

HYGIENE IN EDUCATION.

By I. WHITE WALLIS.

(MEMBER.)

THE Suggestions for the consideration of teachers now issued by the Board of Education indicate the adoption of new methods in elementary education. These may eventually afford an opportunity of putting into practice the more rational principles which have been developing during the past decade; principles which relate both to educational methods and to the conditions of health essential to carrying on the work of instruction in schools.

The first principle laid down is that the child's education should be useful to himself, because

"... the child's time at a public elementary school must needs be limited: every subject of the curriculum must be shown to be of value, and the value of any subject may be discounted by indifferent teaching. The child's education should be useful to himself, and, in so far as it makes him a better citizen, to the community."

"The child must be brought to feel that the course of study set before him is not only a part of the discipline of youth, but bears some relation to human life, its interests, and its needs."

This is the keynote for which the hygienist and the sanitarian have striven since the days of Dr. Parkes, who, more than thirty years ago, closed his survey of Public Health with the words:

"Were the laws of health and of physiology better understood, how great would be the effect! Let us hope that matters of such great moment may not always be considered of less importance than the languages of extinct nations, or the unimportant facts of a dead history."

It takes into account the common sense view of all school education, that while the method in which a child is trained is important to develop independence and thought, yet the material upon which he is trained—the subjects for his learning should be those which are nearest to (and not, as is frequently advocated, the remotest from) his individual life, and which will first of all conduce to his own and others' comfort and well-being. Paramount among these of course is health, and the Board of Education has attempted to grapple with this question by first impressing upon its

teachers that their attitude of mind towards the pupils must be that of discrimination, in order to secure healthy conditions of life and individuality of character to deal with them. This attitude so closely affects the question of health in school and school life, that it may be well to glance at it before passing on to the direct physiological aspect.

To obtain this kind of teaching the Board of Education states that

" . . . the only uniformity of practice that it desires to see in the teaching of public elementary schools is that each teacher shall think for himself, and work out for himself such methods of teaching as may use his powers to the best advantage, and be best suited to the particular needs and conditions of the school. Uniformity in details of practice (except in the mere routine of school management) is not desirable even if were attainable."

Suggestions such as these introduce at once the wisdom of discriminating among pupils. Not only will different curricula have to be adopted for country and town schools, but in the towns and cities distinctions must be made as to the different status of poor children in order that their education may be made useful to themselves. Their immediate environment must be taken into account. The conditions of their present life in relation to housing, feeding, &c., which render it probable that certain subjects will be useful in their after life—and the conditions of the preceding generation even, inherited tendencies to disease, which will throw light upon the probable ability or disability of a child to assimilate the knowledge brought before it.

As an instance in teaching housecraft there is valuable suggestion in the following paragraph:—

"In each branch of instruction the apparatus and fittings used by the girls should be similar to those likely to be found in their homes.

In cookery lessons the aim should be to give thoroughly practical instruction in the choice and preparation, with due regard to economy and the home circumstances of the children, of the essentials of a wholesome diet. No attempt should be made to give instruction in the higher branches of cookery or in anything outside the ordinary possibilities of a simple artisan household; nor should theoretical instruction as to the methods of cooking, or as to the principles of digestion, go beyond what is necessary for a general understanding of the methods practised, and of the general lines on which the diet suitable for different ages of life must be regulated."

Now, if the question of discrimination is carried far enough to help the child of the slum to learn how to be clean, and to get the best ventilation under slum conditions, and to cook cheap nourishing food in the one utensil the family possesses, and in the one room that constitutes the home, a room in which usually no provision is made for conveying or removing water, then a decided step will be made in uplifting the slum dwellers to

a little higher level, from which as a whole they can rise still higher in the next generation.

This discrimination of circumstances seems not to have been contemplated in former schemes of education, which have dealt with the elementary class of children as though their intellectual capacities, their capabilities of character formation, and their future opportunities were equal. The acknowledgment of the inequalities among the children, and the appreciation by the Board of Education that "to give each child his chance" means to treat children differently and not all alike, is a step that goes a long way towards meeting the view of ordinary ratepayers as to a wise education for the lower classes.

