. He always hoped to be able to do for the later periods of childhood what he had already done for the earliest.

[2] Such examples as the following might be amplified indefinitely:—

'The sphere is the symbol of diversity in unity and of unity in diversity.' It is 'the representation of diversity developed from the unity on which it depends, as well as the representation of the reference of all diversity to its unity.' It is 'the general and the particular, the universal and the individual, unity and individuality at the same time. It is infinite development and absolute limitation; it connects perfection and imperfection.'—Hailmann's *Education of Man*, p. 169.

'The pure and perfect crystal, which represents, even in its outward form, the relative intensity in the different directions of the inner force, is formed when all the individual particles and all the individual points of the active force subject themselves to the higher law of a common requirement and of the integral representation of the law of formation, a higher law which, though it may hamper and fetter individual particles or points, yet yields the greater, perfectly formed product.'—*Id.* p. 171.

'The number five . . . appears in nature and among life-forms as uniting the character of the numbers two and three . . . hence as developed under the influence of life-force it is truly the number of analytic and synthetic life representing reason, unceasing self-development, self-elevation.'—*Id.* p. 192.

'Collating such words as *fresh*, *free*, *frolic*, *freak*, *fruit*, *friend*, *fry*, and again, *flee*, *flight*, *flame*, *float*, *flow*, *flood*, *floor*, *flesh*, *fleet*, he finds in the first series the expression of spirituality manifested in a diversity of outward activities indicated by the sounds *fr*, and in the second series the expression of spirituality manifested in continuous inner activity indicated by the sounds *fl*. In both series the sound *f* would point to the spirituality, *r* and *l* being due to its different manifestations.'—*Id.* p. 316.

This Unity is God. . . . It is the destiny and life-work of all things to unfold their essence, hence their divine being, and therefore the Divine Unity itself.'—*The Education of Man* (Hailmann), p. 1.

'Education consists in leading man, as a thinking, intelligent being growing into self-consciousness, to a pure and unsullied, conscious and free representation of the inner law of Divine Unity, and in teaching him ways and means thereto.'—*Id.* p. 2.

'Education should lead and guide man to clearness concerning himself and in himself, to peace with Nature, and to unity with God; hence it should lift him to a knowledge of himself and of mankind, to a knowledge of God and of Nature, and to the pure and holy life to which such knowledge leads.'—*Id.* p. 5.

'Education in instruction and training . . . should necessarily be passive, following (only guarding and protecting) not prescriptive, categorical, interfering.'—*Id.* p. 7.

'We grant space and time to young plants and animals because we know that, in accordance with the laws that live in them, they will develop properly and grow well; young animals and plants are given rest, and arbitrary interference with their growth is avoided, because it is known that the opposite practice would disturb their pure unfolding and sound development; but the young human being is looked upon as a piece of wax, a lump of clay, which man can mould into what he pleases.'—*Id.* p. 8.

'All true education in training and instruction should therefore, at every moment, in every demand and regulation, be simultaneously double-sided—giving and taking, uniting and dividing, prescribing and following, active and passive, positive yet giving scope, firm and yielding; and the pupil should be similarly conditioned: but between the two, between educator and pupil, between request and obedience, there should invisibly rule a third something, to which educator and pupil are

necessarily conditioned and expressed without arbitrariness in the circumstances. The calm recognition, the clear knowledge, and the serene, cheerful obedience to the rule of this third something is the particular feature that should be constantly and clearly manifest in the bearing and conduct of the educator and teacher, and often firmly and sternly emphasised by him. The child, the pupil, has a very keen feeling, a very clear apprehension, and rarely fails to distinguish whether what the educator, the teacher, or the father says or requests is personal or arbitrary, or whether it is expressed by him as a general law and necessity.'—*The Education of Man* (Hailmann), p. 14.

'The child should from the very time of his birth be viewed in accordance with his nature, treated correctly, and given the free, all-sided use of his powers. By no means should the use of certain powers and members be enhanced at the expense of others, and these hindered in their development. . . . The child should learn early how to find in himself the centre and fulcrum of all his powers and members, to seek his support in this, and, resting therein, to move freely and be active, to grasp and hold with his own hands, to stand and walk on his own feet, to find and observe with his own eyes, and to use his members symmetrically.'—*Id.* p. 21.

'The feeling of community, first uniting the child with mother, father, brothers and sisters, and resting on a higher spiritual unity, to which, later on, is added the unmistakable discovery that father, mother, brothers, sisters, human beings in general, feel and know themselves to be in community and unity with a higher principle—with humanity, with God—this feeling of community is the very first germ, the very first beginning of all true religious spirit, of all genuine yearning for unhindered unification with the Eternal, with God.'—*Id.* p. 25.

'The vigorous and complete development and cultivation of each successive stage depends on the vigorous, complete

and characteristic development of each and all preceding stages of life.'—*The Education of Man* (Hailmann), p. 28.

'The child, the boy, the man, should know no other endeavour but to be at every stage of development wholly what this stage calls for.'—*Id.* p. 30.

'The activity of the senses and limbs of the infant is the first germ, the first bodily activity, the bud, the first formative impulse; play, building, modelling are the first tender blossoms of youth, and this is the period when man is to be prepared for future industry, diligence, and productive activity. Every child, boy, and youth should devote daily at least one or two hours to some serious activity in the production of some definite external piece of work. Lessons through and by work, through and from life, are by far the most impressive and intelligible, and most continuously and intensely progressive, both in themselves and in their effect on the learner.'—*Id.* p. 34.

'Play is the highest phase of child-development—of human development at this period; for it is self-active representation of the inner—representation of the inner form from inner necessity and impulse.'—*Id.* p. 54.

'The word and the drawing are always mutually explanatory and complementary. . . . The drawing properly stands between the word and the thing, shares certain qualities with each of them, and is, therefore, so valuable in the development of the child. . . . The faculty of drawing is, therefore, as much innate in the child, in man, as is the faculty of speech, and demands its development and cultivation as imperatively as the latter; experience shows this clearly in the child's love for drawing, in the child's instinctive desire for drawing.'—*Id.* p. 79.

'The child—your child, ye fathers—follows you wherever you are, wherever you go, in whatever you do. Do not harshly repel him; show no impatience about his ever-recur-

ring questions. . . . Do not, however, tell him in words much more than he could find himself without your words. To have found one-fourth of the answer by his own effort is of more value and importance to the child than it is to half hear and half understand it in the words of another ; for this causes mental indolence. Do not, therefore, always answer your children's questions at once and directly ; but, as soon as they have gathered sufficient strength and experience, furnish them with the means to find the answers in the sphere of their own knowledge.'—*The Education of Man* (Hailmann), p. 86.

'Fathers, parents, what we no longer possess—the all-quickening, creative power of child-life—let it again be translated from their life into ours.

'Let us learn from our children, let us give heed to the gentle admonitions of their life, to the silent demands of their minds.

'Let us live with our children, then will the life of our children [1] bring us peace and joy, then shall we begin to grow wise, to be wise.'—*Id.* p. 89.

'To give firmness to the will, to quicken it, and to make it pure, strong, and enduring, in a life of pure humanity, is the chief concern, the main object in the guidance of the boy, in instruction and the school.'—*Id.* p. 96.

[1] This celebrated saying, '*Kommt lasst uns unsern Kindern leben!*' is frequently translated, 'Come, let us live *for* our children.' *Unsern Kindern* is the Dative Case, and implies here, devotion *to*, absorption *in*, harmony *with* the life of our children. It seems to me that this is more fully expressed by the preposition *with*. *With* implies that both we and the children are equally active ; *for* seems to place the burden on *us*, and renders the children passive recipients of our bounty.—*Hailmann's note*, p. 89.

'The Dative here does not merely mean *to* or *for* our children, it means *with* them. What parents are there who do not live for their children by trying to leave them property, and, if possible, a name! That is not enough ; and it is useless, or worse, if the parents cannot impart to them something better—*a noble character*.'—Karl Froebel, *Explanation of the Kindergarten*, p. 1.

'During the previous period of childhood the aim of play consisted simply in activity as such; its aim lies now [during boyhood] in a definite, conscious purpose; it seeks representation as such, or the thing to be represented in the activity.'—*The Education of Man* (Hailmann), p. 112.

'These fairy tales and stories will very clearly reveal to the observer what is going on in the innermost mind of the boy . . . whatever he feels in his heart, whatever lives in his soul, whatever he cannot express in his own words, he would fain have others express.'—*Id.* p. 117.

'How the serene happy boy of this age rejoices in song! He feels, as it were, a new, true life in song.'—*Id.* p. 118.

Common means of education

Froebel insists that education is the joint work of the school and the home, and he indicates ten directions for this 'unified school and family life.' These are:

1. The arousing, strengthening, and cultivating of the religious sense. For this purpose we have the learning by heart of religious utterances concerning nature, men and their relation to God, and particularly of utterances to be used in prayer.

2. Consideration, knowledge, and cultivation of the body, to be developed in orderly graduated exercises.

3. Observation and study of nature and the external world, proceeding from the nearest surroundings to the more remote. [This involves walks and school journeys.]

4. Learning by heart of short poems concerning nature and life, especially of short poems that impart life to the objects of nature in the nearest surroundings, and consequently to the incidents of home-life.

5. Exercises in language.

6. Exercises in representation of outward forms, by means of paper, cardboard, wood-work, modelling, etc.

7. Exercises in representation of outward forms by means of lines in squares.

8. The study of colours, and the representation of them in prescribed outlines.

9. Play or representations and exercises of all kinds in free activity.

10. Narration of stories and legends, fables and fairy-tales, with reference to the incidents of the day, of the seasons, of life, etc.[1]

The Gifts

The essence of Froebel's theory is that the development of man is continuous, and his education must therefore be continuous also; and that the work of the educator is the promotion of the self-activity of the educated in every function of his being, body, mind and spirit. For the complete training of infants according to this theory he devised a series of gifts and games.[2]

The twenty gifts are:

1. Six soft woollen balls of different colours—red, orange, yellow, green, blue, and violet.
2. A sphere, a cube, and a cylinder made of wood.
3. A large cube consisting of eight small cubes.
4. A large cube divided into eight oblong 'bricks.'
5. A large cube, which, being divided into three parts in each dimension, produces twenty-seven smaller cubes.
6. A large cube divided into twenty-seven oblong 'bricks.'

[1] *The Education of Man*, pp. 234-236 (condensed).

[2] A distinction is often made between *gift* and *occupation*, the sphere, for instance, being called a gift, and clay modelling an occupation, but the distinction is neither Froebelian nor necessary. Froebel called all the occupations *plays*, and all the materials for occupations, *gifts*. Clay is therefore as much a gift as the sphere, and the use which is made of the sphere is as much an occupation as modelling. There are altogether twenty gifts according to Froebel's general definition of the term, although the first six only are generally designated by this name.—Wiebe's *Paradise of Child-*

Six of the oblongs are cut in halves, forming twelve cubes; three are cut lengthwise, forming six columns, making altogether thirty-six pieces.

