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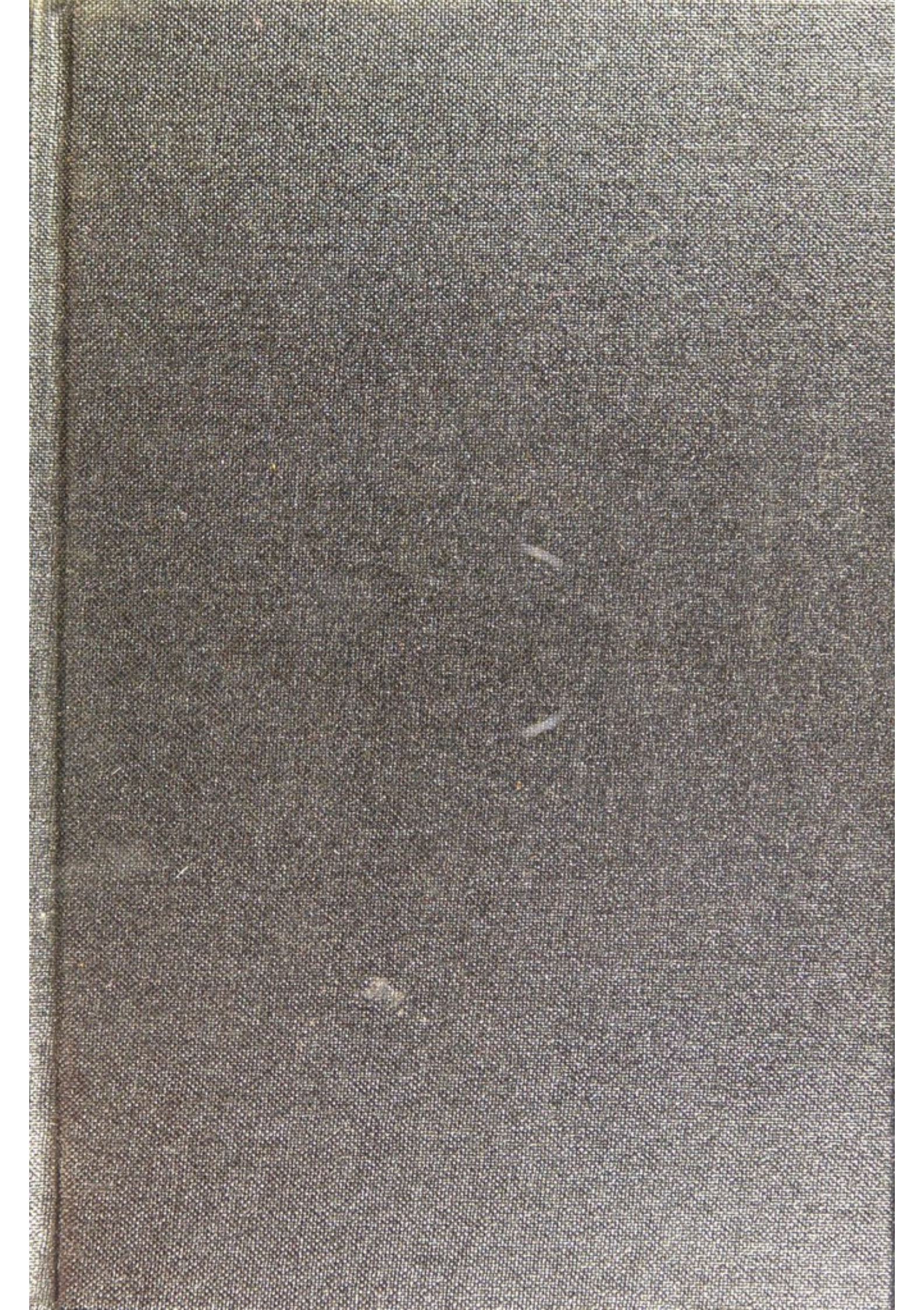
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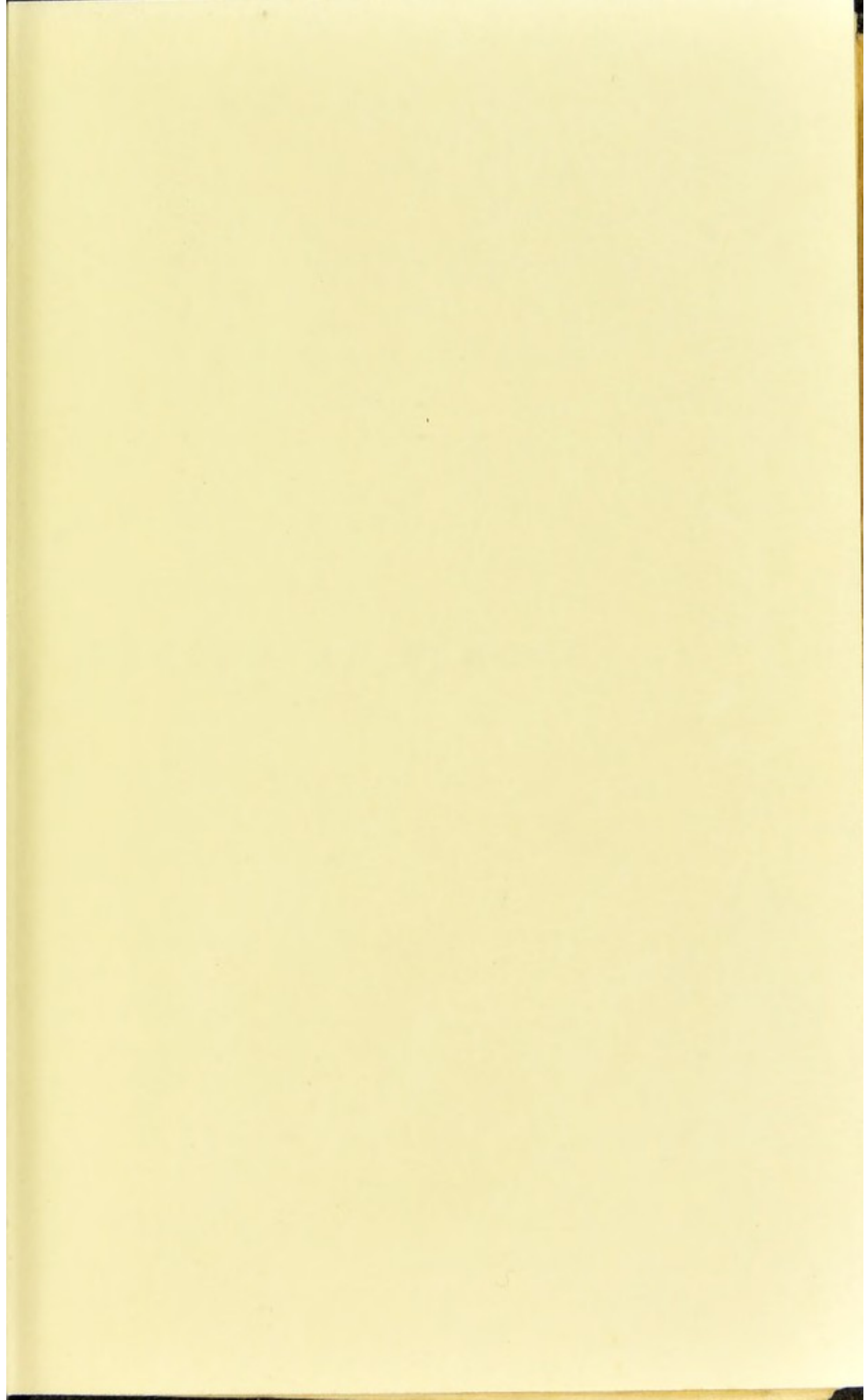


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HEALTH AT SCHOOL

CONSIDERED IN ITS

Mental, Moral, and Physical Aspects

BY

CLEMENT DUKES, M.D., B.S. LOND.

MEMBER OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON;

PHYSICIAN TO RUGBY SCHOOL;

SENIOR PHYSICIAN TO THE HOSPITAL OF ST. CROSS, RUGBY;

HOWARD MEDALLIST OF THE ROYAL STATISTICAL SOCIETY OF LONDON.

THIRD EDITION

REVISED, ENLARGED, AND ILLUSTRATED

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To the Memory
OF
THOMAS ARNOLD,
OF RUGBY,
THE BENEFACTOR OF SCHOOLS AND SCHOLARS.



PREFACE TO THE THIRD EDITION.

THE seven years which have elapsed since the second edition of this volume was presented to the public have been marked by notable changes in school life, which must have given satisfaction to parents, teachers, and scholars. Even if these changes have been tardy in their advent, they have all been on the side of progress, and have tended to the amelioration of discomforts and the removal of defects. With all these encouraging signs, however, it remains unfortunately true, as those know who have devoted special attention to the questions discussed in this volume, that reforms are still imperative in order that the young may derive the amplest benefit from their years of school education.

These changes have necessitated the re-writing of the greater part of this treatise, and the addition of new chapters, which should have been included in the previous edition. For instance, the important sections on School Examinations; Sunday at School; and especially the School-boy Code of Honour, on which, according as it is based on personal influence directed in the right mode, vital results depend; for I need

scarcely point out how essentially the character of the school and scholars is involved in the Code of Honour, which regulates the tone of life at school, and thus affects moral conduct in after-life.

Wherever it was possible, I have strengthened my opinions by quoting those of other writers whose views are admitted to be of weight.

With a view to rendering this book a thoroughly reliable guide for all who are interested in the education of the young, I have enlisted the services of many friends who are well-known authorities in the several sections of the subject. These friends have afforded me valued assistance by reading either the whole of the proof-sheets or those parts in which they possessed special knowledge, and have furnished me with important hints and amendments, which have tended to increase the value of the work to a large extent.

I have especially to offer my cordial thanks for the never-tiring aid of my friend, Mr. T. Emley Young, B.A., F.I.A., for his great assistance in passing the work through the press.

CLEMENT DUKES.

RUGBY,
April, 1894.

PREFACE TO THE SECOND EDITION.

For many years I had contemplated writing a text-book on School Health, as none was in existence. With this view I had been collecting materials from all trustworthy and available sources, when the resolve was brought to a climax early in 1882 by the request that I should contribute the article on "Health at School" to "The Book of Health," edited by Dr. Malcolm Morris. In preparing this article, however, it was necessary so to condense it that I resolved that, at the earliest opportunity, I would develop the sketch which was then only possible.

The subject of Health at School is so large and so important, that I have found it difficult to discuss it adequately within the compass of an ordinary volume. I have, however, striven to depict with sufficient fulness all that concerns the welfare of the scholar—the manner in which the child should be prepared for school-life, and the circumstances that affect his health during the years at school. I have mainly described the first-grade

schools, but all schools are more or less included from the point of view of health.

I trust that the volume, notwithstanding its imperfections, may be found of value to all who have the welfare of our schools at heart and who take an interest in the training of the young for their appointed work in the world.

CLEMENT DUKES.

RUGBY,
October, 1886.

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LIST OF AUTHORS

TO WHOM REFERENCE IS MADE.

TITLE.	AUTHOR.	DATE.
"Prisons and Lazarettos"	Howard	1777
"Our Public Schools"	<i>New Quarterly</i>	1878-80
"House Boarders and Day Boys"	<i>Contemporary Review</i>	1884
"Life of Rowland Hill"	Birkbeck Hill	1883
"A Schoolmaster's Retrospect"	M. C. Hime	1885
"The Practice of Education" . . . . .	. . . . .	1883
"General Aims of the Teacher and Form Management" . . . . .	. . . . .	1883
"Form Discipline"	Sidgwick	1886
"Suggested Reforms in Public Schools"	Cotterill	1885
"Elementary Schools"	Bousfield	1890
"School Life in its Influence on Sight and Figure"	Liebreich	1878
"Education without Deformity"	Noble Smith	1891
"Dwelling Houses"	Corfield	1880
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"The Construction and Maintenance of School Infirmaries and Sanatoria"	1888
"Manual of Diet"	Chambers	1876
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"Book of Health"	Morris	1883
"School Hygiene"	Farquharson	1885
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"School Hygiene" . . .	Roth . . .	1886
"School Hygiene" . . .	Carpenter . . .	1887
"A Treatise on Hygiene and Public Health" . . .	Stevenson and Murphy . .	1893
"International Health Exhi- bition Literature" . . .	. . . . .	1884
Numerous Papers in Periodicals and in the Proceedings of various Societies.		

I.

INTRODUCTION.

LIKE many accepted truths, the unity of man's nature, and the consequent intimate relation between his physical condition and his intellectual and moral efficiency, had long endured the fate of lying bed-ridden, as Coleridge expresses it, in "the dormitory of the soul, side by side with the most exploded errors"—as little operative as though it formed a member of the latter class.

This truth, however, is now being rescued from such companionship, and attempts are at last being made in various directions to render it practically vital. It will be admitted that at no stage is it more imperative to give effective recognition to it than during the period when both the physical frame is in process of natural development and the mental powers are at the same time, by every method known to able and experienced teachers, being brought into active play and power. A false step here—a want of concurrent development between the mind and the physical basis with which it is connected—may seriously affect the whole of the future life, and the efficiency of the boy as a worker in the world. It is accordingly a feature of great encouragement to those of us who have to direct the care of health, that, following the examples set by recent masters and teachers of sound sense and knowledge of human nature,

the teachers of the present day are generally willing and eager to receive and act upon the teachings of sanitary science, knowing that *their* work is aided and improved by the work which that science takes in charge. Education happily has ceased—or, at all events, is ceasing—to be the mere cramming of facts into pupils' minds, to the consequent over-development of memory and the neglect of the active powers of mind; and it is now recognized that it must not simply store brains, but educe faculties, and form character, and, simultaneously, that the physical powers and functions require also a genuine education of their own.

How far this encouraging change is due to the enlarged study of natural science, now so prevalent in our schools, and the tone of thought and observation which it produces, it is not within my province to inquire. The introduction of that study has, no doubt, borne its share in the change; while the principles with which it has made parents, boys, and masters familiar, will render easier their perception of the principles of sanitary science, and increase their ability to apply them.

The time, therefore, seems to be ripe for some adequate and simple guide to the application of the principles of hygiene to school life; and my object in the following pages is, consequently, not simply to describe the general principles of health, but to treat of them in their relation to the circumstances of life at school, and, as far as possible, to lay down precise and clear rules by which, to an adequate extent, the masters and the boys themselves may be readily guided.

I shall speak largely of the scheme that should be adopted in "public schools," with respect not merely to the individual health, but also to the entire surroundings of the boy: his play; his time, amount, and mode of work; the sanitary conditions requisite in the school-

room, the study, and the boarding-house; his meals; and his general course of life while under school control; together with the relations, in respect to health, between the life at home and at school.

It is obvious, however, that my remarks will equally apply, allowance being made for purely local arrangements, to "private schools," whether for boys or girls.

The relation between home and school, in respect to health, is of the most intimate character; for the best supervision at school can only work upon the raw material, so to speak, which the home supplies.

The most elaborate sanitary appliances at school, and the most carefully-constructed scheme of life, cannot rebuild the imperfect constitution—so frequently brought to school by the boy—produced or fostered by foolish indulgence, by sanitary defects, and by neglect of the rules of health, at home.

It is to be remembered that in some of our best schools—not always the most expensive ones—boys are *already* better housed as regards sanitary arrangements, more appropriately fed, and more carefully looked after, than they are at the homes from which they come; while other schools—which, from their high social position, their wealth, and the costliness of the education they afford, should lead the van in all necessary improvements—furnish almost typical examples of the faults they should avoid.

I, therefore, indulge the hope that such methods and rules laid down hereafter as may be applicable to home life—for, though here regarded in relation to school, they necessarily possess the widest range—will gradually be adopted, until the boys proceeding to our schools shall be, as far as healthy conditions and personal parental attention can secure, strong, manly fellows, who shall complete that happy transformation of our schools

throughout Great Britain which for years past has been continuously taking place.

I am also hopeful that this result will be aided by the inculcation upon boys of simple personal rules of health, which I shall deal with later on; not only because their intelligent concurrence in some of the methods adopted to secure the fullest health is needed, but also that they, in their future capacity as parents and teachers, may the more zealously and with adequate knowledge devote themselves to the work of providing and maintaining, wherever their influence extends, that sound body in which is to be developed a sound mind.

Herbert Spencer has truly said: "The most important form of knowledge which a man can acquire is the knowledge how to regulate his own life; the next, how to regulate the lives of those who come after him."

I shall conclude with a few remarks upon the proper training of girls during school life: a most important subject, looking to their destiny as the mothers of the future, and the need of their transmitting a hardy and healthy race. Unfortunately, this subject is not only too often overlooked, so that the physical education of girls is wholly neglected, but some of the prevailing methods of female education—among which I would specify the excessive competition in examinations which is now so rife among girls—are absolutely fatal to a healthy girlhood.

I speak briefly upon the mental and moral considerations which enter into all systems of hygiene, and which are inseparable from them. The teaching at home in respect of self-reliance, patience, purity, truth, and endurance, followed by the vigilant development of these virtues in the little world of school, while ennobling the whole nature, aid essentially also in securing that simple strength and vigour of bodily frame which will more and

more fit it to become the worthy companion and servant to the soul.

The sole test of every religious, political, and educational system, is the character of the men whom it forms. As Mr. Leckey has observed, "the national type of excellence is, for the most part, the expression, or net moral result of the national institutions and circumstances."

II.

SCHOOL HEALTH.

THE character of a nation depends upon the completeness of the mental and moral training of its young. The vigour and enterprise of a nation depend further on the health and physical training of the young during their years of growth and development. There is, therefore, no more important question for any country to consider than the adequate education and health of its offspring of both sexes. This is true for all classes, but especially so for those who are trained at our first-grade schools, and who become the leaders of this country in all its diverse pursuits.

Education is only *second* in vital importance to Health; and it is obvious that every teacher who has the education of the young at heart should strive to render the growth and vigour of the pupil as perfect as possible, both mental and bodily. If parents and teachers thought more of sound, healthy *bodies*, and less of encyclopædic *brains*, we should have stronger intellects, finer characters, and less vice. In his address as Lord Rector of the University of St. Andrews, Lord Dufferin said: "Our mental functions, our memories, our attention, our power of continuous application, are even more dependent for vigour and vitality on the general condition of our health than is the play of our muscles."

What is the value of education, of position, or of

wealth, without that first requisite for their enjoyment—Health?

In writing on education, Herbert Spencer said: "The first requisite to success in life is to be a good animal; and to be a nation of good animals is the first condition to national prosperity."

To ensure Health at School all the conditions affecting the pupils should be so regulated and controlled as to produce, following a maxim of some political economists, the "greatest health of the greatest number." For while an individual pupil may live under obviously unhealthy conditions, and not apparently suffer, yet if a number are congregated together under similar conditions, illness will immediately arise. It is, therefore, manifestly to the advantage of the individual pupil that the arrangements should be such as to secure the health of the number; for a number can only remain healthy when their surrounding conditions are in the highest state of efficiency. It should always be borne in mind, that there is no such sensitive test of the sanitary state of a house, or neighbourhood, as the health, diseases, and death-rate of the young who reside in it.

Under healthy conditions alone can the greatest amount of work be obtained from, and the most favourable chances for growth and development be ensured to, the individual during the period of adolescence. Yet parents and teachers often think too much of mental, and too little of physical, education in all its branches; whereas school should be *the* place of all others for developing a strong constitution, and even eradicating any hereditary tendency to disease, since it is during the school years, while growth and development are in full force, that this must be mainly achieved. Without such strength of constitution brain-power is of comparatively little avail for contact with the world. This is true as a rule; and

though there are many well-known instances where the keenest intellect resides in the feeblest body, the latter no doubt cramps the power of its inmate, making the owner wish that it were not imprisoned in so poor a tenement, and causing the world to wonder what more marvellous results the intellect would have produced had the bodily vigour been robust.

In George Eliot's "Life" (vol. ii. p. 354), we find her saying: "How impossible it is for strong healthy people to understand the way in which bodily *malaise* and suffering eats at the root of one's life. The philosophy that is true—the religion that is strength to the healthy—is constantly emptiness to one when the head is distracted, and every sensation is oppressive."

School health can only exist under such a mode of life as shall tend to produce a sound mind in a sound body, and not a well-crammed head on a stunted body. I shall, consequently, have to speak of the pupils' mental and moral training in considering school health; for the health of the body is influenced to a great extent by the mental and moral education of the pupil, and no amount of health can exist without the harmonious and concurrent culture of mental, moral, and physical conditions.

That very large schools—especially under the public-school system—are a feature of English school life is beyond question. That this is the best system is, I think, beyond a doubt. But while I advocate these large public schools, which are continually on the increase, I am convinced that they should be split up into various boarding-houses or sections, as each can then be better managed; and if infectious illness should arise it is less likely to become epidemic than if all, or most, of the pupils were congregated in one house.

These boarding-houses should contain neither a large nor a small number of inmates: the most manageable

numbers range from thirty-five to fifty. The collection in one school-house of a number in excess of this limit—boys frequently being herded together by the hundred—assimilates school-life to barrack-life, and removes the possibility of that personal supervision which is essential in the training of the young. A less number than the minimum I have specified is unlikely to induce a first-rate master to undertake the responsibility of a house, or, having undertaken it, to retain it.

III.

THE SELECTION OF A SUITABLE SCHOOL.

THE excellence of a school should be judged, not by the honours gained by the first few boys, but by the character of the training which the *average* boy receives. Parents should not be misled by the scholarships gained by certain schools, for it is an unfortunate fact that there are schools—even high-class ones—where the time and attention are largely bestowed upon the few bright boys, simply as an advertisement, while the dull boys are almost entirely neglected. So notorious was this the system at one school with which I am acquainted, that a friend of mine, who became a master, resigned at the end of his first term, rather than see the boys thus generally defrauded of rightful attention while the proprietor earned money and reputation by this unjust and inequitable course.

Some time ago a head-master wrote to me to this effect: "If parents knew, and acted as a body, and demanded their rights, what advances might be made! But they do not, so the schools provide what will pay, viz. 'show'—paint and scholarships."

The boys who gain the honours could probably educate themselves; the quality of the great majority of the boys furnishes the test of the effectiveness of the school. Yet in many schools even the bright boys are

only allowed to do their best, and little is obtained from them by efforts other than their own; while the dull ones are left hopelessly to themselves.

The school, again, which organizes and patronizes its "eleven" at cricket, its "fifteen" at football, and its "eight" on the river, and neglects or does *not* organize the recreation and exercise of the remainder, fails in its duty to the boys even more than if it neglected their school work. For more real education, for good or evil, takes place out of school than during lessons.