This still more individual discrimination is shown in such clauses as the following:—

"The establishment of character must always be one of the main aims of elementary education, and every part of the school life has some influence in this regard, whether for good or for evil. We endeavour, for instance, to adapt the teaching to the attainments of the scholars, not merely to secure due intellectual progress, but because children will acquire the bad habit of idleness both when the work demanded of them is too easy and also when it is too hard."

Again, in discussing the grading of children within a class, the following good suggestion is made:—

"The scholars, combined in large groups for lessons which can be given in common, can be graded in smaller classes for subjects which require individual instruction. In this way the scholars may be made to feel that, whether they are taught in larger or smaller groups, their progress is watched and that promotion is awarded to merit: an effective incentive to industry is thus provided."

Turning now to the physiological aspect of the scholars and their healthy condition in school. It is interesting to note, as a corollary of the efforts that The Royal Sanitary Institute has directed to the subject of school hygiene since the passing of the Education Act in 1888, by communications to the Board of Education and other educational authorities, by the suggestive and explanatory Syllabus of School Hygiene which it has published for its examination, by the special conferences and the resolutions passed at its meetings, many of the ideas advanced by the Institute have been embodied in the Suggestions of the Board of Education.

Firstly, there is the placing of the inspection of school conditions in the hands of the children themselves, beginning from the lowest classes, who are to have object lessons on school fittings and equipment in their own buildings; who are to be trained to think by finding out their uses,

and are to be led to consider how far such matters of health surroundings can be introduced into their own homes. If faithfully carried out these suggestions will be most productive; for, as the Institute's Syllabus puts it: "The general activities of a child's mind may be made use of to secure the proper employment of such fittings by the child himself, and his natural assertiveness will pass the knowledge on, and see it put into practice in homes and schools by younger children." And, the Syllabus might have added, these activities will be of great service to the teachers in noting lapses from perfection, which are more likely to occur in the maintenance than in the construction of apparatus.

The following selection of subjects occur in a classified list of topics for observation lessons, nature study, and the rudiments of elementary science:—

The rooms.—Their shape, size, etc., to be ascertained by children's measurements. Out of school observations of the rooms in the children's homes to be demanded for comparison and contrast.

Bricks.—Their size and shape to be measured by the children. If any brickworks are near, the manufacture should be observed by the children. Common stones used in building and paving.

Doors.—Position, why panelled; sizes of several to be measured by the children, reason for stock sizes; fastenings; construction of locks, how a key works.

The lighting.—Windows, position; sizes to be measured and compared. How the glass is fixed. Where the desks are placed in relation to windows, and why.

Gas.—Observe the flame of burning coal. The teacher can make coal gas before the class. Where the gas that is burnt in the school is made. Trace the course of the gas pipes as far as possible; explain the gas meter; Other lights, petroleum and paraffin, simpler properties and uses. Lamps.

Methods of heating.—Fires; use of chimneys. Hot-water pipes.

Ventilators.—The scholars should observe the means of ventilation, doors, windows, Tobin's tubes, gratings, etc. Measure the space per child of fixed inlet and outlet ventilation.

Desks.—Materials; colour; whether varnished and why; shape, the reasons for it; size to be measured by the children and compared with the height of the teacher's chair and table.

Books.—Material; size; shape; how covered; reasons for differences between reading books, exercise books, copy-books, reference books such as dictionaries, pocket-books, prizes. Type, compare with newspaper type. This should lead to the establishing of Pica for all school books.

Miscellaneous school objects.—The ink wells, material; whether glazed, if so, why! shape. Ink. The bucket, coal scuttle, grate, cupboard, the pencils, pens, chalk, coal, matches, etc.

The playground.—Size, shape, methods of paving (compare with street pavement).

The river basin in which the school is situated.

Construct a model fountain and make simple observations on the pressure of water. Mill-dam. A "head" of water. Notion of falling water as a motor.