7. Five boxes of tablets made of wood and painted in different colours.

The first box contains squares.
The second box contains right-angled isosceles triangles.
The third box contains equilateral triangles.
The fourth box contains obtuse angled isosceles triangles.
The fifth box contains scalene triangles.

8. 'Sticks.'
9. Rings and half rings.
10. Materials for drawing.
11. Materials for perforating.
12. Materials for embroidering.
13. Materials for cutting paper and combining the pieces.
14. Materials for braiding.
15. Laths (in America called 'slats') for interlacing.
16. The joined lath.
17. Materials for intertwining.
18. Materials for paper-folding.
19. Peas and wire.
20. Materials for modelling.

Use of the Gifts

The use which is made of these gifts is described fully in various practical works, such as Wiebe's 'Paradise of Childhood,' and Bates's 'Kindergarten Guide.' As an illustration Miss Bates's treatment of the second gift is quoted:

1. What it consists of

Gift II. consists of a sphere, cylinder, and cube, all made of wood. They are inclosed in an oblong box similar to the box of Gift I., and may be suspended in a frame, the materials for which are found in the box.

(*a*) Gift II. forms a perfect connecting link between Gifts I. and III.

2. Its use.

(*b*) It is an excellent preparation for future Gifts and Occupations. The circle of the cylinder and the square of the cube prepare for drawing and writing, and also for Gifts III., IV., V., and VI., which are all closely connected with this one.

(*c*) The children are happy in watching the movements, and in learning all about the qualities of the different objects.

The first lesson of Gift II. might begin with a talk about the box. It is the same shape as the box of Gift I., but shorter, because it has not so many things to hold. It has a sliding lid in which are two holes to hold the frame (see fig. 7).

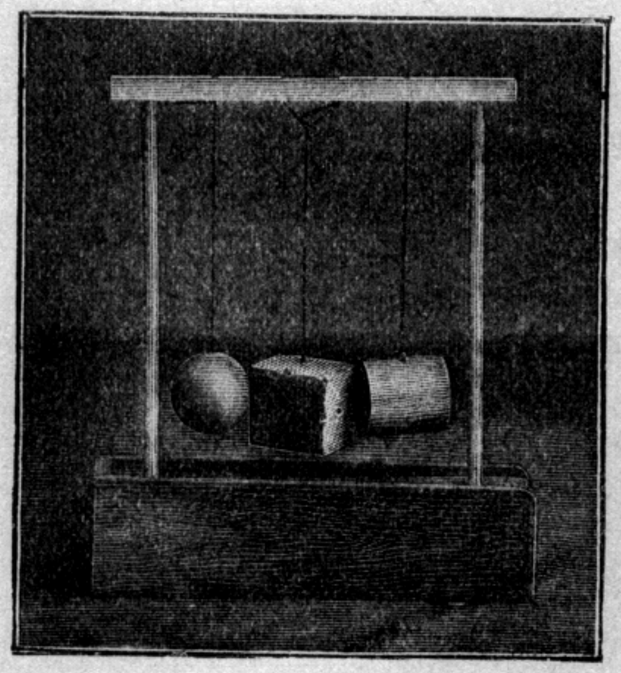


FIG. 7

Show the sphere with one of the soft balls, let a child feel both. 'The ball is soft, the sphere is hard.' 'Why is the sphere hard?

3. Comparison of the sphere with Gift I.

'Because it is made of wood.' 'Why is the ball soft?' 'It is made of wool.' 'The sphere is smooth, while the ball is rough. Now let us feel the weight of the ball and sphere.' (Let a child hold the ball on one hand, and the sphere on the other.) 'The sphere is heavy and the ball is light.' 'If we drop the ball it makes very little noise, but the sphere makes quite a big noise.'

The ball is soft, but hard the sphere,
That's why it makes the noise you hear;
The sphere is heavier than the ball,
And smoother, say the children all.

All the games of Gift I. may be played with the sphere, and the various motions, swinging, jumping, etc., may be practised also. There is a brass loop on the sphere, to which the string may be fastened when it is used for movements.

4. Comparison of sphere and cylinder

'What can the cylinder do that the ball can do?' 'It can roll.' 'Why can it roll?' 'Because it is round.' 'But it is not round like the ball. How is it different?' 'It is flat at both ends.' 'The ball has only one face, but the cylinder has three, and on two of them it can stand. What have you seen like a cylinder?' 'A rolling-pin, a jar, etc.'

The cylinder may be suspended from the hook in the centre of one of the flat faces, and may be used for the motions of Gift I.

The cylinder is round,
It rolls upon the ground,
Or stands quite still, if we
Place it on end you see.

FIG. 8

FIG. 9

Fig. 8.—If the cylinder be held with a double string attached to the hook in its side thus (fig. 8), and rotated quickly, a sphere will be seen.

Turn, turn quickly and you'll see.
Ball so round appear in me.

Fig. 9.—If the string be attached to the hook at the edge of the flat face thus (fig. 9), a double cone is seen.

Now another figure see,
Two round cones appear in me.

By means of these little exercises the child begins to learn that one form is contained in another. The sphere contains both the cube and cylinder, and the cylinder contains the cone. When the children learn clay modelling they prove this for themselves.

The sphere is round, the cube has not one round face, all its faces are square. Let us see how many faces the cube has. One

5. The cube and sphere

at the front and one at the back, two. One at the right side and one at the left, two more; one at the top and one at the bottom, two more; (touch each face as it is mentioned, and let the children count). The cube, then, has six faces, while the sphere has only one, which is round, and all the cube's faces are square. Then the cube has corners, count them, there are eight; and the sphere has no corners. The cube has edges round its square faces (count the edges), there are twelve, and the sphere has not one edge. We will try to make the cube roll. 'Why cannot it?' 'Its corners and edges will not let it roll.' 'But it can stand. On what does it stand?' 'It stands on one of its square faces.' 'Can it stand on an edge or corner?' 'Not unless we hold it.' (Let the children try to make it stand on its edge.)

The Cube

Eight corners, and twelve edges, see,
And faces six, belong to me;
One face behind, and one before,
One top, one bottom, that makes four,
One at the right, at left side one,
And that counts six, if rightly done.

Exercises with the cube

Fig. 10.—If the cube be suspended by a double string from the centre of one of its square faces, and rotated quickly, a cylinder is shown.

Turn me quickly, and you'll see
Like a cylinder I'll be.

Fig. 11.—When the cube is suspended by a hook in the centre of one of its edges, and turned quickly, a form is shown that resembles the hub of a wheel.

A funny figure here is found,
When I am twisted round and round
You've seen it in a wheel, maybe,
It is the hub that looks like me.

FIG. 10

FIG. 11

When the cube is suspended by a hook in one of the corners, and quickly turned, it looks like a double cone.

Swinging by my corner
Quickly round I go,
Looking like two round cones,
With their points you know.

6. The sphere, cylinder, and cube

The children should now see the three together, and note the points of resemblance. The cylinder can roll like the sphere, or stand like the cube; it has the qualities of each, and is, therefore, the connecting link between them.

The children may be allowed to distinguish the objects of

Gift II. by touch only. Let a child come out and be blindfolded, or close its eyes without being blindfolded, then give to it the sphere, or cylinder, or cube, while the children say :—

Guessing game

Close eyes tight,
That is right ;
As you stand,
Hold your hand ;
Feel with care,
What is there ;
Tell its name,
That's the game !

When the correct name is obtained the teacher asks, 'How did you know it was the cylinder?' (supposing this has been the form given), and the child is encouraged to give the reason why he knew.

Games constituted so important a part of Froebel's system that his nephew Karl gives *Play School* as the best English equivalent of *Kindergarten*. But the term *games* as used by Froebel means much more than simple play ; it means play skilfully directed to the exercise of the limbs, to the expression of the emotions, to the strengthening of the character, and even to the imparting of knowledge. The games grew naturally out of the 'Mutter- und Kose-Lieder' published in 1843. This, as the title indicates, is a book of songs intended for the use of mothers. Each song had a commentary in which the appropriate movements for the child were described, and its moral or educational significance was pointed out. In *Patsche-Kuchen*, for instance, the movements associated with the English Pat-a-cake are described, and we are told that the game 'had its origin in an effort to make the impulsive movements of the infant the means of introducing him to a knowledge of the activities about him, and to their reciprocal relationships. The bread or, better still, the little cake which the child likes so much he receives from his mother; the mother, in turn, receives it from the baker. So far so good. We have found two links in the great chain of life and service.

Mutter- und Kose-Lieder

Let us beware, however, of making the child feel that these links complete the chain. The baker can bake no cake if the miller grinds no meal; the miller can grind no meal if the farmer brings him no grain; the farmer can bring no grain if his field yields no crop; the field can yield no crop if the forces of Nature fail to work together to produce it; the forces of Nature could not conspire together were it not for the all-wise and beneficent Power who incites and guides them to their predetermined ends.'[1]

Games

So far from attempting to supersede the mother in the education of the young, Froebel published his 'Mutter- und Kose-Lieder' in order to make her work more intelligent and effective. Still, he maintained that, however intelligent and effective it might be, there was need for the Kindergarten. In the home a child does not mix with his equals. His parents stand on a higher plane, and, if he has brothers and sisters, they are either older or younger. At school he meets many children of his own age; his intercourse with them develops the social feelings, compels him to practise self-restraint, and teaches him respect for the rights of others. The Kindergarten being a complement of the home, the action song which the child practises with his mother has its complement in the musical game which he plays with his fellows. Froebel invented several, and since his day the ingenuity of teachers has added largely to the number.

Conclusion

In this (as in every other department) continued progress is possible. What we need is, not to copy the details, but to apply the principles of the method. 'The letter killeth, but the spirit giveth life.' With the right spirit an infant school may be a veritable children's garden, though Froebel might fail to recognise any appliance or device employed in it; without the right spirit the Kindergarten may be a prison, the gifts unwelcome, the occupations unprofitable, and the games irksome.

[1] Blow, *Mottoes and Commentaries of Froebel's Mother-Play*, p. 126.

It must be admitted that the conditions are more favourable in the Kindergarten than in the infant school. The Kindergartner has only to think of exercising the activity of her little pupils; the infants' teacher has to think also of imparting to hers a knowledge of Reading, Writing, and Arithmetic; and she is tempted to regard the gifts and games and songs as only pleasant interludes in the serious business of their young lives. She should, however, resist the temptation, and, instead of raising impassable barriers between 'Kindergarten' and 'lessons,' should strive to make the one help the other,—the lessons giving directness to the methods of the Kindergarten, and the methods of the Kindergarten giving interest to the lessons. Thus, lessons in counting, in addition, and in subtraction, may be combined with the first, the third, the fourth, the fifth, and the sixth gifts; lessons in form and colour may be combined with the seventh gift; the alphabet may be taught by means of the eighth and ninth, and writing by means of the tenth.