Before sending a child from home, parents should, therefore, be very careful in their selection of a suitable school. This question involves many points, which require much consideration: thus, there is not only the *choice of the school* itself, but also the *choice of the head- and house-master*; and even more earnestly demanding serious deliberation is the *sanitary state of the house* in which the boy or girl is to reside for eight months in every year, during seven to ten years, and at the most critical time of life. Yet this last inquiry rarely receives any attention at all from the parent.

To attain the end we have in view—the production of a capable and vigorous race—the conditions must be gathered from the nature of the case, and from experience. The gardener will tell us that no plant will be hardy and reach its normal development which has been checked in growth. "Keep it growing" is his constant lesson: then—and only then—will it fulfil its destiny in Nature. Yet this is precisely the course which is being constantly neglected in dealing with the human plant. Sometimes the human shoot is placed under favourable circumstances; at other times, and more frequently, under conditions the most adverse. And this is done while Nature all the time is admonishing us that she herself effects her main growth and

development in the animal—as in the plant—during the warm period of the year, leaving her charge more or less dormant during the cold and dark season.

In order that the highest physical growth may be attained during school-life, it is necessary that the constitution of every child should receive a careful estimate of its capacity previous to the commencement of this period of life—a period of the first importance, embracing as it does the years of most active growth, from eight to nineteen years of age.

It will be obvious that when I speak of the choice of a school for a child, I assume that the parents are free to select. I am aware that this can only fully apply to those whose circumstances are adequate to enable them to exercise a choice. But even under such circumstances, at present, little thought and trouble are employed. To advise the poor to select an appropriate school for each child would be as wise as to recommend the choice of a particular brand of champagne. The choice of the poor in all the relations of life is too often the inevitable one of Hobson.

It is not within my province to object to this neglect of consideration when the children are the healthy children of a healthy stock. Even the desire to interfere medically under such circumstances would be, to my mind, simply professional officiousness.

But I do protest against this arrangement with all the force of which I am capable, in the case of:—

1. Children who are delicate or sickly.
2. Children who have had an ailment which will recur under unfavourable circumstances.
3. Children who are healthy at the present time, but who are the offspring of parents likely, as they advance in years, to develop ailments or diseases which have an hereditary tendency, and which medical men know are

apt to be transmitted sooner or later to the children ; though we at the same time know that the possibly latent disease might be eradicated, or mitigated, were the child surrounded by favourable conditions during the period of school life.

The reason why parents so rarely consider this important subject is partly the result of ignorance, but, in the main, arises from pure thoughtlessness. The point in which their ignorance is manifested is the hopeful supposition that, as their children are healthy at the school age, they have escaped, in their particular case, the tendency to the development of their own constitutional ailment, although they may be perfectly aware that, in *general*, the malady is one that in all probability will show itself at the appointed time. They will not allow themselves to entertain even a vague presumption that the disease is likely to occur in *their* children ; whereas, if they would only admit that these children are likely to be stamped with their die, and set themselves diligently to discover how the hereditary tendency might be counteracted, the children would often have to bless this wise forethought for a healthy manhood.

It is incumbent on parents to bear in mind what is so well expressed by Dr. John Harley, that "within certain limits the healthy body can accommodate itself with facility to considerable variations in the extreme conditions, and those are the delicate who cannot readily do this, and who, in the transition process, are liable to develop abnormal action, or, in other words, disease." Not to heed such tendencies to disease, now that medical science is sufficiently advanced to lend an effective helping hand, is a parental neglect which may hamper the child throughout life, and occasion untold misery not only to the boy himself, but also to his future wife and children, by entailing his premature death, or, often even

worse, that moroseness of character which ill-health so frequently engenders.

At the present time children are all but totally neglected in this respect. One hears occasionally of a parent who thoughtfully and practically realizes his responsibility; but this duty is more "honoured in the breach than in the observance." If a child develops a constitutional disease, or succumbs to such a disease, at school, the parent usually regards it as a necessary evil, and never dreams that a rational investigation into the circumstances might have prevented the mischief. Yet this is a tangible question in preventive medicine which is now ripe for serious deliberation and advice.

If the physician is to help parents in appropriately placing their children at school, it is necessary that he should be closely cognizant of facts, and ever on the alert to apply his knowledge.

We should never forget that a vigorous manhood is the greatest of all blessings, and that the vestibule to its attainment in the highest state is a healthy childhood. Parental care and forethought at the threshold of life can in many cases secure health for their children, when, without this care, ill-health will probably be the consequence.

Earnestly then do I wish to persuade parents, that the highest and most acceptable endowment that they can bestow upon their children is good health, and, *after* this, a sound education.

I would also strive to persuade them to abandon the present "slipshod" mode of choosing a school, where a child spends, as I have said, ten to twelve years of the most important period of its life, and where every facility should be afforded for his development for subsequent work in the world.

If there be one thing more than another that would

revolutionize the state of some of our schools, it is that parents should, as a class, and not exceptionally, personally investigate the situation, as well as the arrangements, of the school before placing a child there. In this way the misplaced and the inferior schools would be emptied, until they provided, in self-defence, the essentials of the proper education of the young. But while parents persist in taking no thought, and send their children, especially the girls, to inappropriate schools, it is scarcely to be expected that such schools will set their house in order. While a schoolmaster can fill his school at a "*first-class fare*," with "*third-class accommodation*," it is contrary to human nature to expect him to provide "*first-class*" accommodation.

By the forethought and foresight which I hold are due to every child at the time of its education, the remnants of past ill-health may, as I have stated, be removed, and the hereditary tendency to disease may be minimized, or even completely eradicated.

CHOICE OF A SCHOOL.

Many points should enter into the parent's consideration of a question so important; and if I were to lay special stress anywhere, it would be on the choice of the boy's *first* school, for not only his health but his character often depend on this step. Yet the parent frequently deems this school of no importance, and thinks only of the public-school that is to follow. It is an indisputable fact that all things, whether mental, moral, or physical, grow best in the soil most suited to them. But parents and masters must remember that, however suitable—to pursue the analogy—the soil of the school may be for a given boy, weeds will grow there also. And it is the

duty of the master so to be on his guard that these moral weeds—which vary from term to term, and from year to year—may not only be eradicated the moment they *show* themselves *above* the ground, but also that they should be *sought* for *beneath* the soil. Remember that in a school of good soil, the boy whose nature is that of the *oak* may thrive in spite of the weeds; though even such a boy, in a school of bad moral soil, will develop into a pliable *willow*, without any sturdiness of character, and become a mean, cringing creature, depending on others instead of on himself.

Moreover, in the choice of a school for his son, a parent should not deem it a sufficient reason for his selection, that “I was there, and my father before me, and my grandfather,” forgetting that all institutions change as time goes on, and that there are other reasons besides *ancestry* in schools which should determine the choice. A great wrong may be done to a boy, and his whole life blighted, by this initial mistake.

Healthy
Situation
of School.

And first, I think, the boy himself should be considered as regards his *health*—whether the school be rightly situated sanitarily—for often, in consequence of a prejudicial local situation, the boy, instead of developing, through healthy circumstances during the years of active growth, into a vigorous man, may become permanently deteriorated. There may be developed, or fostered, an hereditary weakness in his constitution which, under more favourable conditions, might have been checked, and perhaps even eradicated.

I cannot too strongly insist that a healthy life in this world can only be ensured by attention to health during the years of growth and development. Even with this care it must depend largely upon two conditions—

1. The inherent properties of each individual organism.

2. The environment in which the individual is reared.

And it is only so long as this individual organism is placed in its appropriate surroundings—*i.e.* is grown in its proper soil—that we can expect to produce typical health and strength. Failing these necessary conditions, we can only expect to engender imperfect growth, meagre health, an absence of robustness of character and manliness, the manifestation of early disease, and the absence of vigorous old age.

The quality of the soil on which a school is situated is of paramount importance, especially in relation to the position of the *water-level*. It is well known that water lying stagnant on the surface of land is very inimical to health; but it is not common knowledge that unhealthiness is equally produced where the subsoil is loaded with stagnant water.

Soils may be classified for our present purpose as pervious and impervious, or those which allow water to pass freely through, and those which retain it.

The pervious and fissured soils are gravel, sand, chalk, and rock; while the impervious are represented by the clay soils. The water percolates through the former until arrested by an impervious stratum; its depth varies considerably, and is called the *subsoil water*. Where the soil is impervious the water remains on the surface, and renders it necessarily damp. Efficient surface and subsoil drainage, so as to lower the water-level even a foot or two, will remove consumption and diarrhoea from an entire district, and produce so improved a state of health among the inhabitants that the development of germ life is rendered practically impossible.

In the selection of a school for a *delicate* child it may be taken as an axiom that, other things being equal, the nearer the school to the sea the more equable the climate; the further from the sea the more is the climate one of

extremes. Hence a child who requires a moist, equable climate, with warm winters and warm nights, must be sent to the seaside to school; while those who need a more bracing air must be placed inland. A bare open country is drier and warmer than a well-wooded one; but in the neighbourhood of woods and forests the air is damp during the greater part of the year.

Our object must be, in the case of weak children, and of those who are liable to disease, to endeavour so to arrange their surroundings during school-life, and so to graduate and proportion their work, that their imperfect organs may be less taxed, and be thus enabled, as the constitution improves, to respond more readily and effectively to the demands imposed upon them.

A child is often subject to a more or less *constant catarrh*, or to frequently repeated sore throats. The "colds" seem to arise from some constitutional delicacy, which can be aggravated or removed by locality alone. A damp soil, cold winds, residence in a town, and the absence of sun, appear, as far as one can judge, to be the cause of their frequent recurrence. If these children be removed to a suitable place as to soil, freedom from damp, and from keen winds, if they pass their indoor life in sunny rooms and their outdoor life in open air, the catarrhs cease, or rarely recur, and then only when the child is replaced among unhealthy and unsuitable conditions.

A boy with a *rheumatic* constitution should on no account be sent to a school situated on clay, and surrounded by a humid atmosphere, where perhaps, as I have known, one boy in every thirty suffers from rheumatism during his residence. A boy from a *consumptive* stock should not be placed at a damp, low-lying school, however famous in name and character, and however many ancestors may have honoured it. A boy

with a *feeble circulation*, showing chilblains on hands and feet from the slightest cause, should not be placed at school in a cold, bleak situation during his years of growth; his residence should be high and dry, on gravel, and with a climate as genial as can be found. A boy with a *neuralgic* predisposition should not be sent to a bleak, windy, exposed place for his education, or he will be always suffering from neuralgia in the head, face, or ears. A boy with hereditary predisposition to *kidney disease* might be saved from its development by being educated only in the warmest and driest place, and one least exposed to the cold winds of spring. A boy from India, especially if he have suffered from malaria, requires a dry and warm place of residence during his growing years, and should only enter school at the most favourable time of the year for fine and warm weather.

The *best situation* for a boarding-school is the top of a hill, facing south, and having the soil of gravel, sand, or chalk; and if the school can be so placed that it is protected from the north and east by a shelter of trees, especially pine trees, so much the better as a health resort for all boys during their growing years. Such a situation for a school is of incalculable value to every boy, though chiefly to the delicate ones.

The *worst situations* for schools are those in close proximity to the bed of a river; those on a low-lying clay soil; and those which, although high and apparently dry, and having a good soil, such as sand, yet stand upon a subsoil of clay. The soil of all such situations requires thorough superficial and deep draining if any degree whatever of health is to be secured; but it is most unsuitable for the residence of the young during their growing years. It is right, however, to add, that proper drainage of such soils has diminished the death-rate of wasting disease of the lungs alone by about 50 per cent.

Stagnant air and stagnant water are both poisonous to human beings. I need scarcely add that a *town*, or *city*, is not a suitable situation for a boarding-school. For a *day-school* a town or city may be, and often is, the most desirable site—and probably the only one feasible.

It is hardly possible to insist too much upon the healthy rearing of children, especially of those who are tainted with *some* hereditary defect in health; for on this parental care and forethought, even in small matters, the health and happiness of us all largely depend. If a child from a *consumptive* stock, for instance, be placed during his years of growth and education in a good dry country air, away from the smoke of a town, and at a distance from the bed of a river, living in a sunny aspect, with sufficient cubic space indoors, and be provided with proper clothing, and plain food with plenty of fat, in all probability he will develop a sound constitution instead of a faulty one.

A child who has *gouty* parents needs not only a dry atmosphere and sunlight, but regular exercise, and the studious avoidance of all kinds of alcohol, and of pastry-cooks' delicacies, so that his digestive organs may be in the highest state of efficiency to digest plain wholesome food. He should also be specially encouraged to eat slowly and masticate effectually.

Further, where *insanity*, or even an excitable nervous system, which is often exemplified in hysteria only, is known to have occurred in members of the family, the child should be educated where he can be out-of-doors most of his time on fine days, so that the highest state of health and vigour of constitution may be produced; for in this health and vigour the brain itself largely participates. Such a child should not be allowed to work at night, nor for any examination until his brain is mature in its growth. Above all, such a boy should be

taught that immorality in any form is especially detrimental to the stability of his brain.

It is also imperative that a child born with this hereditary predisposition should be educated, from his earliest years to manhood, away from home, and apart from his parents or friends who are tainted with the nervous constitution; in a place where a regular life will be maintained under the strictest discipline; where all waywardness will be dealt with by a firm but kind hand, and where he will work and play with those of his own age, who are more robust in health and in character. By such means the nervous tendency, whatever form it may have been about to assume, will be eradicated. At the present time, these children are unfortunately retained at home, where they are petted and pampered; never thwarted nor corrected, lest the nervous condition should be induced, and where their peevishness, ill-temper, and petty tyranny are allowed full sway. Such surroundings simply constitute a congenial hot-bed for the development of the tendencies which it is essential to check. In the case of girls who are predisposed to a nervous constitution, it is still more imperative that their education should be absolutely freed from the influence of the surroundings I have described.

It is, however, unfortunately still the custom to regard children who inherit some special delicacy of constitution as feeble or unhealthy, and, if they do not thrive well, to speak of their hereditary constitution as an irremovable cause. Whereas, every effort should be made on behalf of these imperfect constitutions to combat these latent tendencies, and endeavour, in spite of them, by a healthy situation, appropriate feeding, regular exercise, and carefully regulated work, to produce sound health and vigour during the only years when these advantages can be obtained—those of growth and development. Yet, at present, this

is scarcely recognized ; and little care is taken by parents to select the most suitable school, to the permanent detriment of the children.

It is a well-known fact that the varieties of trees and shrubs will only thrive luxuriantly in certain localities suited to their growth, and that, if they are attempted to be reared in an unsuitable climate or soil, they either dwindle or die. The analogy holds precisely with human beings, especially in their early stages.

Capability
of Scholar.

The next question to consider is the *capability* of the pupil, so that he may be educated most thoroughly. Parents and teachers should bear in mind that children have not all the same capacity for work of any kind, and that too much must not be looked for from them. They might equally well expect a naturally short boy to become tall, as a boy who has poor ability to develop into a genius. They should be satisfied if their sons and pupils employ what brains they have to the best of their ability. Neither mentally nor physically are all children cast in the same mould. In the same form at school, children of the same age differ in their powers. One boy may be head and shoulders mentally and physically above his next school-fellow ; or he may be mentally big and physically small ; while his neighbour may be exactly the reverse. Yet parents and teachers toss these varying specimens into the same mill, and expect them to turn out equally well. It is, therefore, imperative to bear in mind, if every child at school is to receive his due, that in the same form, or class, there is an infinite variety in the capacity of the children. Hence it is folly to act on the assumption—and to inflict punishments accordingly—that because the same teaching is applied to the whole form the same results should be obtained. The difficulties in teaching, thus indicated,

suggest much care and thought on the part of the teacher, so that he may encourage the dull and slow boy who happily rarely fails to respond to such consideration.

It is unwise to send a boy who has no taste for, and consequently cannot master, classics to a purely classical school. Such a position frets a boy, and may make him miserable and ill, as he finds that he is losing caste at school; and this result will be aggravated by the consciousness that he has ability which, in other subjects—mathematics or science—would secure him distinction. This injudicious action, too, is bad from a national point of view, as it devotes capacities to purposes which they are not fitted to subserve. I do not wish to imply that a pupil who has no taste for languages should on that account be exempt from the trouble of learning them. Far from it. I would have every boy educated thoroughly all round, but I would try to encourage a taste and liking where none, often simply through long latency, appear to exist. What I mean is this: in a classical school, a boy who is a good classic is supreme; while a boy who is not a classic—and whom no forcing can convert into one—although he may be a genius in science and mathematics, is “no where”—a cipher. Were such a boy placed in a suitable school, he would become one of the leaders, and his pride and pleasure would maintain him in that stimulating position. Yet, being forced into an unfit place, he becomes unhinged, and feels cowed by reason of his inability to compete successfully with his school-fellows, in spite of his talents in other directions.

It seems to me that schools too little consider the *real* education of the individual boy, forgetting that he is sent to school to prepare himself for his contact with the world as a reasonable being, and not simply as a skilled

The Nature
of the
Education.

classical scholar, and it may be nothing more. In one boy classics may be the best mental training, and may—as is supposed—give him a finer intellectual polish; but for another boy, who with every effort cannot master them, the whole school-life is wasted in the fruitless attempt: he learns nothing, and, being disheartened, his health suffers, and, through the depressing influence on the *body* of a hopeless state of *mind*, he physically fails to develop.

It was well said by Lord Armstrong that “a man’s success in life depends incomparably more upon his capacity for useful action than upon his acquirements in knowledge; and the education of the young should, therefore, be directed to the development of faculties and valuable qualities rather than to the mere acquisition of knowledge. The teacher who looks upon learning and repeating lessons as the aim of education is not an educator at all, for education means the *educing* of faculty as a training for life.”

It has become proverbial, and is nearly true in science and art, as it is in commercial and national life, that, whatever be the work to be done, men will be found, or soon produced, who are exactly fitted to perform it. It is, therefore, incumbent on our schools to see that their pupils receive a high and appropriate education which adapts men for all the affairs of life.

When the subject is thought out candidly and clearly, every one must admit that the object of education is practical equipment for life; and concurrently with this conclusion would be the abolition of all antique and arbitrary methods. A realization of the true *Idea* of education necessarily involves a rectification and adjustment of educational Methods.

The plans too frequently pursued, at present, are on a par with the teaching of shooting with the old match-

lock gun, and expecting that this course will develop naturally into the precise use of a Martini-Henry rifle.

I am quite unable to understand the persistent pleading for the virtues of a classical education as the best training for the youth, generally, of this country. If teachers would use the word *languages* in place of the word *classics*, I could concur with their views; but to contend that classics bear the palm exclusively is untenable.*

That *languages* may furnish the best discipline for some minds I freely admit, and to abolish it for these learners would be simply disastrous. But I contend that a scientific education is just as suitable for other minds, and to debar *them* from this discipline is, to my mind,

* It is contended by many teachers that Latin, for instance, is of infinite assistance to the student in the acquisition of other languages. But Dr. Neil, of Oxford, aptly remarks that as a nation we have a vast and ever-increasing Oriental connection; and that multitudes of our countrymen spend their entire working lives in the East, where a practical acquaintance with the languages of Eastern peoples is imperative. He asks: "Does Latin afford the slightest help in learning the languages of India, Burmah, China, or of any Eastern country whatever? In acquiring the languages of Russia and Germany, is the Latin learned at school of any service?" He adds that there is only one group of tongues—the Romance—in which assistance is derived from Latin, and of this group French is the only one that we generally ever think of learning. And the chief difficulty of French is the pronunciation, and Latin does not afford the slightest aid in this direction. In grammatical structure Latin is no practical key to French, since the changes which Latin has undergone in passing into French have been so radical. In respect of derivation, Latin is of small service on account of French being the descendant, not of classical or literary Latin, over the acquisition of which so much time, labour, and money are spent, but of popular Latin, the speech of the Roman rank and file—a speech probably as different from the Latin of Cicero as the dialect of a Somersetshire peasant is remote from the English of Ruskin.

equally disastrous. Mr. Hime * has truly said: "Nearly every boy is clever at something or another; and if this or that boy be not clever at anything just now, this may arise from the slow growth of his intellect; not from the fact that he is really a stupid boy. It is the schoolmaster's business to find out for what subjects he has most capacity, and to what his non-proficiency is especially due. But he certainly ought not to regard him as stupid simply because he is slow in learning Greek, Latin, Euclid, etc. But a master's duty is to educate; that is, to develop a boy's best faculties of every kind—his religious and moral, his intellectual and æsthetic, and his physical faculties—his manners being closely attended to all the while. This is a master's duty: a duty which he cannot possibly perform honestly, unless he attend to everything—everything I say emphatically—connected with the proper up-bringing of the young with whom he is daily brought into contact."

It is contended further that classics develop more polished gentlemen. Now, I number amongst my friends some of the best classics—even Senior Classics—and some of the best mathematicians and scientists—even Senior Wranglers—this country can show. I do not find that the classics, as compared with the mathematicians, think better, speak better, or write better; nor do I discern in them a larger culture or taste; I do not find that they are shrewder, more truthful, and more upright; nor that they make better fathers, better citizens, and better Christians; and certainly I do not discover that they are the most business-like men in their own or in other persons' affairs. In what, then, does the virtue of this fascinating classical education consist? It has been said that the object of education is not really to learn, but "*to learn how to learn*:" that education is not the

* "A Schoolmaster's Retrospect." M. C. Hime. 1885.

acquisition of knowledge simply, but the process of training the mind to be capable of acquiring it. It is difficult to see that classics are better adapted than mathematics and science for this purpose. Does it count for nothing that Trollope, an old public school-boy, should say of his teachers in after years—"I have met them all three since my school days, and found them shallow and ignorant, no doubt with plenty of Greek and Latin in their heads, but without knowledge of human nature, or power of appreciating the different dispositions of their pupils"?

Dr. E. A. Abbott, "a born teacher of the first rank," said, in 1883, with reference to the teaching of Latin verse composition, "As at present taught, it is one of the most tedious, mechanical, and profitless of our school studies; and a teacher's attention may well be drawn to the best means of diminishing the evils and increasing the benefits that may result from it."

Sydney Smith informed us in 1809 "that there are few boys who remain to the age of eighteen or nineteen at a public school without making about 10,000 Latin verses. The prodigious honour in which Latin verses are held at public schools is surely the most absurd of all absurd distinctions. You rest all reputation upon doing that which is a natural gift, and which no labour can attain. If a lad won't learn the words of a language, his degradation in the school is a very natural punishment for his disobedience or his indolence; but it would be as reasonable to expect that all boys should be witty or beautiful as that they should be poets. In either case it would be to make an accidental, unattainable, and not a very important gift of nature, the only, or the principal, test of merit. This is the reason why boys, who make a considerable figure at school, so very often make no figure in the world; and why other lads, who are passed over

without notice, turn out to be valuable, important men. The test established in the world is widely different from that established in a place which is presumed to be a preparation for the world."