Soils.—Clay, sand, slate, granite, chalk; quarries near school; gravel pits, clay pits, brickworks. (Note how the rocks lie, in layers or in masses without structure.)

Freeze some water in a bottle and note bursting of bottle. Bursting of pipes."

Then children are to be trained in the care of health by instruction put into daily practice.

"All children should be trained in good habits by the teachers, and should receive simple instruction which will enable them to observe the principal rules for the preservation of health. The effect of this teaching will be the greater, the more the principles impressed upon the scholars are illustrated in the daily routine of the school."

"In cases where the lavatories are much used, special attention should be paid to keeping them scrupulously clean, and the children should be taught to allow the dirty water to run away after they wash and to flush the basins with clean water. Boys especially may require supervision to make sure that they wash thoroughly before using the towels, and these should be promptly removed when soiled."

"The scholars should be asked to observe a room which is to be cleaned the next day, and should be asked to observe it again when it has been cleaned. They will learn in this way to notice dust or dirt on the floor, the furniture, or the windows."

"In bright sunshine they should be asked to look at the dust in a sunbeam's path, and they will understand that dust is always in the air whether they can see it or not."

"The teacher should tell the scholars that dust and dirt are not only unpleasant, they spoil books and clothes, and are bad for health."

"People who allow themselves and their homes to get dirty are not so strong as they would be if they were more careful in this matter."

"They should be told also that their underclothes should be changed and washed once a week; and that when they leave their bedrooms in the morning they should take the bed-clothes off the bed and spread them out over a chair, or over the end of the bed. Whether they sleep with open windows or not, they should always open the windows wide before leaving the bedroom if they are strong enough to do it for themselves."

Of course there are a few anomalies, and the Board of Education shows a very keen sense of humour in requiring infants to attend morning school under the age of five; inducing teachers to obtain the infants in the afternoon by allowing additional half attendance to be granted towards the total number of attendances reckoned for grant, and then issuing the following suggestion to teachers under the heading, Sunshine.

"Infants should be taught that it is good for them to be out in the sunshine; they require sun for growing as much as plants and flowers."

The quantity required by plants and flowers is *all* that the English climates bestow.

On behalf of the elder children, for whom the period of necessary recreation is limited to ten minutes by the code, and whose school hours practically occupy the whole of the day's sunshine from the age of three to fourteen or fifteen years, the following tame suggestion is offered to teachers:—

“The teacher should encourage the scholars to go out of doors on Saturdays and Sundays, and during their holidays for some part of every day, especially in fine weather, and to take walks in the country if possible, or, if not, in the public parks and gardens. They should be told that this is one of the things that help them to grow and become strong.”

As to sleep, it is suggested that

“ . . . It would be well to tell the infants that it is good for them to go to bed early—at seven o'clock if possible—and have a long night's sleep; it would hardly be necessary to enter into the number of hours. Young children should get into good habits almost unconsciously, without spending time in *thinking* what is bad for them.”

The “Suggestion” paragraph throws light on a man's knowledge of child life to a remarkable extent, and it makes it pleasant to remember that women inspectors are being appointed in larger numbers, and that there is now an office of Chief Woman Inspector at Whitehall; and perhaps the next year's editions of suggestions may provide for children under seven being allowed to take their mid-day sleep at their desks. It would certainly be an expensive method to the country of obtaining sleep for the infants and uncomfortable for the baby, but would be less likely to foster insanity than the present method of constantly waking infants up in class to take their turn at making the letters of the alphabet.

The “Suggestions” contain a special dissertation on temperance (with regard to drink only) in connection with hygiene. It seems a pity that education, which is to train man in self-control on all matters, should be hampered by too much concentration on one evil of life. The passion for strong drink in the country must be checked, like other passions which destroy wholesome living, by fostering habits of self-restraint in individuals, a mastery of self instead of an indulgence; and the localising of effort on one point is likely to weaken effort in the all-round control which makes for character.

It would be well to notice, too, that the arguments for temperance are bolstered up by an indiscriminate condemnation of all liquid except milk and water, and by a rather unphilosophical use of half-truths.