Froebel's spirit should permeate infant schools

It is often assumed that Froebel's methods, though perhaps very useful with infants, are too puerile for others. The assumption is only partly true. To employ the methods without change might be foolish, but to employ other methods embodying the same principles would be eminently wise. Children who reckon themselves too old to handle cubes and balls and cylinders may yet be young enough to benefit by concrete teaching and by object lessons; if they are too old to handle the later gifts, they are young enough for the manual training to which these form an admirable preparation; if they are too old for action songs they are young enough for lively music; and if they are too old for the games of the schoolroom they are certainly not too old for the organised games of the playground. The

Transition from the Kindergarten

now sometimes is, if these facts were borne in mind; if the teachers of the lower department were to think more of what their top class is just going to do, and the teachers of the higher department were to think more of what their last class has just been doing.

HERBARTIANISM

THE most important element in the history of educational theory and practice during the last quarter of the nineteenth century is the influence exerted by two German thinkers, Froebel and Herbart. Johann Friedrich Herbart was born at Oldenburg on May 4, 1776, and died at Göttingen on August 14, 1841. Though his father sent him to Jena to study jurisprudence, he was irresistibly drawn towards philosophy, especially in its relation to education, and the blessedness of the man who has found his work came to him early. He was only twenty one when he accepted a post as private tutor. He held this for about two years, and the rest of his days were devoted to University teaching. He passed through none of the varied and trying experiences of Froebel; the vicissitudes of his life were hardly more exciting than the migrations of the Vicar of Wakefield from the blue bed to the brown. The pupil of Fichte and the successor of Kant, his views of philosophy generally may be surmised; it was in the domain of psychology that he showed original thought and enunciated original opinions. In a book which concerns itself with psychology only so far as to recommend methods consistent with its admitted laws, there is no need to state the opinions of Herbart or to discuss their soundness; and in describing the pedagogical applications of these opinions there is no need to distinguish between what we owe to Herbart himself and what we owe to his two most eminent disciples,

Herbart

Ziller and Rein. Of these applications the most important and fruitful are the recognition of the value of apperception, the concentration of studies, and the 'formal steps.'

Apperception

The term 'apperception' is used with different connotation by different writers. One Herbartian defines it as 'that psychical activity by which individual perceptions, ideas, or idea-complexes are brought into relation with our previous intellectual and emotional life, assimilated with it, and thus raised to greater clearness, activity, and significance.'[1] Another Herbartian defines it as 'that interaction of two analogous presentations or groups of presentations whereby one is more or less reformed by the other, and ultimately fused with it.'[2] The reader who does not feel called upon to remember (or to understand) these 'prave 'ords' may think of apperception merely as the assimilation or association of ideas. 'Every impression that comes in from without, be it a sentence which we hear, an object of vision, or an effluvium which assails our nose, no sooner enters our consciousness than it is drafted off in some determinate direction or other, making connection with the other materials already there. . . . The particular connections it strikes into are determined by our past experiences and the associations of the present sort of impression with them. If, for instance, you hear me call out "A, B, C," it is ten to one that you will react on the impression by inwardly or outwardly articulating "D, E, F." The impression arouses old associates; they go out to meet it; it is received by them, recognised by the mind as "the beginning of the alphabet."'[3]

A child seeing a tiger for the first time called it 'pussy,' the new perception associating itself with the idea of 'cat' more easily than with any other idea already in his mind. Much of

[1] Lange: *Apperception*, tr. De Garmo, p. 41.

[2] Felkin: *Introduction to Herbart's Science and Practice of Education*, p. 36.

[3] James: *Talks to Teachers*, p. 157.

what we think we perceive we only apperceive.[1] Our senses convey to the mind the impression of a part; that, joining itself to the related impressions already lodged there, leads us to infer the whole. I see Herbart; I infer *Herbart.*

The merit of Herbart consists not so much in the discovery of the theory of apperception, as in his practical application of it to pedagogical purposes. One of the duties of a teacher is to introduce new ideas into the mind, which he cannot do satisfactorily without knowing what ideas are already in it, waiting to welcome them and combine with them. A necessary preliminary of all instruction, therefore, is to ascertain what the children know of the subject, and of kindred subjects. Half the blundering answers given at examinations are due not to the stupidity of the pupils, but to the teachers' forgetfulness of this fact. For instance, it never occurred to the teacher who defined 'whimsical' as 'odd,' that the word 'odd' in that sense might itself be unfamiliar. Hence he was surprised when a boy, asked to make a sentence containing the word 'whimsical,' said: 'There are two kinds of numbers, even and whimsical.' A similar failure on the teachers' part led children to write:—

Application of apperception

The Nile . . . was discovered by Livingstone and rises in Mungo *Park.*

The thirty-nine *articles* now in common use in the Church of England were in her [Elizabeth's] reign first brought into England.

---

[1] When I was crossing the Atlantic I saw one evening on the horizon a steamer, but I could say nothing about it except that it was a steamer standing black against a black sky. A sailor, however, exclaimed, 'That is one of the Standard Oil Company's ships.' I asked him how he could tell, and he said by the position of her funnel, which was well astern. He explained that the Company brings oil to this country in bulk, and that to make room for the tanks the engines are set as far back as possible. Our sensations were the same, but his mind was better stored than mine, so that where I only perceived a steamer he apperceived a steamer belonging to the Standard Oil Company, crossing for a fresh cargo.—SALMON: *Some*

The [South] Sea *Bubble* is spoken of in history as being similar to a waterspout.

A jot is half a *tittle*; a tittle is what they give distinguished men, like Mr. Tennyson.

Veni, vidi, vici . . . the *conic* letter that Cæsar wrote to his friend after the Battle of Zela.

The *executive* is the man who was appointed to the duty of hanging a person or otherwise executing him.

Manhood *suffrage* is the state of suffering to which all mankind are born.

A *protective* duty is the duty of a man to protect another person from receiving harm of any kind.

William Pitt began life by playing a *cornet* in the Blues.

'*Chaff* that the wind scattereth' means teasing people.

The heart is a *comical*-shaped bag.

The constitution of the United States is that part at the end of the book which nobody reads.'[1]

Correlation of studies

Many teachers keep every subject of instruction as carefully isolated from all other subjects as a housekeeper keeps salt apart from drinking water. Some zealous followers of Herbart have gone to the opposite extreme and broken down all barriers. Interest plays a large part in his scheme of psychology, and they think that they are securing a concentration of interest when they make the teaching of every subject revolve round some common point. Thus, a section of them made 'Robinson Crusoe'[2] the centre of a whole year's work. It was the basis not only of lessons in Reading, Spelling, Writing, Grammar, and Composition, but of all the other lessons. There would be lessons on a ship because he sailed in one, on the Atlantic Ocean because he crossed it, on an island because it was his home, on goats and birds because he tamed them, and on clothes because he made his own. Even the questions in

[1] This may have been due to guessing rather than to a deficiency in the 'apperceptive mass' as the Herbartians call it.

[2] *Robinson Crusoe* was chosen in accordance with a theory of 'Historical Culture Epochs' which it would be irrelevant to explain here.

Arithmetic all started from him. Children calculated how many days, months, hours, and minutes passed between the wreck and the rescue; the value of each article thrown up by the sea; the dimensions of his hut and his canoe, &c. &c. This practice is open to several objections :—

Objections

1. The value of 'Robinson Crusoe' as a literary study and as a story is obscured. Children lose sight of the narrative when they have to look at every topic remotely suggested by it.

2. There are some topics which it cannot suggest,—History, for instance.

3. Lessons in Geography, Arithmetic, &c., must be ineffective when their order and purpose are determined not by the nature of the subject, but by the accidental references to it in a novel.

4. After a while concentration of interest must militate against concentration of attention. Children who had heard of nothing but 'Robinson Crusoe,' morning and afternoon, for three months, would be sick of the very name, and would wish that he who bore it had been killed by the Moors at the beginning of his adventures.[1]

[1] How far the Robinson Crusoe theory still holds the field I cannot say, but I found it applied religiously in one school. In other schools I found a saner concentration of interest. The various subjects of study were not separated by water-tight compartments; each was brought as far as possible into relation with all the rest. The flour, the suet, the currants, and the plums were not presented separately, but mixed into a wholesome and appetising pudding. In one school, for instance, the subject was Scotland. The children were not kept during one lesson to the Geography and during another to the History, but both were taken together. The reading was a Waverley novel, the writing a biography of a famous Scot, the drawing a picture of Holyrood, and the modelling a contour of the country.

In the primary schools the most common centre of interest was nature study. The children were led to observe trees, plants, flowers, animals, and birds, the weather and the ever-changing aspects of earth and sky; they were made to read and write and talk about, to draw and model what they had seen. In one school the first grade drew a circle for each

But the fact that indiscreet Herbartians ride a theory to death is no reason why more humane persons should not ride it at all. A moderate concentration of studies is very helpful, giving unity of interest and economising effort. Spelling can be best taught in connection with Reading, for the words to be learnt are seen in their natural surroundings; History cannot be intelligently taught except in connection with Geography, and Political Geography cannot be intelligently taught except in connection with History. The matter of a lesson can be reproduced as a composition exercise, and sentences taken from it can be used to illustrate grammatical rules.

A sane correlation

In the Kindergarten a fairly complete concentration is possible. Thus with home life as the salient idea, with birds and colour as special ideas, we may have families and birds as subjects for the 'Morning Talks,' 'Robin Redbreast's Visit' as the story, 'Thumbs and Fingers'[1] and 'This is the Mother so good and true' as songs, and 'The Pigeons' as a game. The balls of the first gift may be used in connection with a lesson on the colours of birds, the cubes of the third for building a pigeon house &c.[2]

Herbartians attach great importance to what they call the 'Five Formal Steps,' the successive stages in every lesson given in what they consider the only right way. These are:[3]—

The Five Formal Steps

1. Preparation.

the basis of the number work.—SALMON: *Some Impressions of American Education*, p. 24.

[1] In the *Mutter- und Kose-Lieder* the accompanying picture represents four children in bed and one in a cradle, and the song embodies the family idea.

[2] Adapted from *Practical Suggestions for Kindergartners*, by Jeannette R. Gregory. Several other illustrations will be found in Miss Dodd's *Introduction to Herbartian Principles of Teaching*.

[3] This description is Rein's. Herbart himself and Ziller described them by another set of terms, and Dörpfeld by still another.

2. Presentation.
3. Association.
4. Generalisation.
5. Application.

Everyone will agree that a teacher should in every lesson have a clear and definite aim; the Herbartians hold that he should also let the pupils know what the aim is—that they will not follow his guidance with energy unless they know whither he is leading them.

After the statement of aim comes the first Formal Step—Preparation. Apperception being a vital doctrine, it is absolutely essential that the teacher, before introducing new ideas, should find out whether the ideas with which they are to be associated exist; and if they do not exist, they must be imparted as a preliminary.

1. Preparation

The second step is the Presentation of the new material to be taught. This must be cut up into small sections, each perfectly clear and distinct, and each taking its due place in a logical sequence. When attention has been concentrated on all the separate parts in order, reflection must combine them into a whole.