And is this not true still? No argument is necessary: a statement of fact suffices. What becomes of a large proportion of the *heads* of our great public schools? They are selected on leaving the University, as masters to the schools where they were educated, or to other schools, showing conclusively that the tendency of the education given in our public schools is chiefly to produce public-school masters instead of able men of the world. For the boys who are *ablest* at school tend to be fit only for public-school teachers in years to come, while their inferiors in knowledge at school tend to become the able and ruling men.

I would, further, maintain, that men who are so competent to learn are often totally incompetent to teach; for they have learnt so easily themselves, that they have never felt, and consequently do not understand, the difficulties which attend the efforts of the average, or dull, boy. An intellectual sponge, competent to absorb knowledge readily into itself, is very different from an intellectual instrument capable of producing external effects.

Again, in 1826, Sydney Smith said: "If there be anything which fills reflecting men with melancholy and regret, it is the waste of mortal time, parental money, and puerile happiness, in the present method of pursuing Latin and Greek." And this waste, in the main, continues still, though with some bright exceptions.

At the meeting of the British Association, held in Montreal in 1884, Lord Rayleigh, the President, remarked:—"From the general spread of a more scientific education we are warranted in expecting important

results. Just as there are some brilliant literary men with an inability, or at least a distaste practically amounting to inability, for scientific ideas, so there are a few with scientific tastes whose imaginations are never touched by merely literary studies. To save these from intellectual stagnation during several important years of their lives is something gained; but the thoroughgoing advocates of scientific education aim at much more. To them it appears strange, and almost monstrous, that the dead languages should hold the place they do in general education: and it can hardly be denied that their supremacy is the result of routine rather than of argument. I do not myself take up the extreme position. I doubt whether an exclusively scientific training would be satisfactory; and where there is plenty of time and a literary aptitude I can believe that Latin and Greek may make a good foundation. But it is useless to discuss the question upon the supposition that the majority of boys attain either to a knowledge of the languages or to an appreciation of the writings of the ancient authors. The contrary is notoriously the truth; and the defenders of the existing system usually take their stand upon the excellence of its discipline. From this point of view there is something to be said. The laziest boy must exert himself a little in puzzling out a sentence with grammar and dictionary, while instruction and supervision are easy to organize, and not too costly. But when the case is stated plainly, few will agree that we can afford so entirely to disregard results. In after-life the intellectual energies are usually engrossed with business, and no further opportunity is found for attacking the difficulties which block the gateways of knowledge. Mathematics, especially, if not learned young, are likely to remain unlearned. I will not further insist upon the educational importance of mathematics and science, because with

respect to them I shall probably be supposed to be prejudiced. But of modern languages I am ignorant enough to give value to my advocacy. I believe that French and German, if properly taught, which I admit they rarely are at present, would go far to replace Latin and Greek from a disciplinary point of view, while the actual value of the acquisition would, in the majority of cases, be incomparably greater. In half the time usually devoted without success to the classical languages most boys could acquire a really serviceable knowledge of French and German. History, and a serious study of English literature, now shamefully neglected, would also find a place in such a scheme." *

It may be an essential part of a boy's school training to be taught to master thoroughly something difficult, necessitating great labour to attain it; but this training may surely be found in science as well as in classics. I think the importance of learning the dead languages, as a training for young minds, is very much exaggerated,

* At the meeting of the British Association at Manchester in 1887, the President, Sir Henry Roscoe, M.P., reiterated the same doctrine. He said, "It is true that the English people do not possess, as yet, that appreciation of the value of science so characteristic of some other nations. Up to very recent years our educational system, handed down to us from the Middle Ages, has systematically ignored science, and we are only just beginning, thanks in a great degree to the prevision of the late Prince Consort, to give it a place, and that but an unimportant one, in our primary and secondary schools or in our universities. The country is, however, now awakening to the necessity of placing its house in order in this respect, and is beginning to see that if she is to maintain her commercial and industrial supremacy the education of her people from top to bottom must be carried out on new lines. The question as to how this can be most safely and surely accomplished is one of transcendent national importance, and the statesman who solves this educational problem will earn the gratitude of generations yet to come."

and I fail to see their superiority to mathematics, science, and the modern languages, while the latter are far more useful to the average boy on entering the world. Moreover, were these latter subjects more commonly taught, and were the classical languages less the fashion, there would not be so much scope for the use of "cribs."

In his excellent little work on the "Choice of Books," Frederic Harrison states, "that man's business here is to know for the sake of living, not to live for the sake of knowing."

He also adds that "the first canon of a sound education is to make it the instrument to perfect the whole nature and character."

The fact cannot be denied that our present system of education prepares boys, in the main, for two purposes—to become schoolmasters, or to be men of leisure.

As evidence of the inappropriateness of our public-school education for contact with the world, I would ask, How many of our first-grade schools are capable of passing boys into Woolwich, Sandhurst, Cooper's Hill, or the English and Indian Civil Services, without their intermediate passage through the hands of a "crammer"? Some there are, I know, all honour to them! It will be said that my complaint is too late, as many of these schools are rousing themselves to the exigencies of the occasion by the formation of a "modern side." But these changes are totally inadequate for the purpose, and are literally ludicrous when minutely examined. For instance, look at the teaching of science! Sir John Lubbock obtained a Parliamentary return, with the following result:—

TABLE SHOWING SOME OF THE RETURNS FROM 240 SCHOOLS, IN 1886,
WITH REFERENCE TO THE TEACHING OF SCIENCE IN OUR SCHOOLS.

Number of schools.	Per cent.	Hours per week in which science is taught.
54	22.5	0.00
50	20.83	1.00
76	31.66	2 or less than 3 hrs.
6	2.5	6.00

This century owes its distinguished position to the continuous and increasing progress of science, or organized knowledge; and if we as a nation are to advance with the times, and keep abreast with other nations, our schools must reconsider their functions with earnestness, and educate the young practically for their posts in life, instead of compelling them to become deadened over the idioms of defunct languages.

Where a boy has a special taste, let it be encouraged by every legitimate means, without making him one-sided; let him be sent to a school where, having regard to his nature and aptitudes, he can most perfectly develop, mentally as well as physically. Let his *mental* bread and meat be adapted to his natural faculties, and he will, of his own will and delight, eat plenty. It must be borne in mind in teaching that the organ to be trained and exercised is a very sensitive one; that the mind and intellect, from our present point of view, are simply brain function; that improper teaching, and excessive teaching, act prejudicially upon the brain tissue, and cause disordered mind, very much in the same way as improper food, or an excess, produces a disordered stomach.

If we have a choice rose-tree, and wish to see its "bright consummate" flower, we do not plant it in a gravelly, and therefore uncongenial, soil; if we do, we

shall not only be disappointed in our desire to see a perfect flower, but the tree itself will gradually dwindle away. If we plant it in its appropriate stiff clayey soil, it will thrive and blossom as our reward. Boys should be treated in the same fashion, and they will prosper. They must be instructed appropriately to their most natural aptitude and ability, rather than ground in a common mill to satisfy their teachers, or the ambition of their friends. Individual bent and capacity must guide the studies, and not external will. They will then become resolute workers, because they like their work; self-reliant, because they can master it; good and honest, because they are employed at congenial labour, with no spare time for thinking of evil. Give them uncongenial work, and they will mope and languish; dissatisfied with themselves, their masters, and their school; no credit to themselves or their parents; idlers, with the terrible consequences of idleness.

One word seems to be necessary here, for education is becoming more and more a question of *quantity* of subjects versus *quality* of knowledge, to the serious detriment of brain development and subsequent brain power. Boys—and, I am sorry to say, girls too—are being educated as encyclopædias, instead of being taught, as the essential of school training, to master one or two subjects thoroughly. In fact, they are taught the rudiments of everything, the approximate mastery of nothing—except about five per cent. who are pushed on for exhibitions and scholarships.

It is folly to uphold this system as the most likely to develop healthy, active brain power in the average boy. I look upon it as mentally injurious to press the teaching of many subjects at the same time; not that we want work to be monotonous, for variety of work is as requisite for the brain as variety of food is essential for the

stomach. But at the present time, owing to the multiplicity of subjects, there is a want of *thoroughness* in all work, except in the highest forms, in our schools.

John Howard declared in later life, "with more indignation than he commonly expressed, how, after a continuance of seven years at his school, he left it, not fairly taught one thing;" and this state of things continues still, largely owing to our examining institutions demanding quantity of subjects rather than quality of knowledge.

Were I asked to name a quality in which all schools are most deficient, I should without hesitation answer, "*Thoroughness*." Pupils are set lessons to learn which they do not master; they are given "lines" to write which are not examined. They thus become careless in work, and this defect is apt with increasing force to affect them throughout life.

There is the same absence of thoroughness in the education of the young even in our first-grade schools. Numberless instances might be adduced. A boy, for example, has failed to learn his lesson by the appointed time. The natural conclusion would be, that he would be compelled to learn and repeat it. But what is the fact? The teacher, as a rule, is too hard worked to see this rational course pursued. The boy accordingly either writes out the lesson, or writes a number of "lines," and thus escapes learning the task altogether. How is a pupil to grasp a subject when successive steps have been thus omitted? A boy, to take another actual case, disliked, or could not master, a certain lesson which he had occasionally to repeat before breakfast. Whenever the lesson became due, the boy remained in bed, and escaped on every occasion. He was punished for this misdemeanour by birching; but it never occurred to the master to insist on the lesson being afterwards learnt.

Had the master taken the trouble to investigate the cause of the boy's acts, and then insisted upon the lesson being subsequently learnt, a second attempt would not have been made, and instead of a foolish application of the birch, the boy would in all probability, and under sympathetic stimulus, have mastered the subject, and at the same time have gained a valuable moral discipline.

This want of thoroughness is also the main reason why in trades, and professions, there is always a crowd at the bottom of the ladder, while only a few reach the top. Room exists in every occupation for those who have been taught to work with thoroughness.*

* The American minister, Mr. Phelps, when speaking in this country on the subject of education, said: It was the fashion not so very long ago to regard education as a sort of procrustean bed on which every one must be stretched out. Education, in short, meant instruction in a certain time-honoured course of classics and mathematics and philosophy. All this was excellent, of course, and not to be disparaged; it was the highest form of learning, but it stopped there. The demands of the present time were far greater than the demands of former times; all subjects had extended, a great many industries and callings had sprung up, and there were many more walks in life than there used to be. Now it seemed to him that education had its necessities and its luxuries, and it was no disparagement of the luxuries to say that the necessities came first. They did not disparage the value and the brilliancy of the diamond by saying that a man needed to have a coat on his back, nor did they disparage choice wine by saying that bread was a prior necessity. And so in this matter of education, he was sure he should not be misunderstood by such an audience as disparaging the highest and the finest forms of human learning and literature, when he said that there was something which the great body of mankind at this day needed as a general rule a great deal more than they needed those. The old system brought out brilliant scholars and great men in literature, science, public life, and the learned professions, and it also brought out some most helpless individuals who knew a little of everything but what would be of use to them, who knew about a great many things they could not do,

The
Character
of the
School.

I would also advise parents to avoid placing a child at a school that is one-sided *in character*, in any sense of the word. Special schools, for special occupations in after life, do not exert a salutary influence on the young. All classes of boys should be educated together. It is not good for a boy to be placed at a school where the majority are a clique, be that clique clerical, legal, medical, military, naval, political, or masonic; it stamps him with a die, and parents should see to the development of *catholic* and generous sympathies in their children.

If it be desired that a boy should leave school educated with a wide intelligence, and with a strong self-reliant character, able to act with judgment for himself, these cliques should be avoided, for they partake of the nature of serfdom: they have a savour of "trades unionism," which is most undesirable in the education of the young.

Strength of character, like strength of muscles, is produced only by individual activity and responsibility. Individuality is wanted in schools, and it will show itself whenever scope is provided; but "sets" lead to intolerance, and individuality vanishes into dependence on

and would have liked to do a great many things they did not know anything at all about. The life of such men was naturally a failure. It could not be otherwise. Now it had come to be seen that education meant a great deal more than it used to do. It meant, in his judgment, that course of instruction which fitted its subjects to do their duty in that state of life in which it had pleased, or should please, God to call them—to enable men and women to do something for themselves and others; to give them that most valuable of all gifts on the earth, that he knew anything at all about—personal independence—the capacity to stand on their own feet and look the world in the face, to take care of themselves and those who belonged to them, and to have an honest, upright, honourable, and prosperous career of their own. Now, to the great mass of them who had their own way to make in the world, that, it seemed to him, was the great object of education.

others. Who is not acquainted with boys and men who on certain sides of their nature have never developed, who have no fellow-feeling for the *poor*, no sympathy with the *suffering*, no pleasure in *high principle*, no pain at *mean-spirited* conduct? Yet such characters are, roughly speaking, simply the result of faulty education. They may have received the highest mental education, while the moral education has been wholly or partially neglected—mainly the fault of the parents or teachers.

It is also true, beyond dispute, that strength of character and high-principle, as well as vice and low-spirited conduct, are as contagious as measles.

Some schools *have* noble and venerable traditions; others, more modern, *will possess* splendid traditions, in time; but a parent should seek a school where the traditions—however noble, venerable, or splendid—are subservient to the public-school system, which is older, broader, and more liberal than mere traditions; and masters should so strive to educate boys, that, when they leave school, they are not Eton, Harrow, or Rugby boys, but simply public-school boys. A parent or master will then have fulfilled his duty to the boy. Then, and then only, will he emerge from school an open-hearted, fearless, ingenuous boy; instead of a weak, cringing, dependent sectarian, or member of a clique, incapable of thinking or acting for himself.

Traditions, when not supported by continued nobility of purpose, lapse into unimpressive and soulless routine. Yet to a large proportion of people a thing seems in especial favour according to its age, irrespective of its worthlessness and unsuitableness: it is forgotten that bad things are none the better for being old.

In the *Edinburgh Review* of 1825, Sydney Smith, in

School
Traditions.

speaking of the wisdom of our ancestors, which is very often on a level with the folly of our infants, remarks:—"This mischievous and absurd fallacy springs from the grossest perversion of the meaning of words. Experience is certainly the mother of wisdom, and the old have, of course, a greater experience than the young; but the question is, who are the old, and who are the young? Of *individuals* living at the same period, the oldest has, of course, the greatest experience; but among *generations* of men the reverse of this is true. Those who come first (our ancestors) are the young people, and have the least experience. We have added to their experience the experience of many centuries, and, therefore, as far as experience goes, are wiser, and more capable of forming an opinion than they were. The real feeling should be, *not*, Can we be so presumptuous as to put our opinions in opposition to those of our ancestors? but, Can such young, ignorant, and inexperienced persons, as our ancestors necessarily were, be expected to have understood a subject as well as those who have seen so much more, lived so much longer, and enjoyed the experience of so many centuries?"

I yield to no one in the importance I attach to school traditions: a school possessing them wields a power of incalculable value in stimulating boys to imitate noble examples, whether they be recorded of individuals or enshrined in customs. But there is a limit to the value of these traditions, for often, under the spell of "ancient use," the most ridiculous mistakes are continued, the greatest faults are perpetuated, and the grossest cruelty is enacted.

If there be one class of institutions which should prepare for the future, and refrain from dwelling upon the past, it is our schools, where the young of a nation are prepared to take their part in the world.

They should compete with the world in the noble ambition of being counted among the learned and the good who strive to make the future ampler and happier than the past.

CHOICE OF MASTER.

Under whose care and supervision a boy is to be placed at school is a matter of no small importance, for there are masters and masters; and while all may be equally able as scholars, and all equally high in character, they are not equally efficient as teachers, or wise in the management of boys. Above all, avoid a master who is lax in discipline.

In a "private school" the master who conducts is supreme in control. He himself is the sole governing body: he appoints his own assistants, teaches what he pleases, and manages the whole of the establishment alone. Excellent schools many of these are, some even leaving nothing to be desired either in their arrangements or tuition. Whereas of others little good can be asserted in any respect, so greatly do they vary.

Our great "public schools"—great in every sense of the term—of which we are justly proud, are among the most splendid institutions of our country. Established five centuries ago, these institutions have never flagged in their success, but enjoy at the present day a nobler position, and wield a greater power in the country, than at any previous period of their history. Like all other institutions, however, they are not perfect, and I shall have to speak of their defective elements as well as their good—the latter, however, greatly preponderating.

The "Public Schools Act" of 1868 appointed a Head-master.

"Governing Body" for each of our great public schools, in place of the former "Trustees." It was then recognized that these schools belong to the nation, and should be managed for the benefit of the nation, so that the youth of the country may reap the advantages of the higher education.

The "Governing Body" appoints its own *head-master*, and the conduct of the school, in every respect, is left virtually in his hands. I think it would be no exaggeration to say, that there is no individual in this country who occupies so autocratic a position. In such a sphere this absolute power may be, and often is, of inestimable value, not only to the individual himself, but also to the institution which he serves; while in weak or incompetent hands no more serious misfortune can befall a school.

It has been truly said, "that a monarchy, when there is security that the monarch himself is a wise man, is the best of all forms of government."

It will, therefore, be seen that we need for head-masters "something more than competent scholars with agreeable manners."

"It is a work good and prudent to be able to guide one man; of larger extended virtue to order well one house; but to govern a nation piously and justly, which only is to say happily, is for a spirit of the greatest size and divinest mettle."* So wrote one of the greatest of Englishmen. And the statement is equally applicable to our great schools, since it is on their basis that the nation is ultimately formed.

But our great public schools can never become what they should be until some alteration is introduced in the selection of *head-masters*. It may be said that a system which has elected head-masters like Arnold, Temple,

* Milton, "Areopagitica."

Butler, Bradley, and Percival, cannot be far wrong. But I would urge that such men are found in spite of the bad system, and I would further add that many more of similar character and power might be obtained were the system of election rightly enlarged.

It is an indisputable fact that a head-master is not required as a *teacher* any more than a *general* is needed to fight in the ranks. His essential qualifications are those of a wise organizer, a judicious manager of men and boys, an experienced judge of character, and a man well versed in matters necessary for health, or possessing a sympathetic appreciation of such subjects; for the duty should attach to his position, and he should be partly chosen for his fitness and convinced readiness to perform it, of seeing not only that boys receive proper food, with ample *time in which to eat it*, but sufficient fresh air also in and out of doors, together with appropriate daily exercise.

Rowland Hill and his brother, the greatest school organizers of their day, observed: "The head-master, too, ought to be relieved from all necessity of taking any department of teaching himself, in order that he may be at liberty to attend to the regulation of the whole; to watch for opportunities of improving every part; and, by engaging his pupils in conversation, to seize the proper moments for exciting them to inquiry and reflection."

Yet, a rule exists—unwritten, perhaps, but in force with most of the governing bodies—that a head-master must be not only a *teacher*, but a "*Clerk in Holy Orders*." Few have realized what this restriction involves.

In some schools there is a further rule, that the head-master must be an M.A. of one of the older universities. But why an M.A.? Why not a B.A.? For the difference between an M.A. and a B.A. at Oxford and Cambridge (not so at the London University) is pecuniary, and does not necessitate increased knowledge.

In past years a large proportion, if not most, of the masters in our great public schools were "in orders." There was, therefore, little difficulty in the selection of a suitable head-master for a school; but times have changed.

When the previous edition of this book was published in 1887 the proportion of masters who were *not* "in orders" was about 73 per cent., so that the choice of head-master was limited to 27 per cent. of masters holding appointments in the chief public schools.

At the present moment, after a lapse of only seven years, of all masters appointed to our chief public schools, about 80 per cent. are *not* in "holy orders;" so that the area of selection of head-masters is practically confined to 20 per cent. of all public-school masters, while 80 per cent. are almost wholly excluded. (See Tables A. and B.) It is obviously to the disadvantage of the schools themselves, that in the choice of head-master four-fifths of the masters are excluded, and that the selection is restricted to one-fifth only of the candidates who are otherwise qualified. It is unreasonable to suppose that the masters in this "one-fifth" section are really more suitable than some of those amongst the four-fifths. In fact, it is *primâ facie* fair to assume that the proportion of qualified men for head-masters is greater—as 4 : 1—among the excluded four-fifths. If the same rate of falling off continue during the next twenty, as has occurred during the last seven, years, *i.e.* one per cent. per annum, there will be no clerical masters remaining from which to choose, in which case it will right itself.

The arrangement is unjust also to the masters themselves; for each suitable man, whether lay or clerical, should feel that he has an equal chance for the highest and most coveted post in his profession.

Are the lay-masters in our public schools such incompetent men that they are unfit to be appointed as head-masters? On the contrary, in a large proportion of cases it is precisely the reverse, and the very ablest men are simply passed over in the selection of head-masters,

A.—TABLE SHOWING THE PROPORTION OF CLERICAL AND LAY MASTERS IN OUR CHIEF PUBLIC SCHOOLS IN ENGLAND.

Name of school.	Total number of masters.	' Clerical masters.	Lay masters.
Eton'	57	10	47
Harrow	38	6	32
Rugby... ..	30	6	24
Winchester	25	7	18
Westminster	16	4	12
St. Paul's	32	4	28
Merchant Taylors'	24	9	15
Charterhouse	33	9	24
Marlborough	36	7	29
Shrewsbury	22	5	17
Wellington	30	9	21
Repton	20	6	14
Haileybury	27	8	19
Uppingham	32	9	23
Clifton	42	7	35
Cheltenham	41	6	35
Sherborne	14	5	9
Christ's Hospital	29	9	20
City of London School	39	4	35
University College School	32	2	30
King's College School	22	2	20
Dulwich College School	40	5	35
	681	139	542

because in early life they have not taken "orders." This is indicated in the appointment of head-masters to the great public schools for day-scholars. For here, in most cases, where the selection of a head-master "in orders" was not deemed a necessity as in boarding-schools—an assumed necessity which, as I shall show, is untenable—

but where the choice was made from both lay and clerical masters, a lay-master was appointed in preference, on account of his superior fitness for the post. Such evidence, obtained from the action of the governing bodies themselves, is of the most weighty character.

B.—TABLE SHOWING THE PROPORTION OF CLERICAL AND LAY HEAD-MASTERS OF OUR CHIEF PUBLIC SCHOOLS IN ENGLAND.