“Milk contains four different things: water, sugar, fat, and curds. There are other things which are important, but not so important as these.

Milk is all that babies want, and all they ought to have. It is very bad to give a baby anything else. Milk also contains all that is really necessary for older people, though they do not live on it."

Such teaching would destroy as many babies as it would save, as, until the age of four or five months, milk without the addition of water and sweetening would cause constipation and fits or incessant sickness.

Again, it is not a whole truth that milk contains all that is really necessary for older people, because it is always necessary to stimulate appetite through taste, and this requires variety. Should such shallow treatment of the subject of foods lead to experiments on milk diet for elder children, the result would be failure, brought about in a slow, insidious manner. It takes years to recover from experiments such as these that are constantly being made by half-taught faddists, greatly to the detriment of the country's general health.

Again, it is stated :

"Tea, coffee, cocoa, and chocolate are all nearly the same, all produce nearly the same effect. Some people take these and say that they cannot get on without them, and are all the better for them. Other people never take these things and do very well without them. Until two hundred years ago no one in England took these things. They are not necessary like the foods which we use to make the substance of our bodies, such as meat, bread, fat.

People who have worked so hard that they are tired out need real food and a good rest.

Tea and coffee and cocoa and chocolate help people to put out their strength faster than if they did not take them; but they do not give any strength which is not already there, they only help people to tire themselves more than ever."

But cocoa and chocolate are in a measure real food, containing both sugar and starch. And though two hundred years ago these drinks were not taken in England, a great deal more beer was drunk, general tipsiness was more prevalent, and life was spent at a much lower speed than it is now.

Unwise generalisations are to be found in other parts throughout the hygiene paper, as in the case of burns, it is taught :

"If a person's clothes take fire the *only* sensible thing to do is to suffocate the fire. The person should be made to lie down and should be covered with sacks, rugs, or other heavy things, which should be pressed tight on the burning garments."

Such rule-of-thumb teaching is harmful; it checks instead of encouraging, the use of common sense, which must practise itself to grasp the situation in cases of emergency, and be able to think quickly what remedy to apply under the existing circumstances.

If teachers are to successfully train the young in the practice of healthy and right living, they must study and train themselves in a more judgmatic manner than any at present laid down by the Board of Education; and it is not remedial work belonging to the medical man alone that is wanted, but *preventive work*, the joint knowledge of engineers, architects, doctors; indeed, nothing less comprehensive and practical than the syllabus prepared by the Institute for their examination will cover the need of the day, while it should not be considered necessary for teachers to specialise in physiology, sanitation, or mental and moral hygiene beyond the scope indicated by that syllabus.

So far attention has been drawn to the instruction and training to be given to the children by the teachers. Now it will be interesting to trace the Suggestions made for the teachers' own practice of health rules in school life. In these the psychological and moral, as well as the physiological, aspects of health—or as it is preferably called hygiene*—that have been pressed upon the Board of Education from time to time, have been appreciated and adopted to a much larger extent than formerly. Some of the Suggestions, however, are open to criticism.

Ventilation.—No matter how complete the arrangements for the continuous ventilation of a class-room may be, the scholars should leave the room at least once during each meeting, and the doors and windows should be thrown wide open. Before and immediately after each school meeting the windows and doors should be opened to their fullest extent in order that the school may be thoroughly flushed with fresh air. No lesson in physical training should be given with closed windows.

Lighting.—Where the lighting of a school is not good it is necessary, until improved arrangements can be made, to adapt the Time Table carefully to meet the difficulties which are found as to certain subjects. Needlework, especially the working of specimens, writing and drawing should all be so placed in the time table that the work may be done when the light is most favourable. In winter, when the days are short, the time at which these lessons are given may require frequent alteration."

This clause overlooks the fact that just as perfect lighting is required for reading as for sewing, writing, and drawing. Where favourable conditions cannot be obtained for all eye-work, eye-work must be abandoned.