2. Presentation

The third step is Association. The facts just presented must be compared with similar, and contrasted with dissimilar, facts, till the children are ready to take the fourth step, the Generalisation.

3. Association

4. Generalisation

The fifth step, Application, is intended to aid the children in making the new material a part of their working knowledge. It may consist of oral questions, of a written examination, or of exercises.

5. Application

The Herbartians do not claim to have discovered or invented the Five Formal Steps. 'It is nothing really new, but

on empiricism alone it is the result not of psychologic knowledge, but of tact gained by experience, which can produce no convincing proof of its necessity. Through this Herbart-Ziller system of instruction that indefinite feeling is developed into a clear, definite, and educational idea. Each single step in the psycho-synthetic building up of the system of education is given in detail and firmly based on psychologic laws.'[1]

The 'Steps' not new

Vixere fortes ante Agamemnona : there were great teachers before Herbart, and a teacher is not necessarily a Herbartian because he begins a lesson by finding out what the children know, presents his facts clearly and logically, proceeds from the concrete to the abstract, from the particular to the general, leads up by comparison and contrast to inductions, and employs exercises to test and confirm his teaching. The method of the Five Formal Steps is undoubtedly based on sound scientific principles, but it no more follows that every teacher should adopt it than that every sick man should take the same medicine. Saul's arms were better fighting implements than David's sling, but they did not fit David, and a teacher should use Herbart's method only if he can make it fit him. If he is to succeed he must employ Herbart's principles ; whether he employs them in Herbart's way is a matter of individual taste and idiosyncrasy. No method is good that is the teacher's master instead of being his servant.

[1] Rein : *Pedagogischer Studien* (quoted by Felkin : ***Introduction***, p. 118).

QUESTIONS SELECTED FROM EXAMINATION PAPERS SET BY THE ENGLISH EDUCATION DEPARTMENT

ORDER, ATTENTION, DISCIPLINE

1. Why should young teachers be restricted from the use of corporal punishment, (*a*) for the sake of their scholars? (*b*) for their own sake?

2. Point out some of the ways in which school discipline may be useful in producing habits of ready obedience, and name some characteristic features of good discipline.

3. Show that rewards may be usefully employed in stimulating children to work. Name some rewards that may be connected with the daily work of the school.

4. Show that clear distinction may be drawn between truthfulness and 'telling tales.' How can older boys be employed in assisting to maintain the discipline of a school?

5. Show that inattention in a class may proceed from the faults of a teacher, or from causes other than faults in the children themselves.

6. Show that harshness and untruthfulness in a teacher influence the character and behaviour of children out of school.

7. Show that copying, especially in Arithmetic, may be the result of bad teaching or of bad discipline. What precautions would you take to prevent the growth of such a habit?

8. Is it a sufficient definition of good discipline to say that 'it is the power exercised by the teacher over the children'? Give some distinguishing marks of good discipline.

9. Show that what is called stupidity in children may arise from faults on the part of the teacher. Name some of the faults.

10. What is truthfulness? Name some ways in which a child may be untruthful in act without saying a word.

11. If you found the class you were teaching getting listless and sleepy, what causes would you suppose to be at work and what would be your remedies?

12. What are the best expedients you know for correcting refractory or irregular children, (*a*) in an infant school; (*b*) in a school for elder children?

13. By what special means would you try to promote truthfulness and punctuality among your scholars? State the motives which you would lay before your scholars as incentives to the constant observance of truth and punctuality.

14. Give your opinion as to the value of rewards and punishments; and state the principle on which you think they ought to be administered.

15. Mention any difficulties you may have met with in the effort to control the children you had to teach, and state how those difficulties were overcome.

16. Illustrate from your practical experience, in a day school or elsewhere, the vital importance of securing good order in a school.

17. How were you accustomed to deal with dull, lazy, or obstinate children, and what special means did you adopt for securing attention?

18. What methods have been adopted within your knowledge for correcting these faults in children: inattention, untruthfulness, laziness, impertinence, sullenness, and with what effect?

19. How far is it in the power of a teacher, by other means than school lessons, to improve the habits, manners, and character of the children of a school? Mention any ways you know by which a teacher may exert useful influence in these respects.

20. What is meant by good discipline? What are the means and ways of improving discipline?

21. What are the best expedients you know for quickening and securing the attention of a languid or disorderly class?

22. In some countries the teachers are absolutely forbidden to make use of corporal punishment in any form. Say by what other means it is possible to maintain discipline under such conditions.

23. What is a criticism lesson? Under the head of 'discipline,' what points would you attend to in such a lesson?

24. In what ways may success in class teaching be promoted by studying the characters of children?

25. What are the causes of and remedies for restlessness in a class of children?

26. How should restlessness in children be turned to good account?

27. Name some special difficulties which teachers have to encounter under the heads of disposition, will, and habits, and show how these may be most successfully overcome.

28. How should hasty temper and unpunctuality or laziness and sulkiness be punished, and why?

29. What is meant by good discipline? If you were appointed to a disorderly school, how would you set about restoring and reorganising it?

30. What part of the moral character of a child is specially within the range of a teacher's influence? Mention any means other than direct lessons by which you hope to aid in the formation of right principles and habits among your scholars.

31. In the 'Revised Instructions' it is stated that 'the teaching and discipline' of an excellent school are 'such as to exert a right influence on the manners, the conduct, and the character of the children.' By what sort of school lessons, and by what means other than school lessons do you think it practicable for a teacher to attain this kind of excellence?

32. Character has been described as 'a completely fashioned will.' What does this mean? Say by what sort of discipline and exercise the will may be trained in a school.

33. Does character produce actions, or do actions produce character? Discuss the question, and show how your answer to it would affect your conduct of a school.

34. How does the obedience yielded by a child in school differ from the obedience of an adult to the obligations imposed by a 'sense of duty,' and how can the one be developed into the other?

35. What should be the relation of home to school in respect of (*a*) discipline, and (*b*) lessons?

36. Show how the formation of a habit of truthfulness may be materially assisted by a teacher in the conduct of a class.

37. Why should teachers consider the regular and punctual attendance of their scholars as an essential part of their business?

38. What means would you adopt for procuring punctual attendance at school? What are the most important reasons for considering it worth much trouble?

39. Say in what way is it possible for a teacher to exercise a useful influence over the conduct of children out of school.

40. Give a sketch of a moral lesson for infants founded upon an illustrative anecdote, or of a lesson for older children on industry or temperance.

41. What is to be understood by habit, and what laws of mental science control the formation of habits? Say what it is in the power of school discipline to do in the encouragement of right habits.

42. What is meant by habit? By what means is habit formed and strengthened? Are there any youthful habits, either of thought or of action, which lie especially within the control of the school teacher?

43. Make a short sketch of a lesson for a senior class on the moral uses of games, or for a junior class on truthfulness.

44. Compare the good and evil effects of competition for prizes or scholarships with regard to its effects upon health, temper, and the true ends of education.

45. Mention appropriate prizes and honorary rewards for (*a*) infants, or (*b*) older scholars.

46. In what various ways may children be rewarded for good conduct and proficiency in their studies? Say what kinds of reward appear to you to be most legitimate, and what kinds are open to objection?

47. What are the objections to corporal punishment? By what means can you diminish the necessity for using it; and what other forms of correcting children's faults appear to you to be more legitimate?

48. Discuss the question whether any, and if so what, interval of time should be allowed to elapse between the commission of some serious offence in school and its punishment.

49. A nurse seeing a child run from her side towards the kerbstone declined to stop it, preferring that it should fall, so that it might 'gain experience.' Within what limits is such a form of discipline justifiable?

50. A little girl was running down a steep hill to whom a lady, walking with her mother, called 'Take care, my dear.' The mother answered 'Let her alone. She must learn wisdom by experience.' Discuss how far the mother was right or wrong.

51. What sort of punishments are the most salutary and effective in a school? How far is corporal punishment at all necessary? How should it be carried out?

52. Give a definition of punishment. What are the chief ends of punishment? What are the evils of punishment from an educator's point of view? Give some plain limits to the use of punishment.

53. What is meant by a punishment appropriate to the offence? What is the gain of making punishment thus appropriate?

54. What is the difference between voluntary and involuntary attention? Give some examples of both, and of the conditions under which the power of fixing and concentrating the attention of scholars may best be strengthened.

55. What is meant by attention? How can it be cultivated in children?

56. Analyse the faculty of attention, and show to what extent it is or is not dependent on the will. Specify the sort of lessons or other expedients by which the habit of fixed attention can best be formed and strengthened.

57. It is more difficult to secure good *tone* in a day school than in a boarding school. Why? In what way, whether by precept or example, may a right tone be best maintained in an elementary school?

58. Explain the importance and practical bearing of the following remark: 'I will respect human liberty in the smallest child.'

59. J. A. Richter says: 'Let us respect the happiness of children.' Say in what way it is possible for a teacher, either of infants or of older children, to give effect to this counsel without diminishing the efficiency of the school as a place for serious work.

60. How may children be best taught to avoid cruelty to animals and common mischievous habits, such as stone-throwing, playing with fire, &c.?

61. Her Majesty's Inspectors are instructed to consider the degree of interest the children show in their work when they have to judge the discipline of a school. Show why this is properly to be considered as an essential feature in the discipline of a school.

ORAL QUESTIONING

1. Explain the difference in the nature and purpose of questions employed at the beginning, during the course, and at the close of an oral lesson. For what purpose is the elliptic method of questioning valuable?

2. Say what is meant by a good style of questioning, and what are the tests by which you would distinguish a good from a bad question. Discuss the value of catechisms.

3. What are the advantages and disadvantages of setting scholars in a class to question one another at the end of a lesson?

4. Criticise the following questions as introductory to collective lessons. Say whether you consider them skilful or unskilful, and why.

(1) Why is coal growing scarcer?

(2) What animal is most like a dog?

(3) Is the tail of the bird in this picture long or short?

(4) You are fond of flowers, are you not?

(5) What monarch reigned before Queen Elizabeth?

5. Give some reasons why children should be trained to answer in complete sentences.

OBJECT LESSONS

1. Make a list of twenty lessons on familiar animals, and explain the order in which you have arranged them.

2. Name the qualities you would select in giving an object lesson to infants on 'steel,' and state the experiments or illustrations by which you would elicit the ideas, before giving the names of the qualities.

3. Detail the apparatus required for lessons on a coal mine and on the seasons, and draw the diagrams required for the latter.

4. Point out some of the uses of object lessons in infant schools, and

illustrate your answers by short notes of a lesson on the 'whale' or on 'iron.'

5. Write out brief notes of a lesson on 'glass,' and explain your purpose in teaching the names of its qualities.

6. Make out a list of lessons on 'common things,' illustrative of the pressure of the atmosphere, and give brief heads of one of such lessons.

7. What is the advantage to young children of having lessons on such subjects as a spider, wool, sugar? Enumerate the qualities or peculiarities in each case to which you would specially direct their attention.