Name of school.	Head-masters.	
	Clerical.	Lay.
Eton	1	—
Harrow	1	—
Rugby	1	—
Winchester	1	—
Westminster... ..	1	—
St. Paul's	—	1
Merchant Taylors'	1	—
Charterhouse	1	—
Marlborough	1	—
Shrewsbury	1	—
Wellington	1	—
Repton	1	—
Haileybury	1	—
Uppingham	1	—
Clifton	1	—
Cheltenham	1	—
Sherborne	1	—
Christ's Hospital	1	—
City of London School	—	1
University College School	—	1
King's College School	—	1
Dulwich College School	—	1
	17	5

Our great schools consequently do not progress in the ratio they should, by reason of being fettered by this relic of bygone times. Instead of taking the lead in the advancement of education, they dwell in the past, cling

to methods which are fossilized, and hand over to the "crammer" any hard technical work which is demanded.*

The governing body of a boarding-school that will break through this unreasonable rule, and appoint the very best man to be found, be he lay or clerical, will serve their school well and their country better.

The practice is unsatisfactory also in another way, for the restriction holds out a premium to masters to take "orders." Masters are tempted to this course with the view solely to qualify as head-masters—a result sedulously to be shunned in the interests of our schools, no less than in those of morality and religion.

This question, therefore, is urgently one for serious consideration in the welfare of our public schools. It is difficult to overcome the inertia of custom, and the ties of interest, but the welfare of our schools imperatively demands the change.

Our great schools need head-masters such as Mr. Sidgwick† speaks of:—"What it was, to come for months or years, into daily contact, at the most impressionable time of life, with a man whose every look and tone and word spoke to us of high aims and resolute endeavour, whose life in the sight of the dullest and

* In connection with this subject it should be remembered that the whole of the moral and religious teaching of our schools, with the solitary exception of the sermon of fifteen minutes on Sundays, is as much in the hands of the lay, as the clerical, masters, even to the preparation of candidates for confirmation! At the Church Congress held in Birmingham in 1893, during a discussion on the Religious Education in Public Schools, the head-master of Rugby truly said, "A good deal of the very best religious instruction, in the highest sense, in their schools was given by laymen." Moreover, the permanent influence generally upon the fortunes of a school and upon the life of the scholars depends mainly upon the personal character of the head-master, and not upon his capacity for preaching, or upon his orthodox views.

† "The Practice of Education," 1883.

weakest of us was plainly based on duty and self-devotion, whom all could absolutely trust, to whom the most timid would naturally turn in trouble or perplexity, whom all could love and venerate without reserve,—such an experience it is not likely that one who had ever known it could forget or ignore.” Such was the influence exercised by Frederick Temple at Rugby.

I admit that a *scholar* as head-master will ensure the intellectual respect of boys by reason of his scholarly repute and knowledge. Such a one was Thomas Arnold of Rugby, of whom Mr. Sidgwick says:—“When he was composing sermons, histories, notes on Thucydides, and teaching Rugby better than any school was ever taught before, he was writing letters, as his life shows, on every mortal subject of interest—the Newmanites, Niebuhr, Rome, the Jews, the Chartists, London University, the French Revolution. This width of interest took hold of the boys, as it always does and must. And he himself knew it and felt it. ‘The more active my own mind is,’ he said, ‘the more it works upon great moral and political points, the better for the school.’” But how rare are such men!

I also admit that the beneficial power which a head-master “*in orders*” possesses, by the influence he can exert from the pulpit over the school, is priceless; and, in testimony, the power of Arnold, Farrar, Temple, Butler, Bradley, and many others may be cited. But then it is an essential quality that he should be able to preach suitably to boys, and to get at their hearts. Those who have listened to preaching of this stamp can testify to the benign influence exercised Sunday after Sunday in touching the hearts of a whole school, and helping each individual to strive after higher and more unselfish lives.

How many, however, are able thus to preach; and further, is this their only faculty? The capacity of

preaching appropriately to boys must generally be innate, and is, therefore, proportionately rare. The fact, moreover, that in some of our oldest public schools, fees are paid to the head-master, even up to the present time, for the "chaplain's" salary, is evidence that the holding of "orders" was not originally intended to form a necessary qualification in the head-master. This closely-observed rule accordingly has not even the virtue of antiquity.*

But there are *many* qualities—often absolutely ignored, or not borne in mind—which are essential, and indeed imperative, in a head-master, for the right government of boys and men in large numbers. But nevertheless, as I have said, a head-master is too frequently selected on account of his being in "orders," and on the ground of his knowledge of classics or mathematics; the more needed and momentous function of wise administration being relegated to a second rank. A master of the former type is simply a *teacher*; the latter is an *educator* in the largest sense of the term. The functions of the one are exercised in school, while those of the other are far more

* The abolition of this disastrous rule would yield another salutary influence. At the present time the highest rewards of the *clerical* profession, which exceed those of every other profession, are usually bestowed upon those who have held the chief positions in the *scholastic* profession. It can scarcely be urged that this is either wise, or just. It casts an undeserved slur upon the members of the clerical profession by the implicit assumption that it does not contain men with sufficient ability to occupy the highest posts. The rule, too, is so generally in force, that it tends to prevent able men entering the Church, except through the scholastic profession; and this result can only prove adverse to the well-being of both professions, since, to the detriment of both church and school, it leads and induces men to enter the teaching profession as a stepping-stone to church preferment, instead of basing that entrance on personal interest in teaching and capacity for the work.

concerned with the well-being of the boy during the eighteen hours of every day passed out of school, during which he is practically left to his own devices—hours in which, far more than in the hours of school discipline, the *character* is built up.

A head-master *must* possess great strength of character ; he must be upright, just, and gifted with a large share of “common sense.” The great difficulty with a weak head-master is that he will not follow when he cannot lead. Like all weak men, too, he constantly resorts to strong measures unnecessarily. It must not be forgotten that a head-master has to deal with a little world, in which he sees the beginning of every phase of the world’s doings ; and has the deep responsibility of forming character while it is capable of being readily moulded to good or evil. In “Coningsby,” Disraeli observed that, “the schoolboy, above all others, is not the simple being the world imagines. In that young bosom are often stirring passions as strong as our own, desires not less violent, a volition not less supreme. In that young bosom what burning love, what intense ambition, what avarice, what lust of power ; envy that fiends might emulate, hate that men might fear.” Stanley says* of Dr. Arnold, that he recognized in the peculiar vices of boys the same evils which, when full-grown, became the source of so much social mischief, and that he governed the school precisely on the same principles as those which he would have applied to a great empire. In speaking of the qualities necessary in a leader, General Gordon remarked :—“The main point is to be just and straightforward, to fear no one, or no one’s sayings ; to avoid all tergiversation or twisting, even if you lose by it, and to be hard on all if they do not obey you. All

* “Life of Dr. Arnold.”

this is not easy to do, but it must be my aim to accomplish it."

And it is such a head-master that our great schools still require. He has to exercise the function of a just and impartial judge; he must act uniformly in similar circumstances; his punishments, besides being invariably attendant on transgressions, should be precisely adapted to the class of offence. We should not then hear from time to time of a head-master who is uncertain in his dealings—sometimes treating a heinous offence lightly, at others a trivial offence with severity. Nor then would the moral feeling of a school be shocked by the unworthy act of dismissal of one master for a mere whim, and of another from personal spleen.

If head-masters only kept a private record of their verdicts in dealing with parents, masters, and boys, and would examine it at the end of each year, they might see that their decisions were often diametrically opposite in respect of the same offence—sometimes ridiculous, often unjust, frequently dependent on the mere caprice of the moment. We should not then hear of the wrong, unjust, and irritating punishments so continually allotted to boys—the keenest critics in the world—whose life is blighted by an unjust sentence, independently of the wrong inflicted upon parents and friends. Would not these wrongs be minimized were the graver school offences dealt with by a council formed of the head and some of the senior masters, who should "minute" the offence and punishment? Would not such a system effectively tend to protect the rights of parents and boys, and remove opportunity for the exhibition of personal spleen and caprice? Which is often the graver evil—the wrongs sometimes committed by boys, or those committed by a head-master who deals unwisely and unjustly with them?

Were boys accustomed to uniformly just and consistent dealings on the part of the head-master a most valuable moral training, and in the most effective form, would be presented for their imitation, which would prove of service throughout life.

Under the present system too autocratic a power is, I think, centred in one man—the head-master. This would not prove so great an evil were he placed in his position by reason of his special capacity for exercising that power; but under existing conditions there is no reasonable certainty that this requirement will be fulfilled.

Moreover, neither masters, nor parents, nor boys, possess a right of appeal from the arbitrary exercise of the head-master's judgment, except through the "Times" and "the Court of Queen's Bench." I need scarcely say that it is contrary to human nature to expect that any man can wield such power without committing grave errors of judgment: wronging colleagues from whom he differs; dismissing boys who are merely troublesome, with detriment to their future prospects; and occasioning needless expense and sorrow to parents and friends. To retort that such acts are rare under the present *régime* is no argument in its favour; it should not be possible that the fate of a master, or boy, should be dependent on one man.

In all institutions necessary changes as a rule do not originate from within; they are only initiated externally, and often after serious injustice to individuals and classes.

I have discussed the question of the appointment of an appropriate head-master in this treatise, because it is clear that the mental, moral, and physical health of a school depends mainly upon his capacity and character; and because I am convinced that this fact is

insufficiently recognized, with consequent injury to school health.

At the risk of being tedious, I would summarily urge as axioms that the *mental* health of a school—involving the mental progress and sound sense of the *average* pupils—depends mostly upon the qualities of the head-master and the wisdom he exercises in the selection of his assistants; that the *moral* health of a school—meaning its whole character and tone—is stamped throughout, in masters and boys alike, with the die of the head-master's force of character; and that the *physical* health of a school is largely owing to the head-master's common-sense and capacity in understanding and enforcing the fundamental laws of health.

Mr. Salt has well remarked,* “The selection of his assistants is not the least important of a head-master's duties. The ‘University Calendar’ is an interesting work; but it is an insufficient guide to character, and a ‘First Class Man,’ even a ‘Senior Classic,’ may be a very incompetent instructor.” Often the greatest failures of all, are not the inferior teachers, but the splendid scholars who cannot maintain the order requisite for the effective exercise of their abilities.

Assistant
Masters.

Why is it, again, that in the *scholastic* profession any man is considered fit to teach without prior training in the method and art of teaching? Is technical aptitude of less importance here than in the medical and legal professions? Is the art of teaching so essentially an instinct that no training is requisite? Why should not teachers be compelled to obtain a licence to teach, just as a doctor or lawyer receives a licence to practise? It has been

The
Training of
Teachers.

* *Nineteenth Century*, January, 1885.

said,* "It is indeed passing strange that the duty of instructing boys 'to learn how to learn' should be so confidently committed to those who have themselves never been 'taught how to teach.'" An observant Frenchman has also remarked of our scholastic arrangements in England, "To become a lawyer, doctor, or officer, you must pass examinations; to become a schoolmaster it is quite unnecessary; you open a school for boys or girls just as you would open a grocery-shop."

It is an indisputable fact that teachers need to be "taught how to teach" just as much as members of all other professions require a special education. The day must soon come when this will be recognized by the public; then, and then only, will it be carried out. In that excellent little book, "Form Discipline," Mr. Sidgwick, himself a genius at teaching, says: "It will have struck most of those who have been following my hasty sketch of the practical difficulties of the schoolmaster, that while there must still remain very much for everybody to learn from experience, yet there is much which it would be both useful and possible for those who are entering the profession to learn from a properly qualified teacher. As it is, the teachers in all our first and second grade schools have to get all their experience at the expense of the boys. Every term there are drafted into the profession batches of new teachers who, however successful they may ultimately prove, yet begin by making a large number of mistakes which might have been avoided. Nobody pretends that having been a year in a training-school will by itself make a good master when the other requisites are not present; but that everybody is improved by training is conclusively shown by the experience of the primary schools. They have, in their trained masters, far inferior material to begin with than the public

* *Nineteenth Century*, January, 1885.

schools, who can command the pick of the universities; and yet one has only to go into a primary school to see what an immense lift the training gives to the young men when they first begin to have the management of a class of boys. In ease, in resource, in confidence, in mastery of handling, a certificated master could give points to any average graduate—even to many of the best—fresh from the universities. I do not suppose that there is a man of experience in the profession who would not admit that the boys, as well as himself, would have been saved from much that was better avoided if he could have had a regular training.”

In an admirable paper on this subject, Mr. J. J. Findlay urges, that while training—strict scientific training—is essential, a *Training College* may not be the best means of ensuring this result; that for the practical purpose of higher education a master might serve his apprenticeship, not in a special college, but at a large school of reputation, where proper provision would be made for his instruction. To accomplish this he advocates that, in connection with some of the leading public schools, there should be provided a constant succession of young graduates, partly teaching under supervision, and partly studying the subject of education under the direction of experienced masters on the staff. This form of training has recently been set on foot (under the title of the *Seminar Jahr*) in the German higher schools.

At present, “an intelligent knowledge of the science and art which lie at the basis of teaching” is not in existence in this country, and has only been recognized in Germany. When we condescend to acknowledge its necessity, the present crudities and anomalies will vanish, and education will become, what its name implies, a drawing out or development of mental faculties with the least possible waste of energy, and with concurrent

advantage to physical powers. In the meantime we are violating nature's laws by overstraining the immature faculties of children, and restricting their natural activities.*

Until such a training is put in force, I would urge that all first appointments should be made for one, or at most two, terms, so that if a master be found incapable he may not receive the appointment permanently. This is gradually, I am glad to learn, becoming the custom in some public schools.

House-Masters. From the assistant-masters the *house-masters* are appointed according to seniority or selection. Whenever a boarding-house becomes vacant it is the rule for the next assistant-master in seniority to undertake or refuse it, as he likes.

In a public school, the character and capacity of the house-master under whose care a boy is placed are all important to a boy, since he has absolute control during the boy's residence in his house. It is this autocracy of the house-master which gives each boarding-house a character in a school, and almost independently of the school—often so marked that a boy bears, willingly or unwillingly, the stamp of his boarding-house through life; hence the boarding-house and boarding-house-master are a distinct element for good or evil.

This house-feeling, however, I think, is more frequently an element of evil in a school, and should not be encouraged. There is no doubt that it is generated and fostered not simply by respect for the house-master, but mainly by the fact that boys play their games as members of a "house," and not as members of the school, as is the case in many schools, which I shall discuss in the section on "Play." The feeling generates too early in life a party

* *Nineteenth Century*, November, 1888.

spirit. A soldier's enthusiasm attaches to his regiment, and not to his company, however much he may be devoted to his captain and comrades. A school-boy's feeling is too often for his house only, in almost entire forgetfulness that he is a member of the school.

The sentiment scarcely exists at some schools. The words—

“Then none were for a party,
Then all were for the state,”

might be truly adapted to schools—

“Then all were for the house,
Then none were for the school.”

This spirit may tend to the benefit of the house-master; but I am clear that it is not beneficial for the boy to be limited thus early to membership of a party, however renowned.

Parents should generally avoid a “popular” house-master. Woe to the boy when all the “house” speak well of the master, for he evidently is not doing his duty. In all houses there must be boys who need a very firm hand, and who will dislike, and speak disrespectfully of, the man who controls them, however much they may learn to appreciate him after they have left.

Some time since, I was greatly interested in the diversity of character ascribed to one of the ablest house-masters of the day by members of his house during his absence. I knew the master intimately, and his boys well. In every case where the master was applauded, it was by boys who did their duty and behaved themselves, and were a credit to themselves and him. In every instance where he was unappreciated, and was spoken of slightly, it was by boys who required a tight hand, and felt it. In most cases I could have

foretold the verdict before I elicited the information, according to my knowledge of each boy's character. Nothing was clearer than the inference that this master was doing his duty to every individual boy under his care: to be regarded disparagingly by the bad or the lazy boy was the highest evidence of his worth.

The boarding-house of that master should be avoided who never believes that his boys are telling him the truth, and who, consequently, acts the "spy;" the same remark applies to the master who foolishly believes all that is told him, irrespective often of evidence to the contrary: these opposite characters both tend to develop inveterate liars. There are few things so demoralizing to a boy's character as to feel that he can "*do*" his master.

It is a general rule that nearly every person who knows a boy at all has an opportunity of becoming better acquainted with him than his instructor. This should not be. It is as much the duty of the master to learn his pupil's character thoroughly, as it is the physician's duty to comprehend the constitution and the disposition of his patient: to fail in either case is incompetence. Yet how many masters know their boys thoroughly? How many ever enter into the lives, characters, temptations, and troubles of their boys, and strive to help them to lead upright lives? They are well taught from books; they are kept tolerably straight by threat of various punishments, often most inappropriate; but how many masters so get hold of the average boys as to win their affection and confidence?

The statement is sometimes made that the amount awarded to a house-master for boarding-house expenses is excessive in comparison with what is supplied to each boy. But it seems to be forgotten that a house-master receives his stipend for the performance of three distinct functions, viz.—

1. For tuition, since he usually instructs the highest forms, which involves most arduous work and responsibility.

2. For providing board, lodging, and washing.

3. For general supervision while the boy remains at school.

Now, where a house-master does his duty by each boy, this latter function is the most important he has to perform; for the character of a boy frequently depends upon the conscientious fulfilment or neglect of this office. And obviously no price would be too high for the capable and judicious performance of this work.

And as regards the *sanitary* condition of the houses, one master will seek out and effect every improvement, while another can only be moved by a great crisis which renders changes imperative.

Boys in one house meet boys from other houses in form and in chapel, but for the rest of their time they act, as a rule, independently. They usually play together as houses, and not as a school; and a boy in one house does not generally visit at another house, though in some schools this custom does not apply to the elder boys. It is thus evident that one house may differ, from various causes, very considerably from the rest, and while the tone of the school as a whole may be good, the tone of any particular house may be inferior; or, the tone of a house may be all that could be desired, while that of the school itself may be comparatively mediocre.

It must be remembered that our great schools, as a rule, are officered by some of the very ablest men in the land—men whose peers it would be hard to find. Such schools require such masters. And a parent needs a master who will take his place, and be able to instil confidence in the boy; so that a mutual regard shall exist which may generate not only respect, but affection.

Some of the most helpful lifelong friendships have been, and are continually being, formed between a boy and his master. This was eminently the case with Thomas Arnold—whose spirit, I am thankful to say, still pervades all our schools more or less—the friendship of whose pupils lives in English literature. This was also the case with James A. Garfield, the teacher, afterwards President of the United States, “who perfectly inspired his pupils with admiration and love for him, because he strove to gain access into their inner soul-life, to teach them a higher conception of life, and the part they have to bear in it.”

Masters, like boys, differ much in disposition; and while both may be equally estimable, they may yet be incompatible, and thus incapable of getting on well together, by reason of continual irritations on one side or the other, frequently without cause: *e.g.* a quick, impulsive boy may unfortunately be placed with a master of similar temperament; whereas if such a boy had been assigned to the care of a more placid, even-dispositioned master, there might then have been cultivated that love of his instructor, which is so much to be desired during the formation of a boy's character, and which constitutes a lifelong gain to him.

But how can a right influence be exercised over a pupil where he realizes the casual way in which he is frequently permitted to evade his lessons; the unjust, or unsuitable, method of his punishments; the inferior housing and food provided for him; and the absence or deficiency of those sanitary and other necessities for his growth and development?

How can this salutary influence be possible where the pupil is left so largely to himself, and receives little or none of that teaching which is essential for avoiding the pitfalls incidental to school life?

There is another important point which is too often ^{Form-} ignored, but which needs consideration, in relation to ^{Masters.} the boy's welfare. It is not only requisite that he should have a suitable "house-master," but also that thought and care should be bestowed in the selection by the school authorities of his "*form-master*." Let me explain what I mean. A parent once told me the following story about his son, who was admitted to be the ablest boy in a large school. In his "home reports" he always received the highest character, except in one particular. The parent remonstrated with his son; still, for several consecutive terms, the report never varied—a fine character throughout but for this single defect. At last the parent perceived the reason: his son and the master must be incompatible in temperament, probably from no fault on either side. After much pressure on the part of the parent that the boy might be placed under another master in this one subject, the request was reluctantly granted, and his son subsequently received the highest character from all his masters. What the incompatibility was, it would, perhaps, be difficult for either to describe, but of its existence there could be no doubt. If, then, at any time a boy fail to get on satisfactorily, a change of form-master may sometimes have the desired effect, and this course should be tried before the boy is condemned.

All professions have their *Etiquette*, which is usually ^{School} an understood code of simple straightforward common- ^{Etiquette.} sense rules—literally, simply personal honour, and "to do as you would be done by"—for the guidance of its members in carrying out efficiently the working details of professional life, and for the protection also of the public from their own unwise suggestions and requests, which too often lead to infinite trouble. For instance,

in my profession there is a rule—a most salutary one for all concerned—that a patient having selected a medical adviser to attend during a certain definite illness should, except for a consultation, retain his services to its end. But there are occasions when this rule may be, and should be, broken by the patient with justice; and there are cases also on the other side, not sufficiently allowed, in which the only straightforward and self-respecting course open to the medical man is to refuse further attendance. A very similar etiquette exists in our great schools—that a parent having once placed his son under a certain house-master, should retain him there during the time he remains at school. This is a most wholesome regulation; in fact, the only one that can work satisfactorily for the boy or the school; for nothing could be worse than continually changing from one house to another. But to make it a rule without any exception, and to compel a boy to leave the school altogether, rather than permit a deviation from the rule, may sometimes inflict a very great hardship upon both parent and boy. The rule taken absolutely is, I think, indefensible; for occasions must frequently arise, in which a relaxation would prove of benefit to all.

In the medical profession, again, one sometimes hears of a doctor so unreasonable as to expect that an attendance, once begun, implies a perpetual professional tie. And in schools a similar irrational precept is not unknown. A parent not long ago transferred his son from one private school to another, and the master from whose school he was removed remonstrated with his friend who had taken the boy, as if he were a receiver of stolen goods.

We are all too apt to forget that schools, hospitals, churches, and law-courts exist for the benefit of the public, and not the public for the benefit of the professions.

CHOICE OF BOARDING-HOUSE.

Boarding-houses are often, and will be, with some exceptions, what parents demand them to be.

If parents are satisfied with placing their boys in a house or school whose dormitories allow only 300 cubic feet of air space per boy instead of 700 to 800, that area will alone be provided; if parents demand cubicles, they will be provided, notwithstanding their undesirable nature; if parents are satisfied that the drains of a school should be connected *directly* with the sewer of the *town*, that serious defect will not be remedied; if parents prefer a school in the *country*, with cesspools situated on a higher level than the well (so that their contents can overflow into the well, and thus supply an infusion of sewage into the drinking water), instead of the adoption of earth-closets, this fatal arrangement will continue unchanged; and the same remark applies in respect of all defects.

This statement is no mere supposition, as some will be inclined to report, and as is too often suggested when evils are exposed.