* It is a pity that a false prejudice has arisen against the word hygiene, and that an attempt is made to substitute for it the cumbrous expression "the simple rules of health." There is no exact equivalent in the English language for the word Hygiene, which means the modification of the simple rules of health to meet the artificial circumstances of civilized life, and includes the idea of prevention—a knowledge of how to prevent the artificial circumstances interfering with health. It is a scientific word, but no objection should be raised on the ground of its accuracy, if it is granted that the word is used to describe the knowledge and not as an empty form.

"Heating.—The temperature of a room used for teaching should be kept, as far as possible, at 60° F. A temperature below 50° F. is too low for young children, and a temperature above 70° F. is unhealthy, and tends to loss of muscular tone and of general energy.

If the school is warmed by open fires or stoves a dish of water must be placed near the source of heat, in order that the air of the room may be sufficiently moistened. Otherwise the throat, eyes, and mouth become dry, and the work of both teachers and scholars becomes difficult.

Equipment.—In the school-room there are certain points of equipment which have an important bearing on health. The desks influence the posture and attitude of the children for long periods, and if too large or too small may tend to produce permanent bodily distortion. The more recently equipped schools provide desks of graduated size in order to suit children of different ages, but it is still common to find children—especially girls, who often grow rapidly after ten years of age—sitting at desks many sizes too small. In such cases new desks properly adjusted to the height of the scholars should be at once obtained. Long parallel desks are objectionable.

In many schools the infants are still cooped up in steep, long-desked or even deskless galleries. This practice should be abandoned at the earliest practicable moment, and the gallery should be replaced by suitable desks or chairs placed on the floor.

Posture.—Even if the children are suitably seated the teacher ought not to neglect their posture during lessons, more particularly during lessons in which they write or draw. Every lesson in which the children write should begin by securing a correct position, and the direction should be repeated by the teacher if the scholars are found to assume unsuitable attitudes.

A child when preparing to write should be required to sit upright and square to the desk with his feet firmly planted in front of him on the floor or foot rest; and the teacher should never allow a deviation from these two essential points to pass uncorrected, though if these points are secured it is perhaps better to neglect minor points. No child should ever be allowed to lean with his chest against the edge of the desk. The left arm should be placed along but not on the desk, and the left hand on the paper. In holding the pen or pencil the child's first and second fingers should be straight or bent slightly outwards, never rigidly bent in. A slight motion of the pen can then be made without any motion of the hand. The pen or pencil, to encourage finger movements, should be held at least an inch from the point, and should be inclined to the paper at not less than 60°. The child should always be able to see the point of his pen or pencil as he writes."

There are other points with regard to posture that depend upon the fitting of the child to his desk.

"The use of slates is inconsistent with correct posture in writing, and is objectionable on other grounds; it should therefore be discontinued.

In many schools children are still compelled to sit in strained attitudes during some part of the school hours. This practice is highly objectionable, and children should never be required to sit with their arms folded behind their backs or over their chests, or with their hands clasped on their heads."

The signs of good health are clearly stated and should help teachers to be quick in observation, although this will be of little use unless applica-

tion is made of his knowledge of hygiene, for it is to be feared a very small proportion of town children come up to this standard of good health.

"Signs of Good Health.—Erect carriage and straight limbs will mark normal children who are in robust health. The head will be held well up, the shoulders thrown back, and the feet will rise smartly in walking or running. The limbs and back will be well covered with flesh, the grip will be firm and sustained, and the whole frame will be full of energy.

The skin of the face will be firm, clean, and free from marks, the eyes will be clear but not unduly bright, the hair will be glossy, and in the case of girls will grow copiously. The lips will be a deep pink, the teeth white, and well set, the tongue will be clear, and the mouth will ordinarily be closed and the breathing unimpeded.

The rate of growth will be even and subject to no marked interruption, and the height and weight will be near the average for children of the same sex and age. Boys up to the age of ten will be rather taller than girls, but after that age girls will grow more rapidly for some years.

Healthy children require activity and regular meals during the day and complete rest at night. Up to the age of twelve every child requires at least ten hours of restful sleep out of the twenty-four."