8. In giving an object lesson, what is the aim of the teacher in using terms denoting the qualities of the object? What is meant by vulgar and pedantic language?

9. What sort of lessons do you understand to be intended by 'phenomena of nature and of common life'? Make a list of twelve such lessons adapted for children of seven.

10. What sort of a sketch should appear on the blackboard at the end of a collective lesson on *one* of these subjects: (*a*) iron; (*b*) corn; (*c*) the ocean; and what is the best use to make of such a sketch when it is written?

11. Show what is the proper use of the blackboard as an aid to recapitulation. Give a specimen of the sketch which should appear on the board at the end of an object lesson.

12. What is an object lesson? Show that mere sight is not necessarily knowledge.

13. Faulty lessons partake too much of the nature of a lecture, an examination, or of a chance conversation. Develop this statement.

14. What should be the aims of object teaching? How would you attempt to get the greatest benefit from a course of object lessons? Make out a list of twenty object lessons for (*a*) a country school, or (*b*) a town school.

15. Explain the value and use of object lessons. Say what educational purpose they may serve, and how a course of them should be arranged. Give a graduated list of twenty subjects which would be appropriate for a class of scholars of six or ten years old.

16. Write out short directions to be observed by a pupil teacher in drawing up notes of lessons: (*a*) as to the use of a text-book; (*b*) the amount of matter; (*c*) the aids to memory; (*d*) the appeal to the reasoning powers.

17. In criticising a lesson given by a teacher what are the special points to which attention should be directed? Give some rules as to pupil teachers to help them in judging of merits and defects, and in forming a just estimate of the success of a lesson.

18. Sketch out a list of suitable subjects for lessons in elementary science in the lower classes of a school in which it is intended to take up either mechanics or animal physiology in the upper classes.

19. What is meant by the faculty of observation? Why should it be exercised, and how may it best be trained and strengthened in young children?

20. What is meant by induction? Sketch out a lesson in which the inductive method is employed, taking one of these subjects: (*a*) passive verbs; (*b*) the properties of water; (*c*) climate.

21. Distinguish between observation and experiment, and show how we may learn by experiment what we could not learn merely from observation.

22. What do you understand by the term, Notes of a Lesson? State clearly the principles on which they should be drawn up.

23. Give briefly in each case some one natural law which would require illustration by experiment in lessons on the microscope, the thermometer, the steelyard, balloons, ships; and state the experiment you would employ for illustration.

24. To what practical purpose should you put a school museum, and what class of specimens should you include in it?

READING

1. What is meant by *simultaneous* reading? How should it be conducted, and what is the use of it?

2. What is meant by *tone*, *accent*, *emphasis*, and *expression* in reading? Say why they need special attention, and how you can best deal with them.

3. Say what sort of reading lessons you have found most interesting to young children, and describe the way in which you would try to secure *distinct articulation*.

4. Name a few words which are specially difficult for young children to read owing to the presence of *silent* letters.

5. What is meant by *distinct articulation* in reading? Name any words which present special difficulty to learners, and mention any form of exercise that is most useful in correcting faulty articulation.

6. Explain the use which a teacher should make of simultaneous and of pattern reading, and say what objection (if any) there is to an excessive use of either method.

letters, or to begin with the alphabet and afterwards make up simple words. Give your reasons.

8. What are the chief difficulties to be encountered in teaching infants to read? Detail the apparatus required for children below seven years of age.

9. Detail some of the advantages and disadvantages of teaching reading by the alphabetic method.

10. Write out some sentences containing five or six words which would present difficulties to each of the three lowest classes, and explain the progressive character of your method.

11. Describe the various methods commonly employed for teaching young children the first steps of reading. State which you prefer, and give your reasons.

12. What preparation should be made by a young pupil teacher before giving a reading lesson to a lower class, both as regards the language and the matter of the lesson?

13. In the following sentence explain the peculiar difficulties presented by the words in italics in the early stages of reading :—

'He *would* take no *pains* to *teach any* boy *who* could not at least *write what* boys of *eight* years old can write.'

14. What especial care would you bestow upon the less advanced readers in your class before, during, or after a reading lesson? How can home lessons be utilised for teaching reading?

15. What should be the next steps in reading after a child has mastered the forms of the letters and powers of the vowels? Give examples of a few such lessons.

16. Explain how the reading of dialogue and recitation may be employed to remedy want of intelligence in reading. For what reasons should more than one set of reading books be employed in each class?

17. Which subjects of instruction can be best taught by reading books, and which by oral lessons? Give reasons in each case for your classification.

18. Name some of the qualities of good reading.

19. What special help should be given to an older child backward in reading, to obviate his being placed in a class of younger children? What harm would it do a child to be so placed?

20. Give some rules which you intend to follow for securing (1) distinct articulation; (2) intelligent expression in reading.

21. What are the commonest faults which you have found in the reading of children? How would you correct these faults?

22. It is sometimes complained that children do not read well because

more difficult words. Do you consider such interruption necessary, and, if not, how may good spelling be attained without it?

23. Explain what may be done by the help of reading books to impart geographical and historical information in schools in which Geography and History are not specifically taught.

24. What is meant by style and expression in reading, and how can they best be taught?

25. What is the best way of arranging a class for a reading lesson so as to secure (*a*) distinctness of utterance, and (*b*) readiness on the part of the scholars to observe and correct mistakes?

26. Discuss the advantages and disadvantages of teaching the earlier stages of reading by the phonic process.

27. It is said that some children know their reading books almost by heart, and that when examined they are only reciting, not reading. How could you detect this fault, and by what means could you guard against it?

28. What is the use of pattern reading in teaching a class to read? Mention any common faults which a good teacher should avoid in giving such lessons.

29. Explain what is the best use to make of a box of movable letters in an infant class.

30. Describe a plan followed in your school in beginning to teach the youngest children to read.

31. What are the chief points to be kept in view in teaching the art of reading? Name the advantages, if any, of exercises in silent reading in school.

32. Explain the use which you think it right to make of simultaneous reading and of pattern reading in teaching young children, and give reasons for the method you mean to adopt.

33. Distinguish between *articulation* and *emphasis* and *pronunciation*. What methods should you adopt with a reading class to ensure that these should be respectively clear, just, and correct?

34. What advantage has a series of short selections over a continuous narrative as reading matter for literary purposes in elementary education?

35. Name the requirements for a good reading book. What are the most common faults in early books for children?

36. What does 'tasteful reading' imply, and how can it best be cultivated in school?

37. What are the tests of good reading? Discuss the importance and usefulness (*a*) of pattern reading, (*b*) of silent reading, (*c*) of simultaneous reading.

39. Sum up the instructions you would give to a pupil teacher respecting the conduct of a reading lesson. Refer especially to the means whereby he may make sure that the matter of the lesson is thoroughly understood.

40. In recent official Instructions examiners are counselled to ask children rather for the meaning of short sentences than for definitions or synonyms of single words. Why is this caution necessary? Give some examples of what is meant, and mention some exceptional cases (if any) in which it is useful and right to require formal definitions of separate words.

41. Why is a school library an important supplement to the ordinary reading books? Give hints for selecting, arranging, and using a school library.

42. What are the conditions which should be kept in view in forming a good school library? Mention the titles of twenty books which you would choose for such a library, and state what rules you would lay down for its management.

43. If your advice were asked respecting the formation of a lending library in your school what classes of books would you suggest? Name in each case two or three examples of books well suited for the purpose. By what other means is it in the power of a teacher to encourage in the scholars a love of reading?

44. Say in what way it is possible for a teacher to exercise a useful influence over the reading of children out of school.

SPELLING

1. Name eight words in the spelling of which young children often make mistakes, and explain by what sort of exercises such mistakes may be corrected or avoided.

2. Take the following words, and give a list of others which might be grouped with them for a spelling lesson: *rough*, *should*, *which*, *many*, *taught*.

3. What preparatory observations as to difficulties of spelling should be made before proceeding to write from dictation the following passage?—

> 'The watery dykes display luxuriant verdure; bulrushes and water-flags have attained their freshness; willows are rich with foliage in sylvan nooks; agreeably hidden in a leafy arbour you may catch glimpses of the retiring denizens of the more secluded labyrinths of the forests.'

4. Distinguish the uses of dictation and transcription lessons for children lately transferred from an infant school.

6. Describe the various methods used to teach spelling in your school. Did you rely chiefly on the eye or on the ear in teaching spelling?

7. Give some (not more than six) of the commonest misspellings of children of seven, and account for each natural confusion in spelling. How did you correct written exercises in spelling.

8. How have you been accustomed to give a dictation lesson? How was the exercise corrected? What expedients were adopted to prevent copying?

9. Mention any twelve words, the spelling of which presents special difficulty to young learners; and say by what sort of exercises you can best help such learners to spell them correctly.

10. Name some of the commonest faults of young assistants in teaching spelling. How much of a spelling exercise should be oral, and how much should be written?

11. Of the three methods—transcription, dictation, and oral spelling—say which you think most effective for teaching children to spell correctly, and why you prefer it.

12. Much time is often spent by class-teachers in causing words to be spelt aloud, and in repeating as an oral exercise the spelling of the same words. Do you think such an exercise either useful or necessary? If not, how can good spelling be taught without it?

WRITING

1. Arrange the letters of the alphabet in the order of their difficulty for the teaching of writing; and show how you would group together the easiest of them, for lessons to young beginners.

2. Show how you would group the capital letters in the English alphabet for teaching.

3. Show what kind of ruling on the slates and copy-books of the younger children is best suited to teach the proper forms and proportions of letters. Give illustrations.

4. Write six capital letters in such a way as to show the proper forms and proportions of their parts, and say how you would give a lesson on them.

5. Describe the proper position of the body for writing, the right way of holding the pen, and the best way of setting copies for advanced classes.

6. What elements are common to the written letters *p*, *q*, *h*, *g*, *d*, *y*? In what order, and in what combinations, would you teach these elements to infants?

7. What are the chief difficulties to be encountered by a child beginning

8. Arrange the following words in order according to the difficulty of writing they present to beginners, and give your reasons: *man, mat, mamma, mask, mast, men, meat, mend, mane, most, mind.*

9. Show clearly the elementary component parts of the written letters *a, h, g, m, d.*

10. How would you teach children to write (*a*) on slates, or (*b*) on paper? What are the important points to be attended to in teaching children to write?

11. Show how you would group or classify the letters of the alphabet for teaching the elements of writing to very young children. Explain by an illustration what use can be made of the system of threefold ruling on slate or copy-book.

12. Say what use you think it right to make of 'tracing' in teaching writing. Write in large hand the five capital letters *B, K, Q, M, W,* and point out the commoner faults made by learners in forming them.

13. Draw up a course to be followed in the teaching of handwriting to each of the classes of an infant school, giving examples of the size and style of the letters you would adopt.

14. Which do you prefer in teaching writing—engraved copies, or copies set by the teacher on the blackboard? Give reasons for your preference, and write, as illustrations of the true forms and proportions of letters, four capital letters and four small letters such as should be grouped together for the purpose of teaching.