It is an incontrovertible fact that in many of our schools the dormitory accommodation is actually worse than that insisted on by Government for paupers in our workhouses—less than 300 cubic feet of space per head being provided.

And in schools where the boys live and sleep in *cubicles* it is quite refreshing to find 700 cubic feet allowed—the lowest limit allotted for our paupers, who occupy the same room day and night, in workhouses.

But the most unsatisfactory fact is, that the expensive school, where the rate of payment suggests to a parent that the most favourable hygienic conditions must exist, is often the worst of all. When pupils return

home for the vacation looking unwell, parents frequently and justly complain, as the cause, that "the boy or girl has been worked too hard," or "that the food has been insufficient in quantity or inferior in quality;" while in many cases the chief reason is that the pupil has not been allowed sufficient air *indoors*, but has been compelled to breathe the same unchanged air more than once.

Air is the greatest essential to life—greater far than water or food. Without it we cannot exist for even a few moments; and yet schools, as a rule, provide plenty of food, are less particular about the quality of the water, but show very little regard to the amount—and therefore to the quality—of the air.

Not that the boy does not get out-of-doors sufficiently, for this out-of-door life in most boys' schools—I cannot say the same for girls—is ample; the defect lies in the insufficient air-space indoors, especially in the sleeping apartments, where a third of every day is spent. This latter fact implies that, in a term of three months, one month is passed in the dormitory, where the air-space is generally so deficient that the room literally stinks in the morning after eight hours' occupation.

Fortunately, so much time is spent in the fresh air, that the evil, to a great extent, is counteracted; yet, I would urge, that no growing boys or girls can properly thrive while they spend a third of their time under these unfavourable conditions. Some boys apparently are not greatly affected, but on the presence or absence of this adequate air-space depends, in the case of many a delicate boy, whether he shall grow strong and hearty, or show some latent disease which need not otherwise have been developed, and which, indeed, could not have been developed during a favourable school-life. It is an important and relevant fact that, by abolishing the "stuffiness" of barracks, the mortality from

consumption alone in the army has been reduced from $12\frac{1}{2}$ to $1\frac{1}{2}$ per cent.

Parents should understand that reasonable hard work rarely makes a boy look ill, provided he is well fed, properly housed, and has regular exercise, with sufficient sleep. But I have known disease and death to be caused by compelling boys to work hard under the most unfavourable conditions that it is possible to conceive.

I have *seen* living and sleeping rooms combined in schools where the only safety for the boys who occupied them lay in the fact that they only lived in them for three months at a time; had they resided in them day and night for twelve consecutive months, every occupant would have been ill. For instance, a boy working hard in his school begins to lose health and spirits day by day; an acute illness—brain fever (tubercular meningitis)—supervenes, and he dies. What is the verdict? *Overwork!* But is this true? Is it not rather owing to hard work under unfavourable hygienic conditions? Had the boy been allowed plenty of fresh air and light, instead of working in greatly deficient light, living, too, in the same air day and night, which he re-breathed again and again, he would probably have done his work without ill effects.

I have *seen* the cesspools at one of the most popular and expensive schools in the kingdom in such a state of repletion that it would be impossible for the boys to use them without defiling themselves with the decomposing ordure. I may add that I saw this condition, on the occasion I refer to, on the last day of the vacation, and the state of things had existed probably since the end of the previous term.

No one more appreciates the benign influence of venerable institutions and noble traditions than I do. But I hold still more strongly that where these venerable

institutions involve the absence of essential hygienic conditions, it would be prudent to avoid them, and to prefer the better hygiene of a humbler school which is wise enough to put in practice even the rudiments of sanitary science. To seek education at the risk of health, and even of life, involves too great a cost! On the other hand, many schools exist—some with illustrious traditions, others daily erecting them—where health is already a primary consideration.

The preceding remarks and illustrations are conclusive that the sanitary state of our schools is a question that demands the serious consideration of parents in the exercise of their choice.

The house or school improvements which parents deem to be *necessary* will frequently require to be expressly demanded; otherwise, as a rule—fortunately, with some exceptions—they will not be supplied, except under extreme circumstances which, when the mischief has occurred, absolutely compel them; but if masters find that parents are alive to the necessity of certain arrangements for ensuring the safety of the school, and require them before sending their children, the arrangements will be provided.

The approximation to a sanitary ideal in the boarding-house of a public school, and in the dwelling-house of a private school, will be considered hereafter.

IV.

BEFORE ENTERING SCHOOL.

MUCH has to be learnt by the child before the age for school arrives; in fact, the basis of all subsequent education, mental, moral, and sanitary, has then been laid, suitably or unsuitably. If the mother has fulfilled her part in the early tuition, which no one but herself can accomplish, the gain to the child is lifelong and priceless. What mother does not realize those beautiful words—of Lady Gifford to her son, the present Marquis of Dufferin and Ava—when she parts with her child for his first school:—

“At a most solemn pause we stand!
From this day forth, for evermore,
The weak, but loving, human hand
Must cease to guide thee as of yore.”

INTELLECTUAL EDUCATION.

Before entering school the boy should have been taught something, however little, with thoroughness; whatever he may have learnt should have been inculcated with method and completeness. The plan of keeping young children at work for a certain number of hours, quite irrespective of what they may learn, is wrong. I mean, that work which ought to take half an hour to accomplish should be finished in that time, and cease, and should not be permitted to occupy three hours; the

moral habit is thus early and steadily formed of saving and utilizing time in addition to the intellectual gain.

Moreover, there is little hope of ever inculcating the virtue of *diligence* unless some such reward is bestowed on the child for doing his best. Under the present régime, most children know that, however industrious or lazy they may be, their hours of work will be the same. And the intelligent child who learns easily is thus taught to *waste time*. The training in diligence marks the chief difference between success and failure in life.

Early pressure of work cannot be sufficiently deprecated, nor long hours for young children; each evil may cause an acute brain illness, or entail prolonged ill-health.

Children, as early as possible, should not only be taught to exercise their *memories*, but should also be encouraged to develop their *reasoning faculties*, so that they may learn to think before they speak, instead of asking stupid, unmeaning questions. A little wholesome "chaff" at home—especially sisters' chaff, which does a boy a world of good—when a senseless question is put, or a foolish observation made, will frequently act as an effectual, though mild, corrective, and will save the boy from much of that unpleasant teasing which, owing to his "greenness," he is apt to receive at his first school, and for which he has often to thank his parents. This avoidable torment frequently makes his school-life, during the first few weeks, a misery; sometimes causing him to be really ill; occasionally ending in his "running away."

MORAL EDUCATION.

A child's *Moral Education* also cannot be too soon commenced; and should, indeed, begin at the earliest

age. The moral nature resembles all our animal functions in this respect—that the highest performance is only obtained by fullest action, while inactivity leads to disease and death.

The chief reason why bad boys are so frequently found at school is the almost criminal neglect of parents during their early years, when the foundation of *character* should be laid. It is during these years that many parents transfer the care of their children to 'subordinates, with the consequent ignorance of wrong-doings which might otherwise be checked before they hardened into habits. For it is the rule, unfortunately, for parents to support the child against the governess or nurse, instead of selecting, after much care and anxious thought, the most efficient substitute for themselves, and giving her the heartiest support and sympathy. The child soon learns this, and seeing that the governess or nurse is not trusted implicitly, more and more develops any evil of character, and this virtually with the parents' support. The governess or nurse naturally strives to put up with misconduct, rather than incur the displeasure of her employers and the taunts of her charge. In the larger world and temptations of school, the growing defects expand into grosser faults, and often culminate in vice or crime that demands expulsion. Then the parents are aghast, and the school and school-fellows are blamed, whereas the offenders are the neglectful parents themselves.

One main reason why many children deviate from the right is the blind belief of parents that their own offspring are patterns of propriety and incapable of evil.

Parents must bear in mind, if they desire to be spared such fearful calamities, that truthfulness, honour, and uprightness are habits which are formed in the earliest

years—really before school-days commence ; nay, more, that it is all but impossible to produce such habits afterwards. In effecting this early formation of character punishment may be requisite, but it should be uniformly adapted to the offence, without varying according to the humour or temper of the parent ; and it is important to remember, as a rule, in moral administration, that the rewarding of good conduct is often more effectual than punishing bad conduct.

If this moral education be commenced at home as early as it should be, and be wisely pursued, the child will act rightly almost intuitively, and will shun wrong without hesitation. If it be neglected, self-control becomes a hard lesson to learn : sometimes only obtained after many deplorable falls, sometimes never attained at all : the untrustworthy boy becomes the dishonourable man.

That a child should be taught to speak the *truth* under all circumstances is admitted as an axiom. But this is not enough. It is imperative that children should be trained, from the commencement of life, to speak and act manfully with perfect directness, and thus avoid the possibility of adroitness. A timid child is often practically *taught* to tell a lie by the severity of the parent or teacher, or through fear of consequences. It is, therefore, essential to deal gently with them ; *never to take them by surprise*, and thus frighten them into untruth. Severity, too, generates bad temper, and yet there is no feature of character which judicious early training is more capable of moulding than that of *keeping the temper*, without which a happy and useful life is seriously hindered. Now comparatively few parents think of the importance of teaching the virtue of *self-restraint* : even infants are allowed to cry until they are tired, when a little attempt at diversion would at once be effective.

This is a virtue which should be instilled into a child before it can walk or talk, and should even be enforced, until the habit is so firmly consolidated that its practice becomes almost mechanical. In this way only can strong *will* power be developed. From infancy to manhood children have often simply to be importunate in order to gratify desires which should be repressed.

Above all, parents should teach their boys early to act from *high principle*: they should learn that there is but *one* Morality and *one* code of honour—applicable everywhere and to every condition of life—not one kind of morality suited to home, another to school, and another to politics.

An artificial conscience too often overlays the natural one, and tends to reconcile a man, in the name of *policy*, to many an act against which his genuine feelings protest. Policy is allowed to reign disastrously above *conscience*. Macaulay's dictum—applied generally—is too often true, "that many a man, with a wig on his head, will do, for a guinea, things which, without the wig, he would not do for a thousand pounds."

In one of his public speeches, Lord Armstrong said, "Moral teaching and religious teaching are difficult to separate, and the best school for both is a virtuous home." But how many parents or teachers, even in questions of religion, teach their children that the place of worship is a matter of local convenience, the Object of worship universal and paramount.

The child should also be early taught *self-respect*, for his own sake as well as that of others; he will then be ashamed to do wrong as a self-humiliation. If he respect himself, he will soon learn to respect others, whether they be superiors or not; he will not only learn, but feel, that wholesome lesson, so important for a *boy* to know, that a schoolfellow is not—in school-boy language—a

gentleman or a *cad* according to his birth or means, but by reason of his personal conduct alone.

Parents too often allow—frequently encourage—their children to presume upon their noble and ancient birth, and to expect homage on account of ancestors. A long line of noble ancestors is much to be coveted; but noble birth does not cover worthless personal conduct. Better far, simply to teach children, that each may become, and should strive to be, a noble ancestor to succeeding generations.

It would be invaluable if parents would teach their children something, too, of the *manliness* of Christ as the one permanent model to pursue. Let them dwell on this aspect of Christ's character—the utter absence of effeminacy as the result of a Divine and unselfish life: his very gentleness being a sign of strength: this highest form of manliness would appeal to a boy's nature with increasing power. The chief feature in a boy's character is the desire to be, or appear, manly—sordid and contemptible though his idea of manliness may often be. Still the trait exists, and it is incumbent to place before him persuasively the ideal manliness. Under the stress of this example, *self-reliance* will be gradually developed, and vigour and manly freedom of life produced. In the encouragement of self-reliance, a maxim of Dumas fils is the guiding one, "Never forget that others will depend upon you, and that you cannot depend upon them."

Some may be inclined to think that, in a treatise upon Health at School, I am venturing beyond my province in making any observations on education, and its mental, moral, and social aspects; but I cannot consider the boy at school apart from his surroundings—what he is and may be mentally and morally—since on them much of his happiness depends, and, if his happiness, his health. I

might also appeal in vindication to the inter-influence that exists between a well-ordered mental and moral condition, and the physical framework through which it acts.

SANITARY EDUCATION.

It is very important that parents should consider some few points connected with the health of their children before they leave home for school.

And, first, I would mention *proper clothing*—clothing being used not only for adornment, but for protection of the skin against cold and against warmth. Proper
Clothing.

The *skin* is about the most important gland we possess, and needs care and prudence to enable it to do its duty, and to prevent its functions being arrested by sudden changes of temperature; yet the greatest carelessness exists, and little thought is given to its protection. To prevent its sudden exposure to the various changes of temperature to which we are liable, the skin requires a *non-conductor* next it; in winter, to retain the heat and exclude the cold; in summer, to prevent the skin being checked suddenly in its action, and to delay evaporation from its surface at any time; and to secure its efficient action under all conditions. The nature of the non-conductor is not essential, so long as it is really a non-conductor. In defiance or ignorance of this requirement, parents allow their sons to go to school with linen next to the skin—the very worst of all non-conductors—flannel being the best, then merino, silk, calico, and linen, in the order enumerated.

If a good non-conductor be worn winter and summer, it matters little about the rest of the clothing, and the question of overcoats is less material. This rule applies

to all children, but especially to children from a delicate stock, to those who have been recently ill, and to those who have come from India and other hot climates.

For the purposes above mentioned, *woollen material* is the most efficient, and white flannel is the best form. It is the worst conductor of heat, and thus allows the skin to act efficiently under all conditions; for, however sudden the changes of temperature, this kind of material prevents a check to the skin's action. It is, moreover, the best absorber of moisture, and the best retainer of it and of the other elements of perspiration. All will admit that flannel is the best for winter wear; but it is not so generally allowed that it is even more necessary during summer. No one, however strong, whether living in a hot or a cold country, should be without a good non-conductor next the skin throughout the year.

This under-clothing of flannel should be always worn by day, though the consistency of it may be varied in winter and summer according to the temperature. But in this country the summer season should be well established before a change is made in the thickness of the under clothing, as much illness is caused by a premature change suggested by a few warm days in April or May.

It often happens that on the first warm day in February boys leave off their merino or flannel vests, and simply wear a white linen shirt next the skin. This is sometimes very dangerous; and it is always unwise to incur the risk which this premature change involves. Every boy should be taught that the most manly thing is to strive so to live that he may be always in good health, and avoid incurring risks which lead to illness and disease.

There is a rather pernicious habit taught to children, to which I desire to call attention. It is that of folding up their day-clothes on going to bed; whereas the healthy

course is to teach them to spread them out to air and dry, so that they may have opportunity to sweeten.

Of all clothing, *excessive* clothing is the most injurious. Parents who consider their children delicate are apt to swathe them in an inordinate quantity of clothes. I have seen four to six layers of flannel on such children. How could children be otherwise than delicate with so oppressive a burden? Their skins were consequently never dry, but in a continual state of moisture. As soon as they were properly clothed they ceased to be delicate. The object of all clothing should be to keep the skin warm, short of being moist, under all conditions except active exertion. The moment there is perceptible moisture on the skin under ordinary circumstances, night or day, nature is warning us that the clothing is excessive and that harm will result.

One word more on this subject of clothes. Some boys at our schools, frequently those who come from homes of affluence, might as well be without mothers or sisters, judging from the condition of their clothes, especially of their under-clothing. I know boys are careless in the way they deal with their under-clothes, in dressing and undressing; but their under-garments are sent to school from some homes in a state that would disgrace any poor cottager who was short of time to mend, and means to buy. With some palpable exceptions, I do not think one would be very wide of the mark in judging a boy's character from the state of his under-clothes; as this would generally be emphatic evidence whether the boy had been well brought up by his mother, and had known the influence of a mother's or sister's love and care.

A mournful chapter could be written on the suffering ^{Boots.} caused to children through misfitting boots, or those which they have *outgrown*—not present trouble only, but

lifelong suffering. Unfortunately, the prevailing parental sentiment, even among the wealthy—unless the subject is utterly neglected—is that, whatever the growth of the foot, the boots must not be discarded until they are worn out. What a vast amount of good might be effected on both sides if they were passed on to poorer neighbours in such a case!

Too much care cannot be devoted to ensuring *warm feet* at all times. The boy should be well shod with thick boots to keep out the wet, and be provided with a sufficient number of pairs to allow each pair to become thoroughly dry, after getting wet, before they were worn again.

I would also urge on masters the great importance of providing means for the thorough *drying of boots*, so that, after they have been completely sodden, as so frequently happens after playing on wet grass or brook jumping, they may be perfectly dried before they are worn again. For this purpose a heated chamber is required, well ventilated to let out the moisture, and having narrow bands of galvanized iron, with a serrated edge, on which the heels of the boots can be hung; they can then be dried rapidly inside and out.

The boots should be of sufficient *length*, so shaped that the inner border from the big toe to the heel lies in a straight line, and so *broad* in the sole that the foot may not be cramped in its growth, and its natural arch destroyed. The soles should be thick enough to keep out damp, and the heels not sufficiently high to tilt the foot from its natural position. Tight boots destroy the natural elastic movements of the foot, and by their interference with the circulation cause *chilblains*.

If appropriate boots were worn, there would not then be produced so many cases of that most painful trouble, an in-growing toe-nail, nor would the toes become

anched in consequence of inability to move. This question of the provision of suitable boots during the growth of the boy's foot is so seriously neglected by parents and teachers that lifelong suffering is caused. If a little more care and interest were taken by parents, the medical officer would not be so frequently advising about the deformed condition of the foot, nor having so constantly presented to him those painful cases of chilblains, not to mention corns, bunions, and sore heels, which are chiefly produced by improper or imperfect boots, and which, preventing work and play, and entailing much constant suffering, generate considerable ill-health. The usual fashion of high-heeled boots for girls during their growing years cannot be sufficiently deprecated, for it produces an unnatural, and therefore ungraceful gait, and tends to curvature of the spine, arising from the weight of the body being thrown on to the front of the feet.

We laugh at the Chinese about their voluntarily deformed feet; but I could show instances without number which a Chinaman would be heartily ashamed of, so great is the deformity just as wilfully produced by fashionable (!) boots. The last thing that is thought of in the purchase of boots is their conformity to the shape of the foot, with necessarily injurious consequences.

The bootmaker is usually abused for making such boots; but how is he to avoid it? He exists for the public, not the public for the bootmaker. He must make what he can sell, and consequently he can only regulate the form of his goods in accordance with the demand, and not in accordance with the requirements of nature.

Warm woollen *socks*—never cotton—and dry boots, are requisite for the preservation of health; for they keep the feet both warm and dry, while cold feet are a fertile source of innumerable small ailments, which often constitute what is called "delicacy."

The delicacy of whole families is constantly dependent solely upon this cause, and arises mostly from the want of wisdom and forethought on the part of the mother.

I am aware how commonplace these observations are likely to be considered, and others I shall have to make ; and yet, when one sees errors repeatedly committed, even by intelligent people, and remembers the serious character of the consequences, one cannot feel that the remarks are of the trivial nature which at first sight would appear.

Daily
Natural
Relief.

There are other subjects also seemingly of so commonplace a nature that it seems almost ludicrous to mention them, while in fact their real importance is inversely proportional to their apparently trivial character. Among these subjects is that of the necessity of a *daily natural relief*. Parents constantly neglect teaching their children that this *natural relief* is daily imperative at a certain hour, and the neglect entails a vast amount of discomfort to the boy on coming to school, often produces a great deal of ill-health, and occasionally danger.

It is one of the characteristic features of the nervous system to resume the same mode of action at stated times, and therefore regularity is of great moment in the exercise of this function.

I do not think that five per cent. of the pupils in our schools have ever been taught at home this wholesome lesson. The subject has never been thought of ; or, if it has, it has never suggested itself as being naturally amenable to rule, and an aperient has been deemed the appropriate remedy.

The necessity of the daily natural relief is one of the easiest and earliest lessons a child should be taught, and the practice should be enjoined with uninterrupted regularity ; if observance is found to be difficult the practice should be *enforced* ; medicine should seldom be

resorted to. Of course, I am now only referring to children in health.

I have never seen a child in health who really required the aperients which are so often given. The difficulty the child finds is simply the result of early bad management. I have frequently proved this to parents by curing a child at once by a system of rewards in place of a course of physic. One marked instance occurs to me. A boy, about twelve years old, had had an aperient daily, or almost daily, for two years; he never otherwise had a relief. On being consulted, I refused to continue the past mode of treatment, but gave him one aperient to start him fair. Then I instituted this plan: I promised him sixpence every time he had his daily relief at 9 a.m., and paid the amount at the moment of success; but he was to forfeit a shilling every time he failed, to be discharged at the time of failure, so that the reward came with the success, and the punishment at the moment of failure, and he connected these mentally. On the first morning he earned his sixpence, but on the second he lost his shilling. This was too much for him: he never lost another, but had his daily sixpence (and made his fortune), without requiring another aperient. I could repeat very many similar instances.

A little patient painstaking on the part of parents from the very beginning would save trouble to all concerned. It is neglect—early neglect—and that only, which causes subsequent difficulty.

But where parents have neglected this duty, teachers must realize that constipation dulls the mental capacity; renders the disposition morose and lethargic; is sometimes attended by dangerous consequences; always facilitates the development of disease from within the body; renders the body susceptible to external causes; and, as years advance, tends to the production of various

discomforts and diseases. They should further instil into their pupils' minds that, to allow refuse in the body to accumulate, putrefy, and poison the whole body, is a mark of personal uncleanness. The importance of this habit has been effectively expressed by Dr. Lander Brunton, in these words: *—"As a rule, people are now fully alive to the risks they run from poisoning by sewer gas, or, to put it more widely, from poisoning by products of decomposition *outside* the body; but perhaps we do not all of us keep so clearly before us as we ought, the fact that *inside* the body there are all the conditions for the formation of putrefactive products, and the most favourable arrangement for their rapid absorption."

I would suggest, as a simple and effectual method of obtaining the desired result, that some such notice as the following should be printed, framed, and glazed, and placed on the inside of the door of every water-closet at schools:—

A MAXIM OF HEALTH.

It is important that every boy should strive to obtain a daily action of the bowels.

The only way to ensure this is to visit the W.C. every day **AT THE SAME HOUR**; the best time being immediately after breakfast.

Morning
Cold Bath.

I can scarcely speak too strongly in favour of the beneficial effect of the daily cold bath in the morning, especially for the young and growing—boys and girls.