In the chapter on physical education the Board makes the statement that

"... short periods of vigorous movement designed solely to stimulate circulation and respiration should be used as a wholesome means of refreshment for both children and teachers. No special skill on the part of a teacher is necessary for the conduct of exercises of this type, which should be performed several times daily by the children standing up in their places in class."

This suggestion would be good if the exercise were only a source of refreshment, but experience has proved again and again that vigorous exercise, taken under control during fatiguing mental work, and in the crowded, dusty class-room, is a cause of further fatigue, even though it stimulates circulation. If it be a fact that respiration is much stimulated by the exercise, then there is greater danger in deep breathing of the fouled air. One would not recommend vigorous exercise of the lungs while stepping over a drain gully, or passing a dust-cart.

Much greater service would be rendered to the children and no more time occupied, if they were allowed two free recreation periods of ten minutes in the open air instead of one during the long morning sitting; or short periods for free talk between each lesson, which should never exceed forty minutes, even for the elder scholars.

The complete system of physical exercises aimed at for children in the elementary schools is so elaborate that it excludes all who are not well fed, and has to be hedged about with many precautions.

"In order to secure the educational effect of physical training there should be included exercises, like those of balance, which have more special relation to the acquirement of full control over bodily movements. It is to be remembered, however, that when exercises of this class have been so well learnt by practice as to become automatic, their immediate educational value disappears, and the continual addition to the course of further and more difficult exercises is necessary in order to complete the usefulness of physical training.

Every teacher who conducts a complete system of physical training ought to be able to decide what children are plainly unfit, whether by reason of malnutrition or of ill-health arising from other causes, to undertake the full course which normal children can pursue without any risk to health. Other children, in whose general appearance there is nothing to indicate physical unfitness, show symptoms of breathlessness, or excessive fatigue after exercise, and should be excluded from physical training until a medical opinion has been obtained. All teachers ought to be able to decide which children should be excused physical exercises until an expert decision as to their fitness has been given. The physical training of older girls should always be in the hands of women teachers."

The value of good playgrounds and adequate school-room accommodation is hinged on to physical exercises instead of on to free play, and daily and hourly healthy life.

"Physical exercises should be practised in every school according to an approved system. The Board recognise that facilities for such instruction do not exist in every school. Not only competent teachers but suitable playgrounds and school-room accommodation are absolutely necessary if physical training is to be thoroughly given."

Nevertheless the chapter contains some simple suggestions, which might be of service to all if carried out in the spirit of well-played games, instead of compulsory exercises.

"As a condition precedent to good physical development children must not only be well fed, but the functions of nutrition must be well performed. It is, therefore, necessary in the first place to give careful attention to exercises which affect the respiration and circulation. Every system of physical training should therefore make full use of the natural free play movements of children, especially as exhibited in running and skipping games, and should also include breathing and other exercises specially designed to increase the capacity of the chest and strengthen the chest muscles.

A system of physical exercises should aim not merely at improving the physique of scholars. It should tend, in addition, to develop qualities of alertness, decision, and concentration; and should promote the complete co-ordination of the movements of the body under the control of the mind. The latter aim has an immediate connection with the rest of the school work, and in so far as a course carries out that aim it is educational in the best sense."

The questions of mental hygiene touched on by the Suggestions turn on the continued use of the concrete during the whole of the school course,

and the co-ordination of different subjects in the curriculum, to keep the child's attention upon them during the same periods of lesson work, and keep his mind clear as to the relation of one to another; but the Suggestions as to how to do this are rather barren.

"It is not possible greatly to reduce the number of distinct subjects appearing in the time table; they can, however, be co-ordinated. The formal rules of grammar need not find a place in the time table as a separate subject if correct speaking, reading, and writing are thoroughly taught. History and geography can be taught in connection with each other to a very considerable extent, and the former can be partly taught, and the latter illustrated, from the reading lessons; while the first notions of physical geography can form the subject-matter of observation lessons. Drawing also may be partially taught in relation to other branches of the curriculum. The teaching of physical geography is easier in the country, because the configuration of the land is more easily visible; commercial geography and history are perhaps more easily grasped by town children; while arithmetic can be taught in relation to the work of the farm on the one hand, and to that of the counting house or workshop on the other.