15. Classify the capital letters according to the similarity of their forms, and the order in which you would teach them. Give specimens of any six capital letters, carefully written, so as to illustrate their proportions and the rules for their formation.

16. What are the advantages of teaching large hand before small or running hand, and how far is it desirable to continue large-hand practice in the upper classes? Give a model copy in each hand.

17. Give some simple rules showing the best way of conducting a class lesson in writing.

18. Describe the way of teaching the children to hold their pencils properly. What are the common mistakes to be guarded against?

19. In writing in copy-books there is a great tendency to repeat the same mistake down a whole page. What is the best method of correcting this?

20. What is the use of tracing in the earlier copy-book exercises, and what are the objections, if any, to the practice?

21. Which of the manual employments of an infant school is most useful as a help in the teaching of writing? Explain and illustrate your answer.

22. Describe the proper position of a child whilst writing, and show the ill effects of a bad position.

23. What is the proper position of a child when writing? What ordinary school habits and tendencies must be changed in order to secure this position?

24. What errors are common amongst children in writing the letters *a*, *f*, *h*, *j*, *s*, *t*, *w*, and *y*? How should they be corrected?

25. Group the capital letters according to the character of the lines which compose them, and to the order in which they should be taught. Say what plan of ruling slates appears to you to be the best for beginners and why.

26. Discuss the relative advantages of copies on the blackboard, printed copy-slips, and copy-books with engraved headlines in teaching writing.

27. Explain simply and clearly as you would to a pupil teacher the system of teaching writing which you prefer.

28. Explain Mulhäuser's system of teaching Writing. Compare the advantages of beginning the teaching of Writing with large hand or text hand.

29. Discuss some of the best mechanical aids and illustrations you have seen for teaching young children the forms and proportions of letters.

30. Enumerate all the mechanical contrivances with which you are acquainted for teaching children to write, and state the value of each and its special object.

31. What instructions would you give to a pupil teacher with regard to simultaneous teaching in writing lessons?

ARITHMETIC

1. What purpose or purposes has a teacher in view in teaching Arithmetic? Show what special mental faculties are called into exercise in the study and practice of Arithmetic, and give examples.

2. What do you understand by the assertion that Arithmetic is a science as well as an art? Illustrate your answer by showing how you would teach Proportion (*a*) in a scientific, and (*b*) in a practical way.

3. In the study of Arithmetic what kind of mental power is specially called into exercise? Give an example of the mode in which you would teach some arithmetical rule with a view rather to the intellectual training of the learner than to the attainment of a correct answer to a sum.

4. Which of the manual employments devised by Froebel is most helpful in teaching children the elements of Arithmetic? Give examples of a

5. To what extent are number-pictures, cubes, or other visible illustrations useful in teaching arithmetical truths to children ; and when, if ever, do they become necessary?

6. How do simple lessons in measuring, and easy occupations which involve measuring, help to make a child's ideas of number and magnitude clearer?

7. What other visible and tangible means besides the ball-frame are useful in teaching young children to count?

8. How far do you consider the common school abacus or ball-frame deficient as an instrument for teaching Arithmetic? By what other mechanical aids may Addition and Subtraction be more readily taught to young children?

9. To what extent would you use abstract numbers in teaching Arithmetic to young children?

10. Give some concrete illustration of the process of dividing 30 into three parts in the ratio of 2, 3, and 5.

11. Show in the form of notes of a lesson how you would teach Numeration and Notation. Give examples of questions in Arithmetic best adapted for children of 6, 8, and 10 years of age, who have been carefully instructed up to those ages.

12. What plan would you pursue to secure accuracy in Numeration and Notation, while at the same time your pupils are working the more advanced rules in Arithmetic.

13. By what means would you teach Simple Subtraction to a class of young children? Illustrate by the following example: 505 – 66. Write out full notes of the lesson.

14. A class is beginning Simple Multiplication; explain clearly each step in the process, and show how Multiplication is only a short method of working Addition.

15. What is the object of Practice? What knowledge of Arithmetic should a class have before commencing this rule? Show in the form of an introductory lesson the various steps by which you would explain this arithmetical process to children.

16. By what exercises may rapidity of computation in Arithmetic be most effectually promoted? How may accuracy of work be secured? What are the chief difficulties to be surmounted in giving a first lesson on Decimals?

17. What are the chief uses of Mental Arithmetic? Give a series of progressive examples introductory to a first lesson on Addition of Fractions.

18. Give a specimen (1) of the sort of demonstrative lesson you would give on commencing Reduction of Weights and Measures; and (2) of mental calculations involving them.

19. Frame twelve suitable oral exercises calculated to facilitate the study of Fractions.

20. Show by means of brief notes how you would help a scholar to think out and find a rule or principle for himself for Multiplication of Fractions.

21. How can an appeal to the eye be made in teaching Divisions of Fractions? Why should Fractions be taught before Proportion?

22. In teaching Arithmetic point out the advantage of analysing a sum so as to show the significance and value of each figure. Illustrate your answer by a full analysis of a problem in either Compound Division or Practice.

23. In teaching children to work problems in Arithmetic sketch and illustrate your method of procedure when dealing with a question of a new type.

24. In what way may the Tables of Weights and Measures be most easily taught to children?

25. Explain fully, as to a class of beginners, the method of Long Division, and work out the following question so as to show the meaning and value of each figure in the answer: Divide 23,782*l.* 10*s.* 6*d.* by 17.

26. Describe the best system you know for teaching Numeration and Notation.

27. Make four sums—two in direct and two in inverse Proportion—and show how you would explain to a class the working of one of them.

28. The New Code requires an exercise in rapid addition. Make out a column of figures suited for this exercise, and say how you would best secure quickness and accuracy in performing it.

29. Show by means of illustrations how you would explain to a class of scholars the reason of one of these processes:—

(*a*) Finding the Common Denominator of three or more fractions.

(*b*) Reducing miles to half inches.

30. Give as many forms of mental exercise as you can contrive on the number 24.

31. Explain what is the proper use of a ball frame or counting frame in teaching Arithmetic. Suppose you had no such apparatus, explain how you might teach counting by any of the objects in the school-room.

32. State how you would explain the value of the full remainder obtained in the division of 349 by 42, when the division is performed by the factors 6 and 7 respectively.

33. Distinguish the teaching of the Rule of Three by the method of unity and by proportion, and compare their advantages.

34. Write out a rule for converting a pure Circulating Decimal into a Vulgar Fraction, and work an easy example in such a way as to show the reason of the rule.

35. Write out two or three problems in Mental Arithmetic requiring the application of three at least of the Compound Rules.

36. Make and explain diagrams to illustrate the following:—

$$\tfrac{1}{2}(\tfrac{1}{3}-\tfrac{1}{4})=\tfrac{1}{24}\,;\ (\tfrac{1}{3}-\tfrac{1}{4})\div\tfrac{1}{3}=\tfrac{1}{4}.$$

37. Work at full length an example in Compound Practice which will prove your process in this instance to be shorter than the ordinary method of Compound Multiplication.

38. In teaching Subtraction two methods are commonly employed, viz., of equal additions and of decomposition. State and explain the method which you have been accustomed to employ, and set down a graduated series of sums leading up from the easiest to the most difficult process in Subtraction.

39. What is the meaning of the term 'compound rules'? Why are they so called?

40. To what common uses may the Avoirdupois, Liquid, and Square Measure Tables be applied? Give examples of such mental problems as you would employ in each of these tables.

41. Write down the rules for working mentally the following sums: prices of dozens, of scores, multiplying by 99, and dividing by 60.

42. A class can multiply by numbers up to 9. What intermediate steps of reasoning and practice are needed that they may be able to multiply intelligently by such a number as 67? Give more difficult examples of each step.

43. Name those Tables of Weights and Measures that should be first taught to children. Justify your selection by the uses to which the selected tables are applied.

44. Suggest some different methods for multiplying 3*l.* 11*s.* 9½*d.* by 99. Show which you consider to be the shortest or simplest way. Would you think it advisable to teach young children more than one method? Give your reasons.

45. A class of infants understand the notation of numbers up to (but not including) 10. How would you proceed to teach them the notation of numbers between 10 and 20? Say especially what illustrations you would use.

46. In learning the Multiplication Table, which products do children commonly find most difficulty in committing to memory? Account for some of the most difficult cases.

47. What immediate steps are needed in leading a class which can multiply by 7 to multiplication by 777?

48. How would you commence teaching Arithmetic in an infant school, and how far do you think children under seven may be expected to go in learning Arithmetic?

49. What objects should be kept in view in the teaching of Mental Arithmetic? Say how these objects may be best attained.

50. Show how you would explain to a class of beginners the *reason* of any one of the following processes in Arithmetic: (*a*) Ascending Reduction; (*b*) Subtraction of Fractions; (*c*) Cancelling.

51. Multiply 74086 by 900, and explain, as to a class, the process of working, and the separate value of each line of figures.

52. State and explain, as to a class, the rule for the multiplication of a whole number by a fraction.

53. Explain, as to a class of scholars, the rule for cancelling in either Fractions or Proportion, and give some examples.

54. Name some of the most effective visible and tangible illustrations for use in teaching either (*a*) Notation, or (*b*) Practice.

55. Explain how you would make young children familiar with the right use and value of the figures 1 to 7 as the notation for 17.

56. What are the shortest processes of working mentally the following sums: 57×25; 3 dozen articles at $7\frac{1}{2}d.$ each; 85×99?

57. Describe your method of teaching infants between six and seven years of age to carry in Addition, and say by what sort of visible illustration you could be helped to make the rule intelligible to such a class.

58. Show by what sort of visible objects and illustrations you could make the rule for the Addition of Fractions intelligible to a class of beginners.

59. Give some examples of exercises in Mental Arithmetic suitable for the highest class in a school, and show by what means rapidity and accuracy can be best secured in conducting such exercises.

60. Give some hints for making oral exercises in Arithmetic interesting.

61. Take the number 30 and say how many forms of mental exercise you could devise with that number for a class of children of seven, so as to give them some early acquaintance with concrete and fractional, as well as simple Arithmetic.

ENGLISH

1. What is the value of Grammar as a study? How would you remove this subject from dryness and formalism? What other elementary subject should be improved by knowing it? What is its connection with Logic?

2. Grammar has been sometimes defined as 'the art of speaking and writing the English language with propriety.' How far does this definition appear to you to be true or adequate? By what expedients other than the teaching of technical Grammar is it possible to enrich a scholar's store of words, and to encourage precision in the use of them?

3. What are the chief points to be attended to in correcting the composition of a letter of an older class?

4. Point out some of the common mistakes of children as regards the use of Relative Pronouns, Conjunctions, and Punctuation.

5. What general rules of composition would you give to a class which was required to write out from memory the substance of a short story?