I am inclined to think that the reason why it is not more used as a daily luxury on rising, is owing to the very common practice of bathing infants and young children in the nursery in the evening instead of in the

* Loc. cit.

morning. By this course the delight of the morning bath is not experienced from the commencement of life, but is a "new thing" which has to be started after the children leave the nursery; and thus is neglected, and the start rarely made. I believe if mothers would only see that their infants and young children were bathed in the morning, with warm water at first, gradually using cold water as they become older, and would provide a bath in their room when they leave the nursery, the practice would become continuous as a matter of routine. It is a habit which is not only cleanly, but invigorating, and when commenced early in life, and practised in a proper manner, is incapable of doing harm to boy or girl.

On the other hand, the hot bath at bedtime, so commonly resorted to compulsorily, and so strongly advocated by many, is capable of serious harm to many a boy by suggesting ideas and feelings which lead to practices that otherwise might never have been originated.

On rising from bed the pulse is feeble, while the skin, being relaxed by the warmth of bed and of sleep, and thus less capable of resistance, is then very susceptible to cold. Hence the value of the cold bath on *rising*, in order to excite the heart's action, to stimulate the blood-vessels of the skin to contract, and to close its pores. The morning cold bath, followed by a cup of hot coffee or milk before "first lesson," tends to health and vigour, and is a most wholesome rule for every boy and girl at school.

I know it will be said that it is impossible in a large school to give every boy a morning bath. This is not so, for it is already an accomplished fact in some very large private schools, and in some boarding-houses of public schools, and might be carried out in all with very little trouble. It would be desirable to provide arrangements also for drying the bath-towels after use, which can be readily affected by a coil of hot-water pipes.

V.

ENTERING SCHOOL.

A NEW BOY.

A NEW boy! What an interest is comprised in these few words—embodying, as they do, a Record and a Prophecy: a record, let us hope in most cases, of a happy past; a prophecy whose event is yet hid in darkness, and is largely to be determined by the history at school. The pain often attending the first entrance on school life, and recurrent frequently with the return to school, is a very real one; and parents should sympathetically strive to diminish it by instilling encouragement and hopefulness in place of stimulating it by dwelling on the grief of parting. The transition of the boy may be momentous for the future; and requires to be accomplished therefore with discretion and loving judgment.

The new boy, in many cases, is welcomed by his fellows on entrance, and a happy commencement is thus given to his school life, with far-reaching consequences. In many instances, on the contrary, he is slighted and shunned, after the fashion of the average school-boy, so that not infrequently he is morally crippled at the start. The information he requires for his guidance he is expected to discover as he can. His teacher looks to his work being properly done, although in the novel atmosphere and surroundings the mind must naturally be inelastic and restless for a time, and needs sympathetic

guidance and some experience of the new aspects of life before it can rightly employ its powers. Under such circumstances, combined with small appetite and insufficient sleep produced by the change, the boy often becomes bewildered and dull; and a state of inertness and pure submission, thus engendered, is not the fitting soil for mental and moral expansion. The various customs, again, provided for the mortification of the new scholar, form a tradition that is often barbarous and not infrequently cruel in its effects.

The question arises, Can *these* miseries of new boys be lightened by any means, short of changing school-boy nature? I am confident they can; and though they may not be extinguished, they can distinctly be ameliorated. For instance, *parents* should write only cheerful letters, and not more than once a week; moreover, they should not visit their children at school for several weeks—say, not earlier than mid-term.

The *teacher*, too, must not expect much work at first, and must abstain altogether from punishing, until it is quite clear that the boy has found his level, and has become comfortably accustomed to the school routine. But the most important detail I have reserved until the last—that every *new boy* should be placed under the charge of some *old boy* of nearly his own age, or of his own form, or of his own study or dormitory, who should be responsible for him during his first term, and to whom the fresh boy could apply whenever any doubt or difficulty arose. Of course, I know that many boys act in this way amongst themselves already; but the peculiar, shy, or diffident boy is the very one who needs special sympathy, help, and protection, and the system, therefore, should be regularly arranged for *every* new boy. At present, I have no hesitation in saying that the majority do not require this help; and that the

minority, who really need it, do not obtain it. In discussing a large question with a head-master some time since, where a small section of a school were to my mind grossly neglected, the head-master, with great indignation, replied: that, if in a large school, seven-eighths of the boys were well-cared for, nothing more could be expected; whereas I maintain that a head-master's duties are incomplete until the remaining one-eighth are equally well-provided for. The seven-eighths in all schools can more or less take care of themselves; it is for the helpless remainder that I mainly plead; were it not for the frequent neglect of this minority, much of the present book would not have required writing.

The preceding plan of supervision is already carried out at one school with which I am acquainted, and it works admirably; and this is due to the fact that the head-master is a pioneer, not merely in the details of teaching and the demands of sanitary science, but also in all matters pertaining to the welfare of the school-boy.

PERIOD OF ENTRANCE.

The parent, having decided to send his child to school, and having selected the school most appropriate for him, naturally asks himself the question—*when* shall I send him?

Age. At what age a boy should be first sent to school must depend on many circumstances, but should greatly depend on his disposition and character. The epoch at which he can safely part with the individual attention of a parent, or a governess, is a matter for mature consideration in each case, and should be partly determined by the fact whether his first school is to be a day- or boarding-school. I therefore think this question should be an open one, to which no general rule can be applied.

If it be true wisdom, as my readers will admit, to ^{Time of} expose the constitution of the young to as little hardship ^{Year.} as possible during their growing years, all children should obviously commence school life at a period when the transition from home will prove as easy as possible. To translate the young suddenly, especially the delicate, to a perfectly new environment is an experiment which should involve the least possible break; and this course will be accomplished if the transfer be made at the commencement of the summer term, when the weather is warm and bright, the days long, and the nights warm, and the conditions thus the most favourable for easy adaptation to the new surroundings. The constitution of the child will then readily and naturally accommodate itself to the change. I would emphasize this point by stating that it is wrong to send a child to school for the *first* time during the cold autumn and winter months; for, as already intimated, he has enough to contend with without superadding the miseries of cold, damp weather, with the first lesson in the dark before breakfast. Moreover, the long dark winter evenings offer covert for the bully to exert his sway, and the bad boy to exercise his sinister influence—evils that possess the greater power by reason of occurring before the fresh boy has had time to fit in with the conditions of his new life.

With a strong hearty self-reliant boy it may not greatly signify, from the point of view of health, when he enters school; but to a delicate boy, or one who, though strong, has had a recent acute illness, or to one lately arrived from a hot climate, the time of entry is a matter of great importance. The boy in any of these latter cases should always *enter school* in the spring, so that he may become used to the change of place and life during the most favourable season, and thus avoid the risks of bad weather at a time when he is most susceptible to its influence.

It is better, however, for all boys in respect of their education to enter school at the commencement of the "school year," which begins, after the summer vacation, in September. This question, however, is of minor importance compared with its relation to health. And it can be quite well arranged for school life to begin in the spring, so long as it terminates at the end of the summer term for those proceeding to the Universities in October.

MEDICAL EXAMINATION.

When a boy goes to school he generally has to pass through a searching ordeal by his masters, with the view of ascertaining whether his knowledge is sufficient to permit him to enter the school at all, and, further, the standard he has reached, and consequently the *form* in which he should be placed. By this means he is not set at work above or below his capability, and a fair knowledge of his working powers is gained.

A similar examination is, or should be, enforced in order to ascertain the capacity of every "new boy" to join in the *school games*, which should be compulsory with every boy—for it is necessary to restrain some, and to push others in order to avoid that worst of all evils, Idleness—unless his medical examiner excuse him for some significant and valid medical or surgical reason.

This *medical examination* should be as searching as a thorough examination for life assurance, for several times I have accidentally found boys with mitral disease of the heart,—which requires care, to avoid strain while the heart is still growing—and other diseases, joining in all the school games, some of which require active and prolonged exertion. Without this early care, the cavities of the heart are certain to dilate, with attendant discomforts and danger, instead of being permitted to

develope the compensatory hypertrophy of the walls, which is essential in valvular disease.

This physical examination should extend to the eyesight, where a defect is often the cause of a boy's failure to cope with his work, and entails very considerable suffering from intermittent, and then persistent, headache. Many are the boys and girls who have had their health permanently damaged, and their bodies deformed, as the result of defective eyesight, which might have been obviated by treatment suggested by an examination of their eyes prior to entering school.

Just as the head-master, therefore, regards it as essential to the boy's success in education that he should be examined intellectually on entrance, so the head-master should request the medical officer to ascertain what he is capable of physically—what form of exercise will increase, and what retard, his development.

I append on p. 86 a suitable form for recording the results of the medical examination.

The Medical Officer having made a complete investigation of the present condition of the entering pupil; and having also studied the Medical Report, described hereafter (which should accompany the boy when he presents himself for examination), is in a position to certify as to the amount of physical exercise and education for which he is adapted. He can then fill up the appended form (p. 87) for the boy's master, by naming the school games in which he should join, who will thus possess an efficient guide in the supervision of the exercise of his pupils. In this way no boy could shirk his exercise, and a greater variety imposed which would aid in his better development.

MEDICAL EXAMINATION OF A NEW BOY ON ENTERING SCHOOL, AND HIS MEDICAL HISTORY.

Date of Examination.....			
Name.....		Age.....	
Height.	Weight.	Chest Measurement.	
General Appearance.	{ Aspect { Colour of Hair { Carriage..... { Vaccination Marks.....		
	Muscular System. }		
	Nervous System. { Hearing..... { Sight.....		
	Circulatory System. { Heart..... { Bloodvessels..... Pulse.		
Respiratory System.	{ Throat..... Respiration. { Percussion { Right..... { Left..... { Auscultation { Right..... { Left.....		
	Tongue.....		
	Stomach.....		
	Liver.....		
Digestive System.	Spleen		
	Intestines..... Hernia.....		
Urinary System.	Character of Urine	.....	Incontinence.....
	Specific Gravity.	Albumen.	Sugar.
State of Health } while at School.		(To be filled in on leaving)	
Illnesses and Accidents } while at School.		(To be filled in on leaving)	
Signed.....			
Medical Officer.			

N.B. Appropriate space must be arranged for inserting the details.

SCHOOL GAMES

In which.....may join.

Cricket ...	...	...	...	...	O
Football	...	...	...	...	X
Boating	...	...	...	...	XX
Swimming	...	...	...	...
House Runs	...	...	...	...
Paper Chases	...	...	...	...
Athletics	...	...	...	...
Gymnasium	...	...	...	...
Physical Drill	...	...	...	...
Skating	...	...	...	...
Racquets	...	...	...	...
Fives ...	...	...	...	...
Tennis ...	...	...	...	...
La Crosse	...	...	...	...
Golf ...	...	...	...	...
Hockey...	...	...	...	...
Base Ball	...	...	...	...
Wrestling	...	...	...	...
Fencing	...	...	...	...
Boxing ...	...	...	...	...
Rifle Corps Drill	...	...	...	...
Rifle Shooting	...	...	...	...
Camping out ...	...	...	...	...
Natural History Excursions	...	...	...	...
Walking Exercise only	...	...	...	...
Cycling...	...	...	...	...
Workshops	...	...	...	...
Gardening	...	...	...	...

O Not to play. X May play. XX Ought to be made to play.

Signed.....

Medical Officer.

HEIGHT AND WEIGHT.

In the preceding medical statement the weight and height should be recorded, with the object of seeing the nature of the boy's growth before he entered school. This record should be continued year by year, in order to observe whether the natural standard of height and

weight is being maintained ; a failure in either of these respects being the surest sign that the boy is not thriving, or that illness is about to occur.

The measurement of the *height* should be taken in the socks, without boots ; that of the *weight*, in trousers, vest, and socks. And the *girth of the chest* should be measured at the nipple-line on the bare skin, with the arms lying by the side—as a soldier stands at attention—both after the deepest inspiration and expiration, and the mean recorded. If this plan be not adopted boys are able to increase the measurements to a considerable extent. In this way, too, the capacity of the lungs can be estimated.

But in estimating the significance of these records, it must be remembered that most children grow by fits and starts : rapid growth requiring great care, more rest, and little work : while with loss of weight, all work should be diminished, or cease altogether. Whether children have been brought up in town or country is also shown in this record : thus Dr. Roberts has stated that between the ages of 10 and 20, children living in the country exceed in *growth* those living in towns by an inch in *height*, and in many cases by 7 lbs. in *weight*.

Dr. Squire has furnished the following scale as a good average standard of height and weight for the following years :—A child 8 years of age should measure a height of 4 feet, and weigh 4 stone ; at 12 years of age, a height of 5 feet, with a weight of 5 stone. At the school age of adolescence

A child of 5 ft. 6 inches in height should weigh 8 stone.

„	5 „ 8	„	9	„
„	5 „ 10	„	10	„
„	5 „ 11	„	11	„
„	6 „ 0	„	12	„

Girls should show a higher rate of growth at the

age of 11 to 12 years, or healthy development is being hindered.

The following table applies only to English public-school boys, and is, therefore, precisely appropriate for this treatise:—

TABLE SHOWING THE AVERAGE HEIGHT, WEIGHT, AND CHEST MEASUREMENT OF THE ENGLISH PUBLIC-SCHOOL BOY.

Age.	Height.		Weight.		Chest Girth.
Years.	feet.	ins.	stones.	lbs.	ins.
13	4	10 $\frac{1}{2}$	6	0 $\frac{1}{4}$	28 $\frac{1}{2}$
14	5	0 $\frac{3}{4}$	6	9	29 $\frac{1}{2}$
15	5	3	7	5 $\frac{1}{2}$	30 $\frac{3}{4}$
16	5	5	8	4 $\frac{1}{2}$	32 $\frac{1}{2}$
17	5	7	9	2 $\frac{1}{2}$	34 $\frac{1}{4}$
18	5	8	9	11	35 $\frac{1}{4}$

This phase of the subject is so important, and the method so certain a guide to the rearing of the young, that I make no apology for inserting a table from an excellent paper, which appeared in the *Lancet* of 1888, by Dr. W. Stephenson, on the relation of weight to height in the English-speaking races. In this paper he gives the average height and weight, and also shows how the relative weight may be ascertained in cases which exceed, or fall below the average.

AVERAGES OF HEIGHT AND WEIGHT OF BOYS AND GIRLS OF ENGLISH-
SPEAKING RACES, CALCULATED FROM THE TOTALS OF BRITISH AND
AMERICAN STATISTICS.

Boys.					Girls.				
Age.	Height in inches.	Gain in height.	Weight in pounds.	Gain in weight.	Age.	Height in inches.	Gain in height.	Weight in pounds.	Gain in weight.
5	41·30	—	40·49	—	5	41·05	—	39·63	—
6	43·88	2·58	44·79	4·30	6	42·99	1·94	42·84	3·21
7	45·86	1·98	49·39	4·60	7	44·98	1·99	47·08	4·24
8	47·41	1·55	54·41	5·02	8	47·09	2·11	52·12	5·04
9	49·69	2·28	59·82	5·41	9	49·05	1·96	56·28	4·16
10	51·76	2·07	66·40	6·58	10	51·19	2·14	62·17	5·89
11	53·47	1·71	71·09	4·69	11	53·26	2·07	68·47	6·30
12	55·05	1·58	76·81	5·72	12	55·77	2·51	77·35	8·88
13	57·06	2·01	83·72	6·91	13	57·96	2·19	87·82	10·47
14	59·60	2·54	93·46	9·74	14	59·87	1·91	97·56	9·74
15	62·27	2·67	104·90	11·44	15	61·01	1·14	105·44	7·88
16	64·66	2·39	120·00	15·10	16	61·67	·66	112·36	6·92
17	66·20	1·54	129·19	9·19	17	62·22	·55	115·21	2·85
18	66·81	·61	134·97	5·78	18	62·19	—	116·43	1·22

These results are still better expressed in his sub-joined graphic charts :—

CHART I.—ANNUAL INCREASE IN WEIGHT IN BOYS.

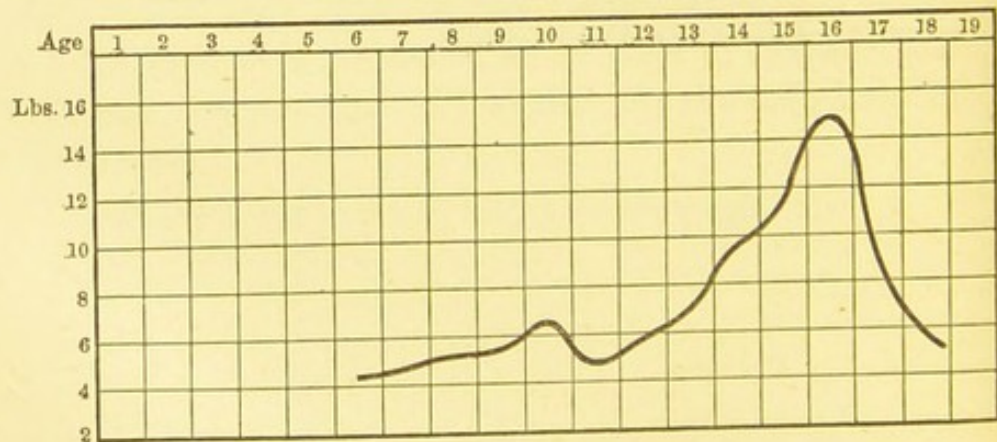
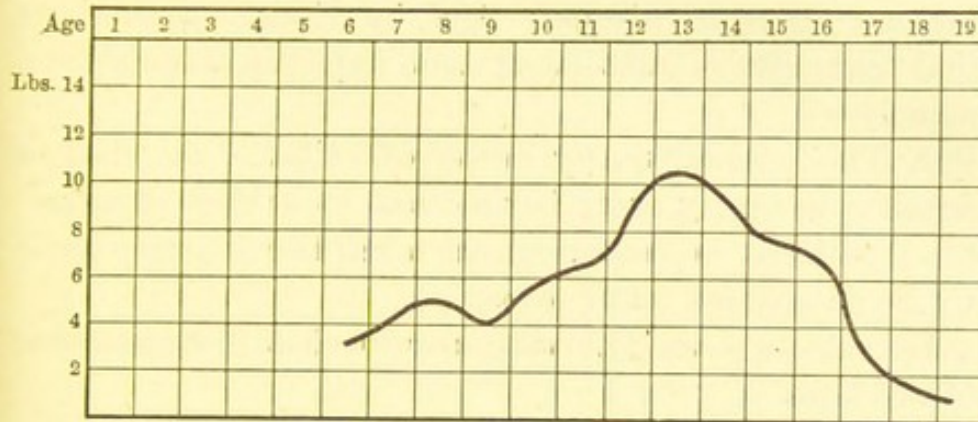


CHART II.—ANNUAL INCREASE IN WEIGHT IN GIRLS.



From these charts it will be seen that the year of most active growth in boys is sixteen, and in girls thirteen. It will be noticed that a marked dip occurs in respect of boys at eleven, and of girls at nine; while the ratio at nine and eleven is the same as that at thirteen and sixteen, *i.e.* the proportion of four to five. From this it is evident that about the ninth year in girls, and the eleventh in boys, growth is at its lowest depression, and children do not seem at these epochs to thrive so well as at other times; whilst in the thirteenth year in girls, and the sixteenth in boys, growth attains its highest annual elevation. From this point, the curve falls more gradually in girls than in boys to a minimum in the eighteenth and nineteenth years respectively. These data show that boys and girls should not be compared at the same ages in respect of growth.

In evidence that this important question is not neglected in some schools, I may mention that only last year a head-master very kindly informed me that he had a physical record of every boy in his school taken by the same man, a sergeant-major, three times a year since 1874; and also a ledger containing the physical history of every boy. He pointed out the enormous gain to be attained by watching the physical development of the

chest, and showed its value in the diagnosis of the earliest signs of disease. And he rightly maintained that his registers established some important conclusions, namely :—

1. The possibility, by means of suitable exercise, of developing nearly every boy's chest to a high standard, as exemplified in measurements taken immediately prior to the date of his letter to me.

He subjoined the following *average* chest measurements of the boys.

THE AVERAGE CHEST MEASUREMENT OF THE BOYS AT SCHOOL
IN APRIL, 1892.

Age.	Girth of Chest in inches and decimals of an inch.
14	32
15	33·8
16	35·9
17	37·3
18	38·2
19	39

2. That when a boy's chest is increasing steadily in girth, his lungs are certain to be sound.

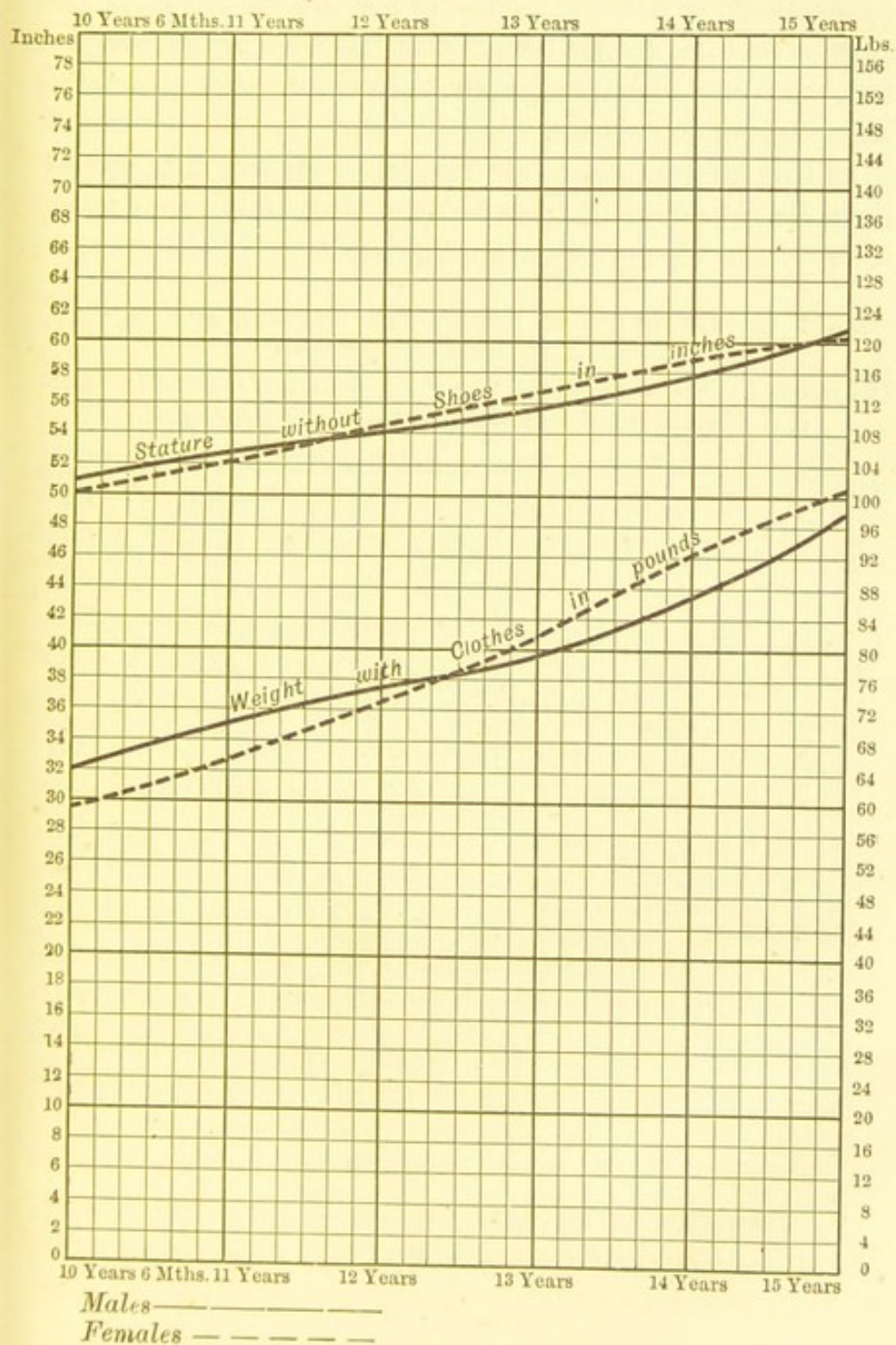
3. That when a boy's chest ceases to expand—at the growing age—he should at once be medically examined.