A small modification of the ordinary course of lessons will often be sufficient to secure a wider and more practical instruction, and attention should always be given in this connection to local circumstances and the probable future occupations of the scholars."

But under the heading "Training of the Intellectual Faculties," good advice about mental fatigue is given.

"The process of teaching involves a careful development of the faculties of the child.

Enforcement of attention and training of memory are among the essentials of education, but attention should be observant and intelligent, and the power of sustained attention is not acquired with ease. Care should be taken lest attention demanded at undue length for one subject lead to weariness, disgust, and waste of time.

As the attention should not be overstrained, so the memory should not be overburdened. A facility in reading and writing should not be regarded as an end in itself, otherwise children assume that reading is a tiresome exercise, and that writing is a form of handicraft valuable only to clerks. The reality of the matter should be brought home to the child's mind that writing is a means for fixing in intelligible language and character the passing thought; that reading is a means of increasing the stock of words at command, of acquiring new ideas about men and things in the present and the past, a resource for leisure, for illness, for old age; an essential not merely to success but to pleasure and interest in life."

Quite a vivid light is thrown upon the moral hygiene of school life, by the suggestions of the influence of the teacher's example on the training of the child. Thus it is not only the ordinary routine duties of action that are enjoined upon the teacher, but even gentle speech, since "the children will imitate what they see and hear."

It would be difficult to estimate the amount of moral reform that would

be insured to the English nation by the introduction of "gentle speech" among the labouring classes and slum-dwellers.

"It is important beyond question that the aim of the teaching should be a high one, but it is even more necessary that school life should prevent scholars from forming bad habits, and, if possible, in good conduct in a wider sense than cheerful observance of school regulations.

In the matter of the moral training of children, a most important factor will be the habitual conduct of the teacher in the school. The example of his patience, kindness, and determination to be obeyed, of his constant watchfulness and scrupulous fairness, will evoke similar traits in his pupils, and will give point and force to formal instruction.

The everyday incidents of school life will enable the teachers to impress upon the scholars the importance of punctuality, of good manners and language, of cleanliness and neatness, of cheerful obedience to duty, of consideration and respect for others, and of honour and truthfulness in word and act. Children will notice such details in the conduct of a teacher as punctuality, order, neatness, and gentle speech, and they will imitate what they see and hear. They are quick to observe, and if the teacher's conduct is in these respects defective, his example must almost certainly have disastrous effects on the habits of the scholars."

Further suggestions are given as to training the gentle voice in speaking while teaching singing.

"The teaching of singing and the teaching of the mother tongue can be closely associated at more than one point. In the earlier stages training in proper breathing and the accurate production of speech sounds will be as valuable aids to good speaking as they are to sweet singing. A child's speaking voice should indeed be made musical no less than his singing voice. Simultaneous recitation and simultaneous reading aloud are as objectionable on musical as on educational grounds, because the use of such methods is sure to produce reading and recitation which is either frankly unintelligent or marked by a fictitious or imitated intelligence. Such reading or recitation is, therefore, both monotonous and mechanical.

In the highest standards the voices will in cases show signs of beginning to change. Great care must be taken of these voices, and all loud singing prevented.

It is of the utmost importance that little children should be trained to sing sweetly and without strain. Children who cannot sing in tune, or whose ear is otherwise defective, should be made to listen to the singing. These non-singers should be weeded out as early as possible and grouped at the front of the class. Their voices should be tried from time to time, and as their power of singing develops they should be drafted back into the class.