6. The same word may be either a Noun, Verb, or Adjective in different sentences. Show from the following sentences how you would obviate this difficulty for children acquainted with those Parts of Speech only :—

> He cast one *look* behind. She said, '*Look* at me.' How do you *form* your letters? That letter has a curious *form*. He did it without *help*. Do not *help* him. The *cold* is severe in winter. It has been a *cold* season. Do not catch *cold*.

7. Make a table showing all the principal parts of a Simple Sentence, and give a short sketch of your method of teaching the term 'Predicate.'

8. Give briefly, with examples, the rules of Concord of the Verb with its Subject, when they are connected by Disjunctive Conjunctions in the order in which they would naturally arise.

9. Show that Grammar and Composition may be taught simultaneously from the first. Give examples of such Simple Sentences as may be formed by children to illustrate the position of the Verb and Adjective in a simple sentence.

10. In teaching English would you prefer to begin with the Parts of Speech or with complete simple sentences? Give reasons for your choice and show how you would proceed with the method which you prefer.

11. Discuss the influence which the careful preparation of the repetition must have upon the upper classes of a school.

12. Name four or five poems or poetical extracts which you think suitable to be learned by heart by scholars of nine and of twelve respectively, and give your reasons for choosing them.

13. Give some examples of what is called 'word-building' as an exercise in English, and say what is the use of it.

14. After a class has reproduced in writing a short story which you have previously read to them, what is your method of revising the exercises?

15. Describe the best exercises you know in English Composition, and the best way of correcting them.

16. Arrange the Parts of Speech in the order in which you think that they should be taken up in teaching Grammar, and give reasons for your preference in each case.

17. In what order would you teach the Parts of Speech? Give some examples of the exercises by which you would make it clear that the class to which a word belongs depends entirely on the way in which it is used, and that the same word may often be used in several different ways.

18. Should the definition of a grammatical term be taught before or after the use and explanation of examples? Give reasons for your answer, and say how the two methods of procedure are logically distinguishable.

19. What notes would you prepare for the use of junior assistants in giving a lesson on the following question: 'What is meant by *Case* in grammar? Do we find any instances in the English language of inflexion to mark Case?'

20. Show how you would teach the meaning of Subject, Predicate, and Verb to children of eight. Criticise the following definition of a Verb:—'A Verb is a word which tells us what a thing does, or what it suffers, or what state it is in.'

21. '*After* and *but* may be used as Prepositions, Conjunctions, or Adverbs.' Write instructions for a young teacher who has to give a lesson on this statement.

22. In grouping together a large number of words having in them a common element, *e.g.* words ending in *-tion*, what generalisation could be made, and how far could the scholars be helped to make the generalisation for themselves?

23. Take the words *demonstrable* and *demonstrative*, *fortify* and *fortitude*, *residence* and *resident*, *dictator* and *dictation*; and show in each case by reference to their structure how the two words are related and how you would make their exact meanings intelligible to a class without giving formal definitions.

24. It has been officially explained that one chief object of exercises in English should be 'to add to the scholar's store of words.' Say why it is desirable to do this, and by what sort of exercises the object can be most effectually attained.

25. How far can the teaching of English Grammar be made to bear practically upon the oral answering and written exercises of scholars?

26. What is meant by saying that Parsing is essentially a deductive exercise, and that the establishment of the laws of Syntax is inductive? Illustrate your answer by an outline of a lesson in Adjective Sentences [Clauses].

27. It is set forth in the official Instructions to Inspectors tha 'from the first the teaching of English should be supplemented by simple exercises in Composition.' Explain in detail how you would give effect to this injunction with children of eight and nine years old.

28. How may the reproduction of a story as an exercise in Composition be gradually led up to from the earliest stage of school life? Give an account of a lesson on such reproduction.

29. What preparatory work should be given to a senior class before they are allowed to commit a passage of poetry to memory?

30. What do you understand by Literature as a subject of instruction in public elementary schools? What are the chief advantages to be obtained from its study? Illustrate your answer by some short standard piece of poetry.

31. What is the use of paraphrase as an exercise in language? Give as to a pupil teacher some rules which should be observed in attempting to paraphrase a poetical extract, and add a brief example of a good paraphrase of your own of some familiar verse.

GEOGRAPHY

1. What is the meaning of the distinction between Physical, Political, Mathematical, and Industrial Geography? Say which of these should be first taught, and why.

2. Describe fully the relative advantages of questioning children in Geography; (*a*) out of sight of any map; and (*b*) with a map before them on which there are no names of places; and state the best way of combining these two methods of examination.

3. Draw a map of the school premises, and of the roads or streets adjacent, with which you are most familiar; and say what use you would make of such a map in teaching the elements of Geography.

4. Write notes of a lesson for children of ten on your own county.

5. Draw a plan of the school-room, and show how it may be applied in the teaching of scale and proportion in map-drawing.

6. Name in progressive order of teaching the apparatus required for lessons in Geography, and show how you would give a conception of scale and proportion in map-drawing to young children.

7. State the chief points to be noticed in giving a lesson on a river, with the order in which each point should be introduced to the class. Illustrate your answer by some English or Scotch river.

8. Show that a map differs from a picture, and explain how you would supply the deficiencies to a class beginning to learn Geography

9. Point out some of the means by which the attention of a class may

be sustained through an oral lesson of thirty minutes' duration on Geography, so that the dull or backward children may not be allowed to suffer.

10. Name the principal uses of a globe in teaching Geography, and state fully how you would employ it in giving a lesson on day and night.

11. By what illustrations would you give children their first ideas of mountains and rivers; (*a*) from their own experience; and (*b*) on the blackboard?

12. A complaint is frequently made that Geography, as taught in schools, is confined to lists of capes, heights of mountains, &c. How far are such lists useful, and for what purpose? Illustrate from your knowledge of British capes and mountains.

13. How would you begin teaching Geography to a class of young children? Give the substance of a few of your first lessons.

14. Describe the sort of apparatus and visible illustration which is likely to prove most helpful to a teacher in giving the earliest lessons in Geography.

15. After explaining to a class the effect of mountain ranges on climate, show how you might lead the children to seek further proofs for themselves.

16. In giving a lesson on a river, which is the better plan—to speak first of a particular river which the children have seen, or to start with a definition and a general description? Give reasons for your opinion.

17. What help in teaching the elements of Geography to children of seven can be obtained from Kindergarten methods of teaching?

18. What would be your lessons for the first quarter of a school year if you had to teach Geography to the lowest class of children (say children of seven)?

19. Describe the way in which you would use a globe in teaching the elements of Geography. What other visible illustrations would be helpful in your early lessons? Sketch the outline of a lesson on the formation and use of rivers.

20. What apparatus for teaching Geography may be made by teachers and elder scholars? Describe the process of manufacture in any one case.

21. How would you teach the meaning and use of a map, and how would you give the children the idea of scale?

22. Describe the best method with which you are acquainted of teaching children to draw maps. How would you vary your directions in teaching them to draw maps of England, Russia, and Australia?

23. How is the teaching of Geography promoted by the use of blank maps, by maps of a familiar locality, and by map drawing?

24. Describe a good method of teaching either (*a*) the elements of Home Geography to very young children, or (*b*) latitude and longitude.

25. Under what heads could you classify the information which you would wish children to acquire concerning the county in which they live?

26. Describe as you would to an advanced class (*a*) the circumstances which have determined the seats of manufacturing industry in Britain; (*b*) the causes to which may be attributed the importance of Liverpool, Glasgow, Manchester, Dundee, Hamburg, New York, Hong Kong, Bombay, Constantinople, and Malta.

27. Compare a bad method and a good method of teaching Geography. Show the connection of Geography with History, and illustrate by any event which necessitates the knowledge of both subjects.

28. In what way are Geography and History related as studies, and how may they be taught so as mutually to assist each other?

HISTORY

1. What are the objects to be kept in view in the teaching of History in schools; and what kinds of historical facts possess most interest and value in the instruction of young children?

2. Show the use of ballad poetry in the teaching of History, and illustrate your statement by some historical ballad.

3. Write out the chief topics to be selected for a lesson on the reign of one of the kings of England.

4. What plan would you follow in giving a description of some famous battle? Illustrate your answer by the battle of Flodden or Waterloo.

5. Select points in the character of Lady Jane Grey, or Robert Bruce, or Nelson, that would be specially attractive to children, and write out some anecdote by which you would illustrate each point.

6. Write out those dates of events in English History during the Seventeenth century which you consider worthy of being committed to memory by children, and give reasons for your selection.

7. Name some stories from English History that you have found to be most attractive to young children, and explain simply the causes of their attractiveness.

8. It is sometimes said that one of the best ways of teaching History is by means of biography. Explain this. Name five or six persons whose biography would throw great light on the history of the eighteenth century, and give a slight sketch of one such biography.

9. In giving a lesson on the Duke of Wellington, show what use you would make of comparison and contrast with any other character in history.

10. In teaching History, say what use, if any, you would make of chronological tables. Is it better to learn the date before or after the pupil knows something of an event, and becomes interested in it? Give your reasons.

11. What methods can you suggest for giving children an idea of the continuity of History?

12. In teaching History show how the principle of Association of Ideas may be utilised. Show the necessity of giving a knowledge of the Geography of a country in teaching its History.

13. What illustrations may you use with advantage in teaching History? Explain how you would use some of them in a lesson upon some historical event.

14. How far may biography be usefully employed as auxiliary to the teaching of History? Give a few names of eminent persons who might wisely be chosen for this purpose, and sketch the life of one of them so as to show how the History of a period might be illustrated by it.

THE EDUCATION OF INFANTS

1. Give the heads of a lesson on the three principal colours, and say what objects, pictures, or apparatus you would need to make such a lesson interesting and useful.

2. Describe the best system you know for teaching form and colour.

3. Explain the terms Kindergarten, Froebel's gifts, and state fully the educational use of the second and fourth gifts.

4. Detail some of the geometrical properties that may be taught to young children by folding square or rectangular pieces of paper, and give illustrative diagrams.

5. Give examples of Kindergarten exercises that may be used to stimulate invention and imitation in young children.

6. Enumerate Froebel's first seven gifts, and show the progressive nature of their lessons.

7. For what purposes are lessons on form and colour given to infants? Name the order in which the principal plane figures should be taught.

8. Describe the earliest lessons in drawing which would be given in an infant school.

9. Of all the different employments now used in infant schools, besides the learning of Reading, Writing, and Arithmetic, which do you consider most useful and interesting, and why?

10. The Code requires that 'appropriate occupations shall be provided for children in an infant school, besides instructions in Reading, Writing,

and Arithmetic, and in common objects.' What are the best of these 'occupations,' and what educative purpose do they serve?

11. In what order would you use the Kindergarten 'gifts' in an infant school? How should the lessons be conducted so as best to exercise the intelligence and observation of the children?

12. '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.' Explain and illustrate this passage, and show how a teacher can best give effect to its recommendation.

13. Describe a good lesson on colour adapted for an infant class, and say what illustrations you would get together before giving such a lesson.

14. Say how you could, either by paper folding or by simple drawing, make the properties of a square visible to young children, and explain what are the uses of such a lesson.