He further stated that his medical adviser had in this way discovered two or three cases of incipient chest delicacy, of which there was no other visible symptom than the failure of the chest to grow.

These physical registers are of great value in providing an accurate life-history during school; in indicating whether the boy or girl is being injured by the mode of life, by overwork, under feeding, insufficient accommodation, and in elucidating the advent of disease,

CHART I.—ON WHICH TO RECORD THE STATURE AND WEIGHT FROM 10 TO 15 YEARS OF AGE.

The printed curves show the average Stature and Weight of the Male and Female population during the above period of life.



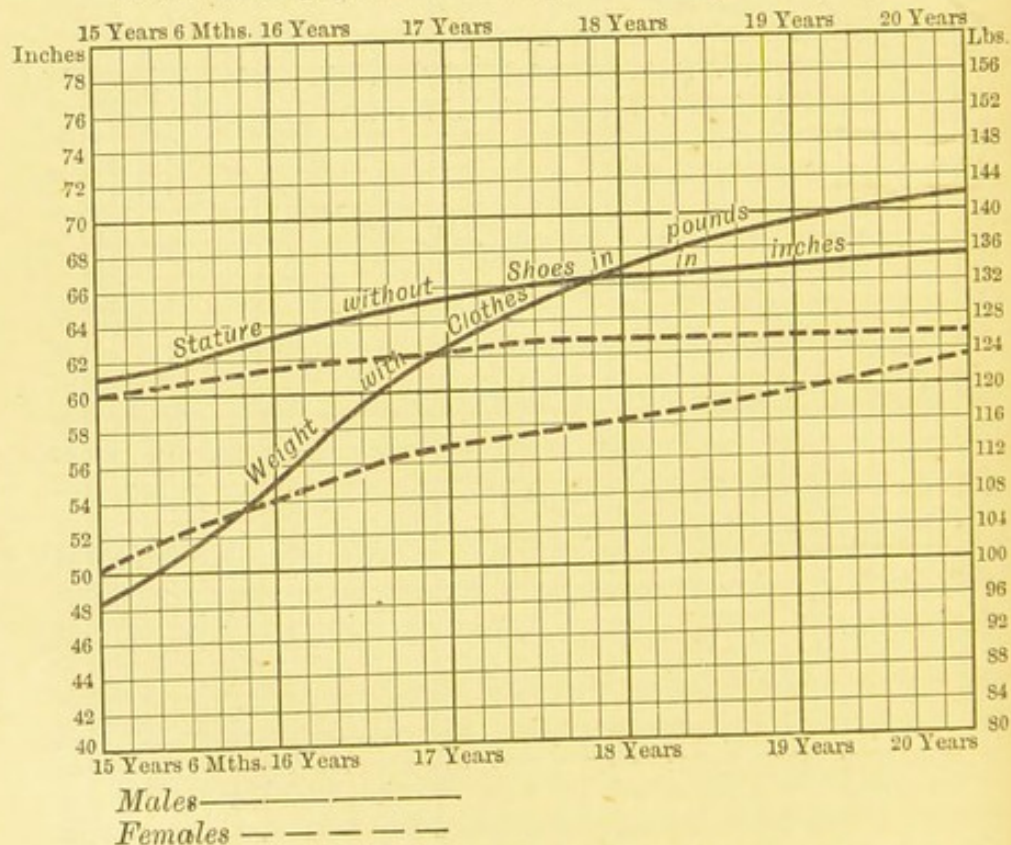
as well as showing whether proper care is being devoted to the physical well-being of the child.

Mr. Francis Galton * has very carefully prepared a "Life-History Album," suitable for use in families, the only objection to it being that the requirements are unfortunately likely to prove too complicated to ensure its complete usefulness.

In this album, charts are furnished on which to record the stature and weight; and these, with kind permission, are given as examples on pp. 93, 94.

CHART II.—ON WHICH TO RECORD THE STATURE AND WEIGHT FROM 15 TO 20 YEARS OF AGE.

The printed curves show the average Stature and Weight of the Male and Female population during the above period of life.



In referring to the advantages resulting from these measurements, Mr. Galton points out that only in this

* Macmillan & Co.

way can certain data of great importance be obtained. For example, we have no knowledge, he says, of the degree in which the promises of youth are realized in after-life. How far may the vigour, strength, keenness of senses, and superiority in other respects at the various ages of childhood and boyhood, be accepted as true indications of the future efficiency of the man? The answer to this question has a direct bearing on the value of examinations at different ages as a mode of selecting capable candidates for employment.

MEDICAL REPORT.

The medical officer should be further aided by as much information as can be given of the boy's past life and family history; whereas, as a rule, a boy is deposited at school without any particulars whatever being furnished on these points, so that the medical officer is deficient in information essential for the boy's treatment. This is not just to the boy or to his medical attendant. Reticence on the part of a parent in a matter of such moment is most unjustifiable. For example, many a boy is sent to school with a decided history of consumption (of which perhaps a parent has died), and yet the fact is not communicated. Moreover, it has sometimes happened that, in the report completed by the parent, the inquiry relating to consumption has remained unanswered, when a candid confession of the possibility of inherent weakness would have been of unspeakable benefit to the boy, by enabling the medical officer to adopt suitable measures.

To enable parents to assist the school doctor, a *Medical Report*, signed by a parent or guardian, should accompany every boy on leaving home for school, and this should contain a reasonably complete personal and family history. The appended form may serve as a guide.

MEDICAL REPORT.

*To be sent to the House-Master on the Admission of a "New Boy,"
for the guidance of the Medical Officer.*

1. Name.....
2. Date of birth.....
3. Where born.....
4. Where resided.....

(These two latter particulars are sometimes very important: *e.g.*, whether a boy has come from a hot or malarial climate.)

5. Has he any ailment, or defect, rendering "school games," or any of them, undesirable?.....

(The answer should state every known *personal* defect: *e.g.*, Rupture, Heart Disease.)

6. Is there any peculiarity in health or constitution which should be mentioned?.....

(The reply should express every known *family* defect likely to influence the boy: *e.g.* Consumption, Rheumatism, Gout.)

7. When was he last vaccinated?..... Was it successful?.....

8. Has he had Small-pox?.....

„ „ Chicken-pox?.....

„ „ Measles?.....

„ „ Epidemic Roseola?.....

(Often called Rose Rash or German Measles.)

„ „ Scarlatina?.....

„ „ Mumps?.....

„ „ Whooping-cough?.....

(If "Yes," add the date.)

9. What other illnesses has he had?.....
(*e.g.* Pleurisy.)

Signature of Parent or Guardian.....

Date.....

VACCINATION.

The subject of vaccination is one of great moment to every individual, especially to the young; for the protection it affords against small-pox is indisputable, and a parent has no right to deny this protection to his child, thereby allowing it to die, or to be scarred for life by this terrible disease. Now that calf vaccine can be so easily obtained, all legitimate objection to vaccination is removed.

We must not expect too much from vaccination, but must bear in mind that the protective effect of *one* vaccination is limited in duration, and does not endure for the whole of life. For instance, of 734 nurses and attendants employed by the Metropolitan Asylums Board, 79 had had small-pox before being engaged, and not one took small-pox. Of the remaining 655, 645 had been vaccinated in infancy and re-vaccinated on appointment, and not one fell with the disease. Of the remaining ten, all had been vaccinated in infancy, but none had been re-vaccinated, and every one contracted small-pox during their term of office.

Mr. Marson has shown that the proportion of deaths from small-pox amongst those unvaccinated is 35.5 per cent.; whereas, after successful *primary* vaccination, it is, for those who have *four* good marks, only .75.

Dr. Herbert Goude has shown, from an unbroken record of forty-eight years at the Small-pox Hospital, where every nurse and servant is required to be re-vaccinated when engaged, and prior to entry upon duty, that not one ever contracted small-pox even in a modified form. During this period, however, an assistant gardener was engaged who refused to be re-vaccinated, caught small-pox, and died.

In analyzing the epidemic in Sheffield, in 1891-92, Dr. Thresh, the medical officer of health for Essex, thus summarized the figures:—

“Number of persons attacked: Out of every 1000 unvaccinated children (under ten years of age) 101 were attacked. Out of every 1000 vaccinated children, five only were attacked. Unvaccinated children are, therefore, twenty times more liable to attack than vaccinated. Out of every 1000 unvaccinated persons (over ten years of age), ninety-four were attacked. Out of every 1000 vaccinated, only nineteen were attacked. Over ten years of age, therefore, unvaccinated persons are five times more liable to attack. Death-rate amongst those attacked: Out of every 100 unvaccinated children attacked, forty-four died. Out of every 100 vaccinated children attacked, only two died. A child under ten, who has not been vaccinated, therefore, is not only twenty times more liable to be attacked, but the attack is twenty-two times more likely to end fatally. The danger of an unvaccinated child dying from small-pox during an epidemic is more than 440 times as great as that of a vaccinated child. Out of every 100 unvaccinated persons over ten years of age attacked, fifty-four died. Out of every 100 vaccinated over ten years of age attacked, only five died. Therefore, unvaccinated persons over ten years of age are not only five times more liable to attack by small-pox, but eleven times more likely to die if attacked. The danger of such a person, if unvaccinated, dying from small-pox during an epidemic is fifty-five times greater than that of a vaccinated person. To sum up, during the prevalence of small-pox an unvaccinated child under ten years of age is 440 times more likely to die of the disease than a vaccinated child. An unvaccinated person over ten years of age is fifty-five times more likely to die than a vaccinated person.”

In the debate in the House of Commons in 1893, on compulsory vaccination, Sir Walter Foster said:—"I would ask the attention of the House to a few figures in connection with this contention. We have means of obtaining a fair and approximate knowledge of the ravages of small-pox before vaccination was invented and practised. It is calculated that before the use of vaccine, small-pox killed in London about 3000 per 1,000,000 of living people, and the rate had fallen between 1872 and 1890 to 178 per 1,000,000. In England generally, putting the estimate much lower than many statisticians put it, it is calculated that the deaths from small-pox were 2000 per 1,000,000 before the days of vaccination, whilst between 1872 to 1890 they had fallen to 90 per 1,000,000. These comparisons are open to the objection that the death-rate before 1838, when the registration of deaths was taken up, may be wrong. I will, therefore, go to a country where there has been registration of deaths both before and after vaccination came into use, namely, Sweden. Registration has been in force in Sweden since 1774. In the prevaccination days the Swedish death-rate from small-pox was 2008 per 1,000,000 of living persons, whilst since vaccination the average during the last seventy years has been 173 per 1,000,000. In Copenhagen, where they have known the number of the population and the deaths from small-pox since 1750, the death-rate from small-pox was 3567 per 1,000,000 before vaccination was used, whilst during the last seventy-three years it has been on the average 130 per 1,000,000. You may read these figures in another fashion. In London one person dies now for every seventeen who died before the use of vaccination; in England one dies for every twenty-two who died formerly, in Sweden one for every twelve, and in Copenhagen one for every twenty-seven. The figures I have also refer

to epidemics of small-pox at different periods. Epidemics have been defined by a very high medical authority as a condition of things in which ten per cent. of all the deaths are due to a particular disease. Taking that as the definition, during forty-eight years of the seventeenth century there were ten such epidemics; in the eighteenth century there were thirty-two such epidemics; whilst in the nineteenth century there has not been one. I think that is a complete answer to the allegations respecting the epidemic diffusion of small-pox in the present day. The decline in the death-rate has had a curious relation to the progress of vaccination. The more completely vaccination has been enforced, the greater has been the decline in the death-rate. According to the Registrar-General's returns, during the years 1847-53, when vaccination was merely permissive, the total number of deaths in England from small-pox was 305 per 1,000,000 of living persons. During the next series of years, from 1854 to 1871, when vaccination was compulsory but not enforced by penalties, the death-rate fell to 223 per 1,000,000. Between 1871 and 1891, when the compulsory system was enforced by penalties, the death-rate fell to 89 per 1,000,000. Thus, as I have said, there is a progressive decline of small-pox as vaccination is more and more enforced."

That re-vaccination is a necessity in the young between the ages of twelve and sixteen years cannot be doubted. The following table of cases which I have re-vaccinated (and of which I have kept a record), between those ages during the last nineteen years bears sufficient testimony to its necessity, by showing that no case of small-pox occurred, although a severe epidemic raged in the town for a season.

STATISTICS OF RE-VACCINATION.

Nature of Vesicles produced.	Number of Cases.	Per Cent.
Good vesicles	914	65·10
Poor vesicles	440	31·20
No result: all these cases were re-vac- cinated a second time without effect }	53	3·70
Total number of cases	1407	100·0

Among these cases there were some patients who showed such splendid marks from the primary vaccination of infancy, that I thought it almost absurd to anticipate any result from re-vaccination; I found, on the contrary, that they often produced the finest vesicles. Between the highest in the "good vesicle series," and the lowest in the "poor vesicle series," there was a marked difference—the highest being as good as the finest vesicles in primary vaccination, the lowest being a diffused redness simply, without an actual vesicle, but lasting, red and sore, for about ten days. One case had previously had small-pox five years before, and was susceptible when re-vaccinated, producing poor vesicles only.

This evidence shows the importance of re-vaccination in schools; every boy, therefore, above thirteen years of age should be *vaccinated* prior to his entry, or immediately afterwards, both for his own protection and the safety of the school. And if a parent object to the vaccination being performed at school, it should at once be done at home. It would, perhaps, be even a better plan to print a notice on the school prospectus to this effect:—"Every 'new boy' will be re-vaccinated on his entrance, unless he has previously been suc-

cessfully re-vaccinated." It ought to be regarded as a disgrace to have an instance of small-pox at school.

The inference from the present progress of medical science is, that infectious diseases other than small-pox will ultimately be prevented by similar measures. When this period arrives the gain to schools, and to the country at large, will be incalculable; not only will this advantage be in favour of the boy's permanent health, but other beneficial results will follow. For the pupil will not waste the time that should be devoted to work; the masters will not be hampered by having pupils in their forms who have lagged behind the rest, and thus become a hindrance and anxiety to all; and parents will be saved from paying highly for a twelve weeks' education, one half of which has been wasted through infectious illness.

In the *Lancet* of November 21, 1891, Dr. Julius Althaus, in an address on the pathology of influenza, expresses the hope that the micro-organism of that disease may soon be discovered, as well as the antitoxine capable of neutralizing the virus. Until this auspicious event occurs, he recommends that, on the advent of another epidemic of influenza, *wholesale re-vaccination of the population with animal lymph* should be adopted, which, together with Dr. Goldschmidt, he advocates as an efficient protective. Greatly as effective re-vaccination is advisable for all, I am unable to endorse his advocacy of this course for the reason that, although since 1875 it has been the custom to re-vaccinate all boys on entering Rugby School, many of them, during the epidemics of influenza between 1889 and 1893, developed the illness, although they had been quite recently re-vaccinated.

VI.

THE MASTER'S BOARDING-HOUSE.

IN private schools the boys all live together in one house, which is dwelling-house and school-house combined.

In some of the great public schools a large proportion of the boys live *en masse* in the main building, which is supplemented, as the school grows, by boarding-houses. This massing of boys together by the hundred too closely resembles barrack-life, and is not to be commended as a feature in the administration of a school.

But in most of the public schools, the boys live with different masters in separate houses, and meet together at other times—at chapel, at school, and in the playground; though in some schools there is a common dining-hall, where all meet at dinner, or even at every meal—neither being a plan to be recommended except under conditions I shall presently name.

These boarding-houses accordingly are a distinct element in a large school, and vary much in different schools, and even in the same school. A parent, therefore, in choosing the most suitable circumstances for the education of his boy should not only carefully select the school, but also the boarding-house and boarding-house master.

THE MATRON.

When a house-master has succeeded to a house, his first thought should be to set the house, before its occupation, in efficient sanitary order during the vacation.

His next consideration, and one of great importance, should be to find a suitable *matron*; for on this choice most of the efficient working of the house will depend, and much also of the happiness and welfare of the boys under his care.

I have known a matron, simply by her personal character, and the absence of fear or favour in her conduct, maintain a remarkable control over a large house, and beneficially influence the boys individually in an extraordinary degree; for boys will open their hearts to the matron when they will refrain from doing so to any other individual—schoolfellow, master, or master's wife—at school.

There are men without number in the world who will confess that they owed much of their happiness at school to the matron, in whom they found a sympathizing friend, and to whom they could tell their school troubles—trivial, perhaps, to men, but real, and of no small burden sometimes, to boys, especially “new boys,” who have been tenderly cared for at home, and now miss the individual attention to which they have been accustomed.

On the other hand, I have known matrons appointed to this important post who were quite unsuited. If the masters, in many cases, had endeavoured to find the most unfit woman, they could not have been more successful in their quest.

A comparatively young matron has much more sympathy with boys, and more influence over them than an older one, who is apt to have crotchets, and be irritable even under slight provocation—though I am bound to confess that one of the best, if not *the* best matron I ever knew, was, comparatively, an elderly woman.

STUDIES.

When boys are not in school, or in the playground, it is imperative that there should be some place to which they can resort, and arrangements of various kinds are made in all schools for this purpose.

In private schools the boys generally have no separate "studies," but live and work together in a common school-room. This is an excellent plan, and, provided the school-room be sufficiently capacious, and well ventilated, a very healthy one. For small boys it is the best arrangement.

In some of our public schools a common-room is provided for the younger boys, while the elder ones have "studies" to themselves, and a room, called the sixth-form or fifth-form room, in which they can meet together. But in most of our public schools the boarding-houses are provided with "studies" in one form or other for all the boys. These are of two kinds:—

1. The "study" pure and simple is a small room, The Study which a boy has to himself, or shares with a brother or a school-fellow. These are excellent, cosy little rooms, where a boy can work well, either alone or with his fellow; and if a master be discriminating in choosing the boys who are to occupy the same study, being guided chiefly by their *characters*, no harm results. In such cases the boy feels, amidst all the publicity of school life, that he has some small place in the school-world that he can call his own, where he can be sometimes alone; nor are these studies too private.

They often might be larger, though even the traditional 6 ft. \times 4 ft. study I do not condemn, since a boy rarely occupies it long enough to get harm through

insufficiency of air ; even if he occupy it for any length of time, the door is usually open all the year round, while in summer the window is often also open, and in winter a large fire is kept up. In some cases, however, fire-places are not provided, but the studies are warmed by hot-water pipes, or by hot-air flues, or simply by a fire in the passage. With few exceptions, these studies might be, and should be, better ventilated, and with some practical recognition of sanitary science. If fires in studies were abolished, and the warming were effected by hot-air flues (having the warm fresh air forced in by fans worked by steam, or gas-engines, and the foul air removed by extraction flues) ; or by hot-water pipes over which fresh air from the outside continually passed, endless expense would be saved, and a continuous supply of warm fresh air would be supplied to each room.

An objection, however—worthy of some consideration—against the abolition of study fires is, that boys would be thus deprived of much real happiness in their small domestic cooking arrangements—a privation to be avoided as much as possible, especially during the long winter evenings, as any act affording occupation and pleasure at such times should be encouraged.

That these studies, however, do at times occasion harm under the present system is beyond a doubt. For example, the study becomes over-heated by the hot-water pipes, which are not always easy to regulate ; still more by the want of regulation of the heat forced in by hot-air flues ; or a boy often makes up so huge a fire that the heat prevents his remaining in the closed room, and he consequently either opens the door and window and sits in a direct draught, or goes out-of-doors to cool himself. I have known cases in which a severe illness has followed an acute chill caught in this way.

In some schools, while all boys have these studies, the

smaller boys are not allowed to use them in the evening, but are assembled together in a common room, to prepare their work for the morning, in the presence of a master. This plan is excellent for the boys, though a tax, perhaps, on the masters; for more and better work is done, and there is less scope for that rowdyism and bullying in the studies and passages during the long winter evenings which used to prevail to a grave extent, in days gone by.

It is a question of the first importance whether the *whole* of the work of every boy at school except the seniors should not be prepared under the immediate superintendence of a master, instead of being left to such time and mode of preparation as the boy himself may decide. The former plan alone will ensure honesty in work and the abolition of "cribs," and will directly conduce to mental and moral health and happiness, and that essential in education—*thoroughness*.

In furnishing the study, a carpet should be prohibited; for the sweeping of carpets is undoubtedly a source of mischief in respect of the dust (with its germs of disease) which is raised and swallowed. The use of varnished boards, or a covering of corticine, is much more healthy. Study Furniture.

Another feature in the furnishing of studies calls for incidental remark; the evidence, namely, of effeminacy, which is imprinted on many of them. Frequently the furniture, the hangings, the china, and the photographs, belie the notion that the rooms are those of manly public-school boys; they often rather suggest the abode of some æsthetic young lady recluse!

2. Another arrangement combines the study and sleeping-room in one room, the door of which opens out of a passage which leads to several similar rooms; it forms a day and night room (Fig. 1). Each boy, The Study and Sleeping-room combined.

usually, has one to himself; sometimes brothers share a larger one between them, but not invariably so. Some years ago, when I was being shown over one of our most important public schools, before writing the first edition of this book, I came upon these rooms with two beds to hold two boys. When I remonstrated against the system, I was informed that the beds were only occupied by two boys when they were brothers. Some year or two afterwards, I became acquainted with the case of a little boy in that school who was utterly miserable and heart-broken when he arrived home for the holidays. For some weeks nothing could be elicited, until at last, in his distress, and to assuage the manifested anxiety of his parents, he divulged the ghastly truth. He had been placed in one of these rooms, which resemble the continental bedrooms with their two little beds for husband and wife, and there—a pure lad—he had been doomed to undergo heartrending misery for thirteen weeks with an impure big boy! Most emphatically then I condemn this system as distinctly conducing, without the need of my entering into further details, to a flagrant species of immorality and depravation of character.