Children who are not taught to use their voices properly are very apt to form the highly injurious habit of using only the lower or 'chest' register of their voices when they sing. If they attempt to sing an ascending scale in this register it will be noticed that their voices break when they reach C or D, and that the rest of the passage will be sung in the 'head' register, which is the true child voice to be cultivated. A short daily practice of a few minutes will be sufficient to secure the use of the proper register if the following rule is attended to. Let the children sing a

note high enough to be out of the 'chest' register (D', E' flat, or E'), and then, in the 'head' voice, a descending scale or passage, using the vowel sound of the word 'on,' requiring the use of the 'chest' voice only in the lowest notes, if at all. Quiet and slow practice of a few such passages each day will render the tone of a class pure and beautiful, and will preserve the voices against the time when they break or alter. The teacher should remember that children can sing quietly more easily in the right than in the wrong way."

The gentle speech of a teacher is so closely connected with the esteem in which he is held by the children, that the hygiene of school discipline seems to find its place naturally in this connection; and the modified discipline recommended by the Board of Education shows what they consider may be effected by more rational and life-like teaching, associated with more cultured and less harassed and overworked teachers.

"With many children the reproof of a teacher whom they esteem is in itself a punishment which makes positive penalties unnecessary; with others the most sympathetic teacher may find that punishment in some shape or other must be resorted to. When it is necessary to punish a scholar for faulty schoolwork or for breaches of school rules, the principal object should be the benefit of the scholar, though the vindication of school discipline is often necessary in difficult cases. The penalty assigned must therefore be just, that is, it must be a reasonable and natural consequence of the fault in the case of the particular child. For example, faults due to carelessness or wilfulness may merit a punishment which is not deserved if the same faults arise from that slowness of mental development which may often appear in children from poor homes. If the bodies of such children are not actually ill-nourished, their intellectual development is often retarded by uncongenial surroundings. The punishment of such children for faults of school-work is a matter which calls for the exercise of judgment.

Efficient discipline under favourable conditions would form those good habits which make punishment unnecessary; the undue frequency of punishment indicates faults in the teaching as surely as in the children. Order, diligence, and obedience, if secured only by means of punishments, do not constitute good discipline; and whether maintained by fear of punishment, a discipline which places children under constraint is incompatible with the best kind of teaching. In no case should infants be punished by the infliction of bodily pain, nor should girls be subjected to corporal punishment unless in exceptional cases, and then if possible at the hands of a woman teacher."

The chapter on the use of examinations discusses the question altogether apart from the hygiene point of view, and shows a want of any hygienic conscience at all, in conducting what are understood as examinations. The "Suggestions" are, of course, right in saying that

"... Examinations are at best a concession to the weakness of the human memory and understanding. If everything that we learned was immediately assimilated, placed in its right relations to the rest of our knowledge and never forgotten, the purpose of examinations would be gone.

Furthermore, examinations conducted by external authorities are an interruption to continuous school work: unless they are most intimately related to the work which has been done both in and out of the class they have a tendency to divert the scholar, not merely from discursive and aimless wanderings in the field of knowledge, but from all study but such as can be reproduced in competitive display: and they encourage a knack of presenting knowledge in compact and handy forms which tends to make the scholar forget or disparage the larger purposes of study."

It is also true that examination is an essential part of teaching, and used only as a part of teaching, the continual use of examinational methods as helps to the assimilation of knowledge and the associating of new material with old material would meet with the approval of the hygienist both as physically and mentally healthy, and the following statement would be endorsed:—

"Neither teacher nor pupil should regard examination as an end in itself, although, if properly used, examination is an essential part of teaching."

But it is not this healthy mental work that is meant in the following paragraph, which refers distinctly to terminal examination; oral in the lower classes and written in the upper.

"Examinations, however, even when conducted by the teacher, should not be frequent. In no case should they be held more often than four times a year: and in schools whose size or organisation allows the Head-Teacher constantly to supervise the work of his staff, two formal examinations in the year are often sufficient."

There is need for more attention yet from the hygienic world to the questions of examinations and evening lessons, if the new spurt towards a more rational education is to have full effect on the health and well being of the masses. The educationalists, who have already been looking to The Royal Sanitary Institute leading the way in hygienic reform in matters of school sanitation and physical culture, ought not to be disappointed of help in carrying out the larger hygienic movements of retaining the healthy mind and gentle manners which are the highest outcome of real culture; these should be as truly striven for as a result of elementary education as of university life.