15. Taking a square of paper, what simple ideas of form can you impress on a class by folding the paper so as to make a single crease in it?

16. What are the leading characteristics of child-life which underlie Froebel's system of teaching infants?

17. Describe the chief characteristics of the methods of Froebel, and say how those methods might be most effectively employed (1) in the lower class of infants, (2) in a class of children of the average age of ten.

18. Give a short summary of the principal events in Froebel's life, and the main principles which he advocated.

19. Sketch the character and career of Froebel, and enunciate briefly the two or three main principles which he sought to enforce and to illustrate.

20. Discuss these sayings of Froebel and give them a practical application in the work of an elementary teacher: (*a*) 'In these games I detected the main spring of the moral strength that animated the pupils'; (*b*) 'Closely akin to the games in their morally strengthening aspect were the walks . . especially when conducted by Pestalozzi himself.'

21. Indicate the uses and abuses of the Kindergarten system. To what extent does it cultivate habits of observation and reflection?

22. How far is the term Kindergarten appropriate? What was Froebel's relation to Pestalozzi? In what was he original?

23. How far was Froebel indebted to Pestalozzi, and in what respects did he improve upon his teaching?

24. Point out the progressive nature of Froebel's gifts, and show that the same principles underlie all scientific teaching.

25. What is the educational value of working or pricking out lines of animals or other objects?

26. Make a list of the employments and manual exercises which you consider most useful and interesting in the training of very young children, and say what is the special educational value of each.

27. How far can the methods of Froebel encourage inventiveness and individual effort on the part of children? Give examples.

28. Say by which of the exercises of Froebel, or by what other discipline in higher classes, is it possible to call out and strengthen the inventive faculty in children.

29. What special purposes in connection with the development of a child's mind and character are aimed at in the Kindergarten method? Which of the manual or other employments devised by Froebel seem to you best fitted to fulfil these purposes?

30. It is said that the principles of Froebel are applicable not only to the infant school but also to the discipline and instruction of older children. Explain this and show in what way the manual and other exercises of the Kindergarten must be extended or modified so as to be useful in the upper classes of a school.

31. Show by what devices, and within what limits, Kindergarten work can be developed in the schools for older children, and discuss the value of such development.

32. Give a list of twelve collective lessons, such as you would consider suitable for children of five years of age. Say what considerations would guide you in making the selection.

33. How far is the use of pictures desirable in an infant school? What sort of pictures would you recommend? Give an example of the use you would make of a picture in giving a lesson on a farm yard or on a railway.

34. Show how a habit of close observation of the distinctive characteristics of objects presented to young children may be most effectually cultivated.

MISCELLANEOUS

1. Name some of the chief causes of truancy arising from faults in the teachers, or parents, or children. What steps were taken in your school to acquaint parents with irregularity of attendance? How were truants punished?

2. Were any special means used to secure the co-operation of the parents of the children who attended your class; and, if so, what was the result?

3. It is said in the Instructions to Inspectors that, besides the usual

service to the children who attend it.' Can you name any such means, and say which of them are likely to be most effective?

4. What do you consider to be the daily duty of a head teacher with regard to absentees?

5. Explain why Reading, Writing, and Arithmetic are generally regarded as the subjects of primary importance in an elementary school course. Say what other subject you would place next in order of usefulness.

6. How far is the popular idea that Reading, Writing, and Arithmetic are the basis of secular education correct? In what order of educative value would you place them? What is the proper position of language in mental training?

7. A good school should help its scholars not only to receive instruction, but also to think about what they have learned. Say by what particular forms of exercise the second of these two objects can, in your opinion, be best attained.

8. It has been said that the object of school education is not only to communicate knowledge, but to teach the learner to think and act for himself. Explain how, and by what sort of lessons, you can best give effect to this principle, either (*a*) in an infant school, or (*b*) in a school for older children.

9. In what circumstances is it desirable to teach all the classes the same subjects at the same hours? In what order should you propose to teach Reading, Writing, and Arithmetic during the day, and why?

10. How can a school be made a happy place for young children? By what means besides the intelligence of the teaching can school be made attractive to children of the poorer class?

11. Write a short essay on the relative values of manual and intellectual training, and show how both ought to be kept in view in the management of a school.

12. What do you regard as the special disciplinal and educational value—apart from their practical usefulness—of (1) Mental Arithmetic; (2) Geography; (3) Logical Analysis, and (4) Froebelian exercises in Drawing?

13. How far is the maxim that learning should be made pleasant consistent with Pestalozzi's remark that 'a child must very early in life be taught the lesson that exertion is indispensable for the attainment of knowledge'?

14. Define the terms *education* and *instruction*. Explain the statement: 'Nature itself points out the safe course, and the faculties which first require development are those in which there is the least fear of over-straining.'

15. Mention any books relating to the Philosophy or the Historical Education which should be read by any one anxious to become thoroughly qualified for the profession of teacher, or which you hope to read at leisure, and give your reasons for the selection.

16. On what lessons would you rely most for cultivating the reasoning powers of children?

17. Discuss the comparison of the art of training a child with the gardener's art, and show what justification there is for treating the child's character upon the analogy of a developing organism.

INDEX

ABSTRACT, from the concrete to the, 9
Abstraction, 9, 145
Aims of intellectual education, 6
discipline, 23
Alphabet, the teaching of the, 87
Alphabetic method of teaching Reading, 75
Analysis of sentences, 191
Answers, 48
Apperception, 263
Arithmetic, 144–176
Attention, order, discipline, 10–38
voluntary and involuntary, 19
laws of, 20
hints respecting, 21

BAN DE LA ROCHE, 219
Banzet, Sara, 220
Blackboard summary of object lessons, 73
Blame, as a motive for action, 33
Blankenburg, first Kindergarten at, 244
Buchanan, James, 225

CAUGHIE, David, 231
Child nature, study of, 13
Cleanliness, 32
Composition, 177
Concentration of interest, 265
'Concentric' teaching of Geography, 200
Conductrices de la tendre jeunesse, 220
Copy-books, choice of, 135
'Copying' ('cribbing'), 30, 175
Correlation of studies, 265
Courses of object lessons, 61

DATES in History, 217
Decision in the teacher, 11
Desire to please as a motive for action, 37
Dictation, 123
Dignity in the teacher, 12
Discipline, order, attention, 10–38
aims of, 23
rules respecting, 24

Écoles maternelles, 221
'Education, a complete and generous,' 1
the teacher only one factor in, 1
aims of, 6
of infants, 218–261
'Education of Man,' Froebel's, 245
Eliciting, 52
Ellipsis as a form of questioning, 48
Emulation, 32
English, 177–196
Engraved headlines, 133
Enunciation in Reading, 94
Examination questions, 270–296
Exercise, the secret of development, 8

Experiments as illustrations of object lessons, 70
Expression in Reading, 108

FLETCHER's report in infant schools, 235
'Formal Steps,' the five, 267
Froebel, Friedrich, 237

GAMES, in Pestalozzi's system, 242
the Kindergarten, 259
Geography, 197–211
German method of teaching:
Reading, 83
History, 215
Gifts, Kindergarten, 252
Grammar, 185
Grube method of teaching Arithmetic, 150

HABIT and habits, 25
Herbart, Johann Friedrich, 262
'Hands' in writing, 132
History, 212–217
of English, 191
Holding the pen, 137
Home and Colonial School Society, 234
Hope as a motive for teachers, 11

ILLUSTRATIONS of object lessons, 66
Infant schools in the Ban de la Roche, 220
London, 225
New Lanark, 222
Paris, 221
Infants, education of, 218–261
Involuntary attention, 19

KEILHAU, Froebel's school at, 242
Kindergarten, origin of, 243
meaning of the word, 244
games, 259
'gifts,' 252
Kindergarten occupations, 252
transition from, 260

LANGETHAL, Heinrich, 243
Language in object lessons, 71
Learning is self-teaching, 8
Lecturing and teaching, 39
Leigh method of teaching Reading, 81
Letters grouped for Reading, 89
Writing, 135
Libraries, school, 115
Literature, 192

MAPS, 203
Matter of object lessons, 62
reading for, 112
Mayo, the Rev. Charles, D.D., 234
Meaning of words, 110, 178
Memory, 5
Mental Arithmetic, 164
Middendorf, Wilhelm, 243
Milton's definition of 'a complete and generous education,' 1
Motives for conduct, 32
Mulhäuser's system of teaching writing, 142
Multiplication Tables, 158
'Mutter- und Kose-Lieder,' 258

NEW Lanark, infant school at, 222
Notes of lessons, 65
Number names, 147
Numeration and notation, 156

OBERLIN, Jean Frédéric, 219
Object lessons, 58–73
Occupations, Kindergarten, 252
Open-air lessons in Geography, 201
Oral questioning, 39–57
spelling, 121
Order, attention, discipline, 10–38
Owen, Robert, 221

PARAPHRASE, 179
Parsing, 190

Pastoret, Madame de, 221
Patience in the teacher, 11
Pen, holding the, 137
Pestalozzi, 240
Phonetic method of teaching Reading, 81
Phonic method of teaching Reading, 76
'Picturing-out,' 232
Pitman. *See* Phonetic
Plans in Geography, 206
Poetry, learning, by heart, 193
Praise as a motive for action, 33
Principles, some, of education, 4-9
Prizes, 35
Problems in Arithmetic, 170
Pronunciation in Reading, 94
Punctuality, 31
Punishments, 35

QUESTIONING, 39-57
Questions set by the English Education Department, 270-296

READING, 74-119
Recitation of poetry, 193
Rewards, 34
Reynolds, John Stuckey, 234
'Robinson Crusoe' theory of concentration, 265
Robinson's phonic method of teaching Reading, 76
'Rule by love,' 37
Rules in Arithmetic, the teaching of, 160

Salles d'hospitalité, 221
d'asile, 221
Schepler, Louise, 220
School libraries, 115
Science, claims of, 58
Science, object lessons as introduction, 59
Sense of duty, 38
Silent reading, 114
Simultaneous reading, 118
Slates for writing, 133
Socratic questioning, 55
Spelling, 120-124
Stow, David, 230
Study of child-nature, 13
Styles of writing, 126
Sympathy of numbers, 232

TABLES in Arithmetic, 158
Tact in the teacher, 13
Teacher, the, only one factor in education, 1
should be trained, 3
his threefold work, 4
essential qualities of, 10, 199
Teaching and lecturing, 39
Telling and eliciting, 52
Test-cards in Arithmetic, 175
Training system, Stow's, 231
Transition from the Kindergarten, 260
Truthfulness, 27

VOCABULARY, children's, 71
increase of, 178
Voluntary attention, 19

WEIGHTS and measures, learning, 159
Wilderspin, Samuel, 225
Word-building in Reading, 91
Spelling, 121
Writing, 125-143

YOUNG, Mary, 224

PRINTED BY
SPOTTISWOODE AND CO., NEW-STREET SQUARE
LONDON