The size of the single studies varies; but the usual area is about $8 \times 8 \times 10 = 640$ cubic feet. I have seen them larger, and smaller. I have also seen them so dark as to resemble a prisoner's cell rather than the abodes of boys who must occupy them night and day during eight months in the year, both in illness and in health. In such a pen, with inadequate air-space, breathing the same air day and night, with insufficient light and ventilation, and with every facility for secret vice, the boy is expected to thrive mentally, morally, and physically!

I regard this arrangement as most unhealthy, unwise,

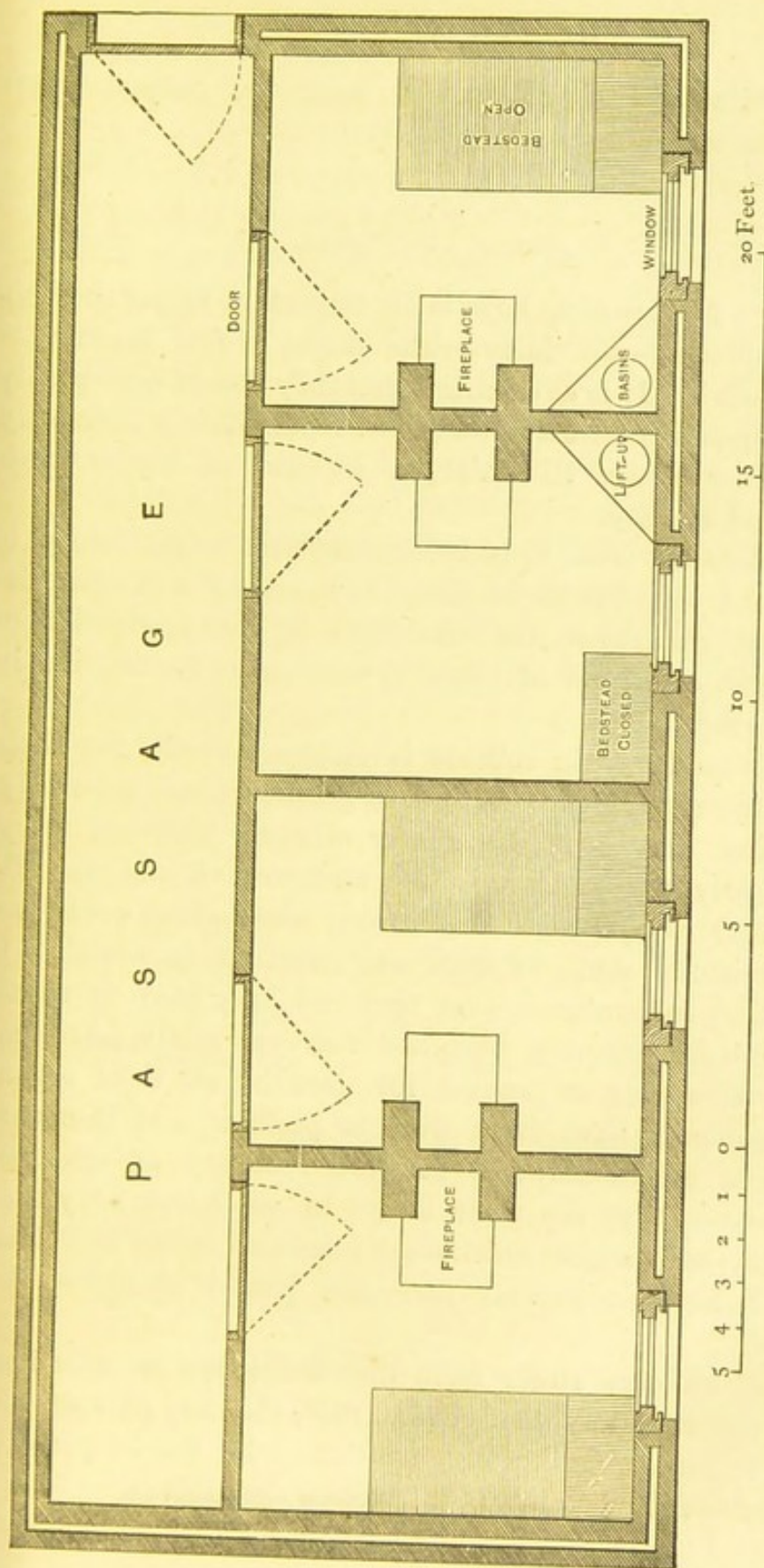


FIG. 1.—THE STUDY AND SLEEPING-ROOM.

and unjust. I dwell further upon the subject when treating on Cubicles, p. 113.

SLEEP AT SCHOOL.

Sleep for growing boys is an important factor in their development—especially while doing a full amount of brain work. It is as essential that they should have plenty of sleep as it is to have sufficient food, since a deficiency in either causes ill-health, or a want of vigour with lowered vitality.

It does not seem to be recognized that to stint sleep, is to stunt the growth of body and brain; and that the highest realization of school-life is the production of the best condition of brain development for service in after years.

The tendency in schools is rather towards too little than too much sleep; in fact, in public schools generally, I think that boys are rarely allowed sufficient sleep, especially the younger ones; and were it not for the holidays every twelve or thirteen weeks, they could not do their full share of work and continue in health. It must be remembered that they not only have to repair waste—the ordinary wear and tear—as adults have, but they have also to provide for growth; all their organs consequently have extra work to perform, and therefore require additional rest for the recovery of strength. Moreover, boys are more active in mind and body than adults, and hence results an increased wear and tear, which needs a further increased period of repose for repair.

All scholars suffer from this deficiency more or less, and unfortunately, as a general rule, the only persons who fail to recognize the fact, are those who should perceive it first—the masters and mistresses themselves.

Parents are only too cognizant of the fact during the first few days of the vacation, and are apt to think that their children are becoming sluggards; while in reality they are only making up lost time.

Girls also suffer considerably from this cause during their early progress into womanhood, when they are growing rapidly, developing in their proportions, and establishing new functions; they need then a very large amount of bodily and mental rest and sleep, if strong bodies and good brains are to be produced.

I remark further, that insufficient sleep for growing children practically amounts to overwork; and overwork renders the child an easy prey to disease.

The necessity of adequate sleep at the school age is indisputable, and teachers should not only permit, but vigilantly enforce it, by prohibiting sitting up at night after hours, or rising early in the morning for completion of work at the expense of sleep.

THE AMOUNT OF SLEEP REQUIRED AT VARIOUS SCHOOL AGES.

Age.	Number of hours.	Time.
Under 10 years of age ...	11 hours	8 p.m. to 7 a.m.
" 13 " ...	10½ "	8.30 " 7 "
" 15 " ...	10 "	9 " 7 "
" 17 " ...	9½ "	9.30 " 7 "
" 19 " ...	9 "	10 " 7 "

From the beginning of November to the end of February the time should be extended to 7.30 a.m.

For boys *under thirteen* years of age breakfast should take place at 7.45 a.m., followed by play from 8.15, and school at 9 a.m.

Under existing arrangements, the eight and a half or

nine hours usually permitted, but never obtained, for boys *above thirteen* (*i.e.* at the public-school age), are not sufficient, considering this active period of growth, and the amount of mental and bodily exercise they undergo. In bed at 10 p.m., which means sleep not much before 11 p.m., and called at 6.30 a.m. for chapel at 7 or 7.30 a.m., is, I believe, the rule in most public schools. With only this amount of sleep some boys seem weary, and show signs of insufficient rest. Moreover, all the organs of the child at this stage are immature, and require special rest and care for their natural development.

During cold weather, again, and while the body is undergoing rapid growth, a greater amount of sleep is necessary.

There is one error which should be rectified in individual cases as need arises. I have constantly noticed

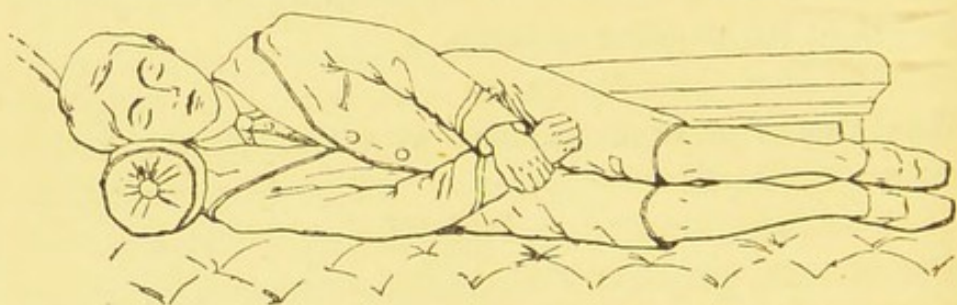


FIG. 2.—THE POSITION OF THE HEAD FOR SLEEP.

that children are quite satisfied with the preceding amount of sleep until the advent of puberty. For some time before and after that date, perhaps a year—when the growth is enormous, and the development of new organs entails a severe stress upon the system—this amount is entirely insufficient. It is the failure to recognize this fact that produces evil results, especially in the case of girls, whose growth is more rapid and less prolonged. For much more sleep is required for growth than for functional activity of the brain, and much more

for the nerve-centres of animal life than for those of intellectual life.

I lay great stress on sufficiency of sleep; since it is impossible that healthy brain tissue should be formed, if rest, adequate for both growth and repair, be not provided.

Another point connected with sleep, especially as concerns the young and growing, is that the head only should be placed on the pillow (Fig. 2). Sleep is better obtained when the head lies low, and in a line with the spine, the pillow fitting, when the sleeper is lying on his side, into the space between the head and shoulder; by this means the shoulders are prevented from being rounded and the spine curved in consequence of the prolonged unnatural position.

THE PLACE FOR SLEEP AT SCHOOL.

I hold very decidedly that the sleeping place at schools should be for *sleep only*, and that the bedrooms should be always closed to boys by day. This is essential for cleanliness and ventilation, and is thus beneficial for the occupants at night. Nothing varies so much in our schools as the sleeping accommodation. In some schools, the bedrooms are almost entirely satisfactory; in others, they are absolutely unfit for occupation. I have no hesitation in saying that in many schools a "first-class fare" is charged for a "third-class accommodation." The importance of this question is obvious from the fact that the physical and moral health of the scholars very largely depends upon the nature of the sleeping accommodation provided.

Of all school arrangements cubicles are undoubtedly Cubicles.
the worst. I cannot conceive the slightest rational

argument, or experimental fact, in their favour, whether we view them in relation to physical, or mental, or moral health.

Cubicle and Study combined.

I have already described the *Cubicle and Study combined* on p. 108 (Fig. 1).

Cubicles in Large Dormitories.

In *Cubicles in Large Dormitories* we have a very large room, partitioned off into small rooms, or cubicles (Fig. 3), on each side of a passage down the centre of

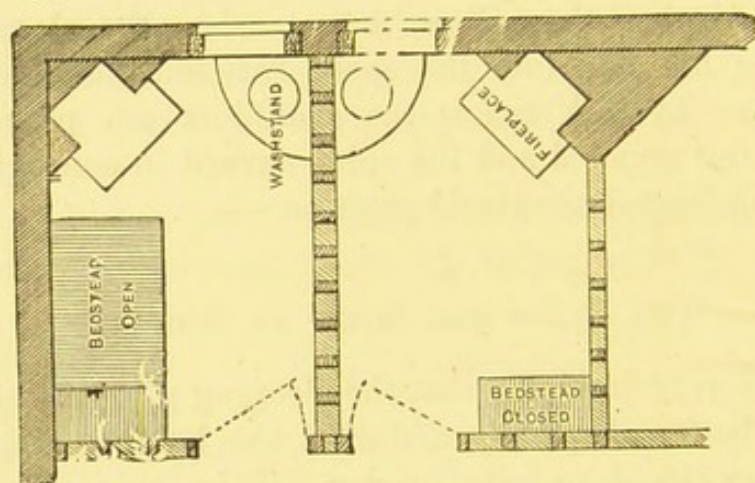


FIG. 3.—SPECIMENS OF CUBICLES IN LARGE DORMITORIES.

the room, into which the door of every cubicle opens (Fig. 4, p. 115).

The main room itself, about 12 feet high, contains from 20 to 40 cubicles, each being about 8 to 9 feet square, and separated from the adjoining one by a wooden partition (Fig. 5), about 8 feet high, and from the one on the opposite side by the passage, as shown in Fig. 4.

Above these partitions, and between them and the ceiling, is a height of 4 feet, and this space is common to all the cubicles in the room.

There is, therefore, a good supply of air for the day or the night, but a most insufficient supply for work by day, for candles or gas by night, and for sleep; for the

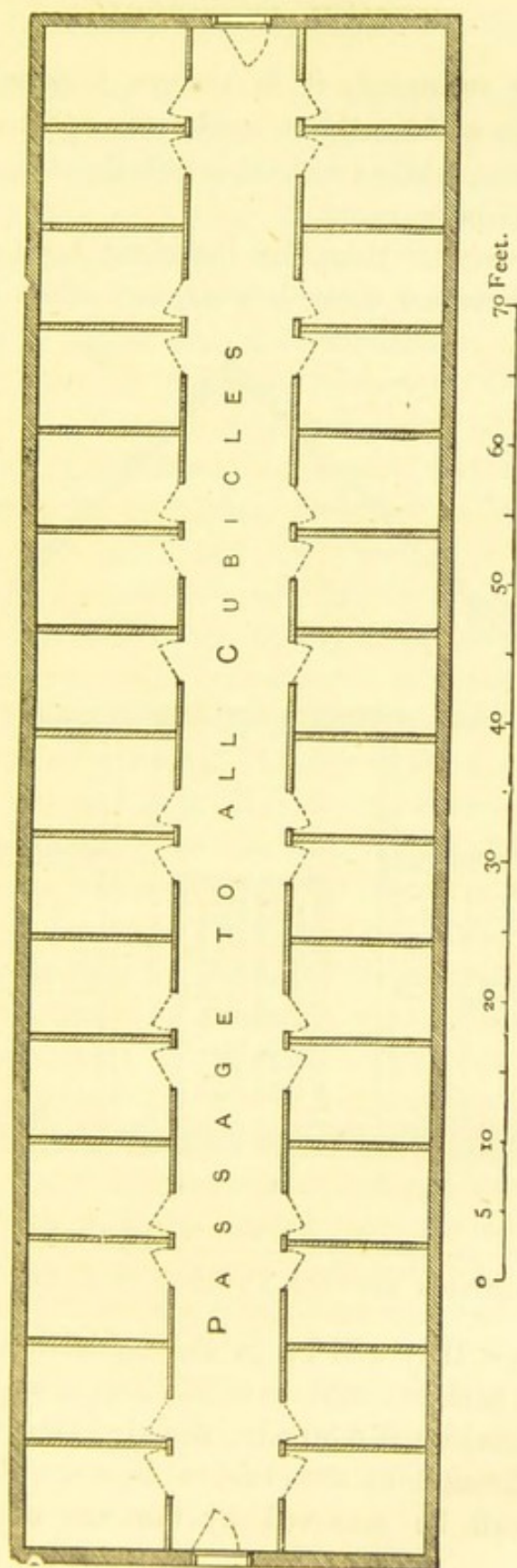


FIG. 4.—CUBICLES IN LARGE DORMITORIES.

rooms being occupied, it is always impossible to get windows open sufficiently to render the apartments sweet and wholesome, while artificial ventilation is not adequate unless the air be warmed.

Take the winter time, for instance: boys are in and out all day between their lessons, and when school and

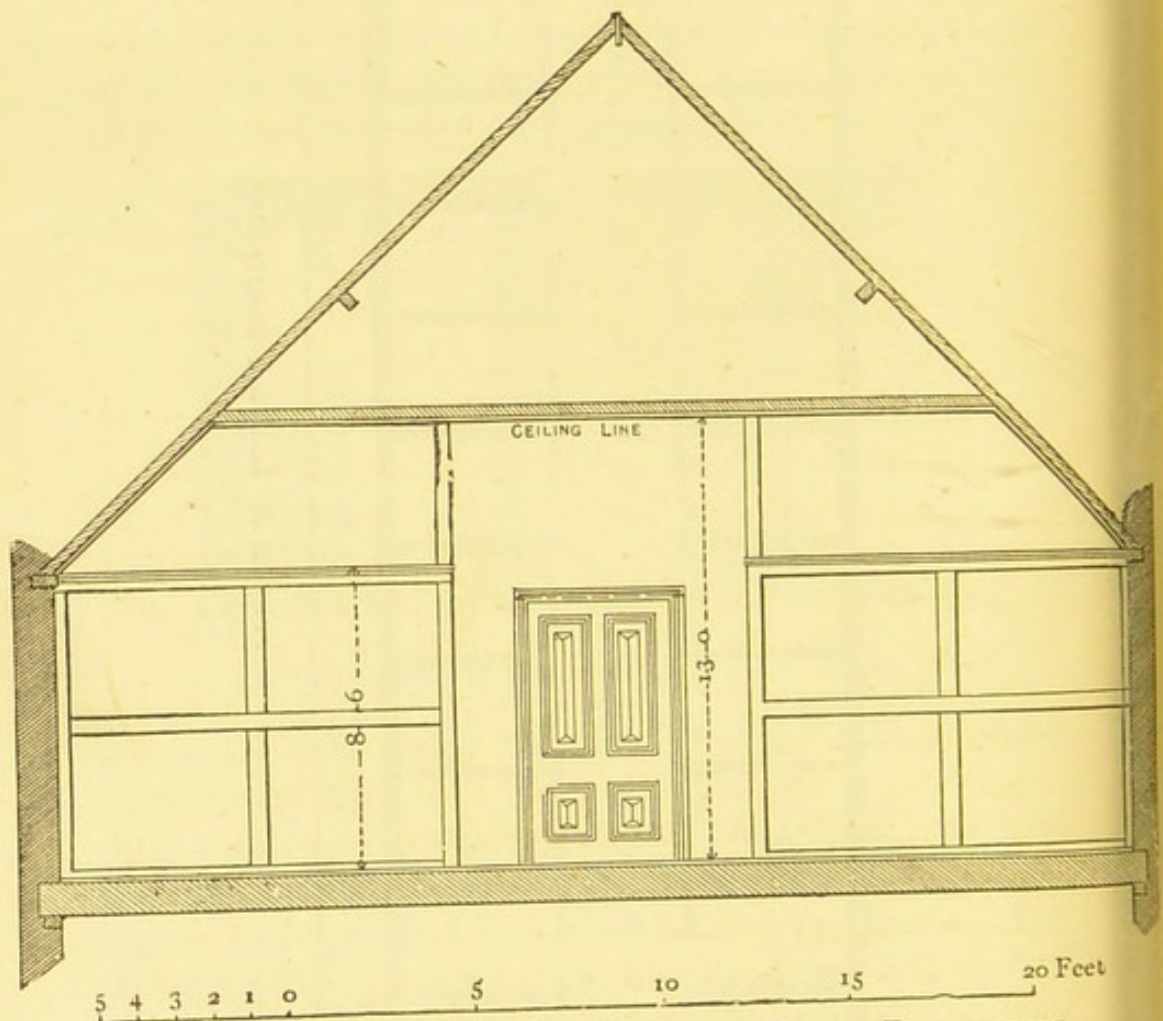


FIG. 5.—PARTITION BETWEEN CUBICLES IN LARGE DORMITORIES.

tea are over, they will be in the cubicles by 6.30 p.m.; there they remain (with candles, lamps, or gas burning until 10 p.m.) until 6.30 a.m., the air being very scantily changed throughout the twelve hours. *These* defects, however, can be removed by the use of the electric

incandescent lamps for lighting purposes; and the system of warmed air, pumped in by revolving fans, may be employed as a means of providing warmth and ventilation.

Moreover, the enclosing of the bed and bedding in a wardrobe immediately the room is vacated in the morning is filthy in the extreme; and the practice on the score of health is utterly indefensible.

The evil, too, of cubicles is serious from a moral point of view. The upholders of them, whose name is legion, deny their defects, and assert that boys keep to their own cubicles by night. Only let an honest inquiry be made on this point, and the result will often startle and shame! Indeed, the assertion is practically denied by the devices which are arranged in some schools to prevent communication between the cubicles.

These cubicles are also contrary to the needs of "human nature." Except in a few isolated cases, neither animal nor human being, likes to be, or is content to be, alone. A solitary animal confined in its shed pines and fails to thrive, while if set at liberty in a field it will endeavour to overcome, and frequently will succeed in overcoming, its barriers, in order to join its neighbours. The same tendency to gregariousness exists in human beings, especially in the young. Boys will not be confined in solitary cells, but will, day and night, seek each others' company, frequently with results to be deplored.

To sum up my objections to cubicles, I would state:—

1. That they militate against "*human nature*;" and such opposition is useless and injurious.
2. They allow full scope of action to a *bad boy* without detection.
3. They prevent, by their privacy, a boy who would control others for good, from exercising this power.
4. They allow boys to get together for immoral purposes, unseen and undetected.

5. Any boy, while in his cubicle, can, though unseen, call out an obscene remark which the whole room may hear while he remains undetected.

6. It is most unhealthy to live and sleep in the same room, as it can never be properly ventilated.

7. It is a filthy practice that a bed, immediately it is vacated, should be folded up in a cupboard, saturated with decomposing sweat.

8. It is subversive of cleanliness that boys should be in and out of their cubicles all day in muddy boots in wet weather, and then be compelled to sleep in the same room at night.

9. Where a boy is accustomed to study by day, there being no break in his work, he will continue to study at night when he ought to be asleep; and the pernicious habit of reading in bed is fostered to the curtailment of his necessary rest.

10. And finally, it is a well-known fact that cubicles, by the privacy they afford, encourage a boy's lazy habit of lying in bed until the last minute, so that no time remains for the cleanly duty of a good wash.

Against these objections there is not a single favourable point to be urged. It is a question for parents to decide whether cubicles shall be provided in schools. The law of demand and supply is absolute: if parents refuse to place boys where cubicles are in vogue, they will be abolished forthwith. It is, therefore, a parents', and not a school, question.

But for parents who are unable to approve of the *complete* openness of the large dormitory system, such as I am about to advocate and describe, I would recommend such an arrangement as I find already in force at a school in Cambridge, which ensures the openness I desire with the privacy which parents seek.

The drawing (Fig. 6), represents the arrangement to

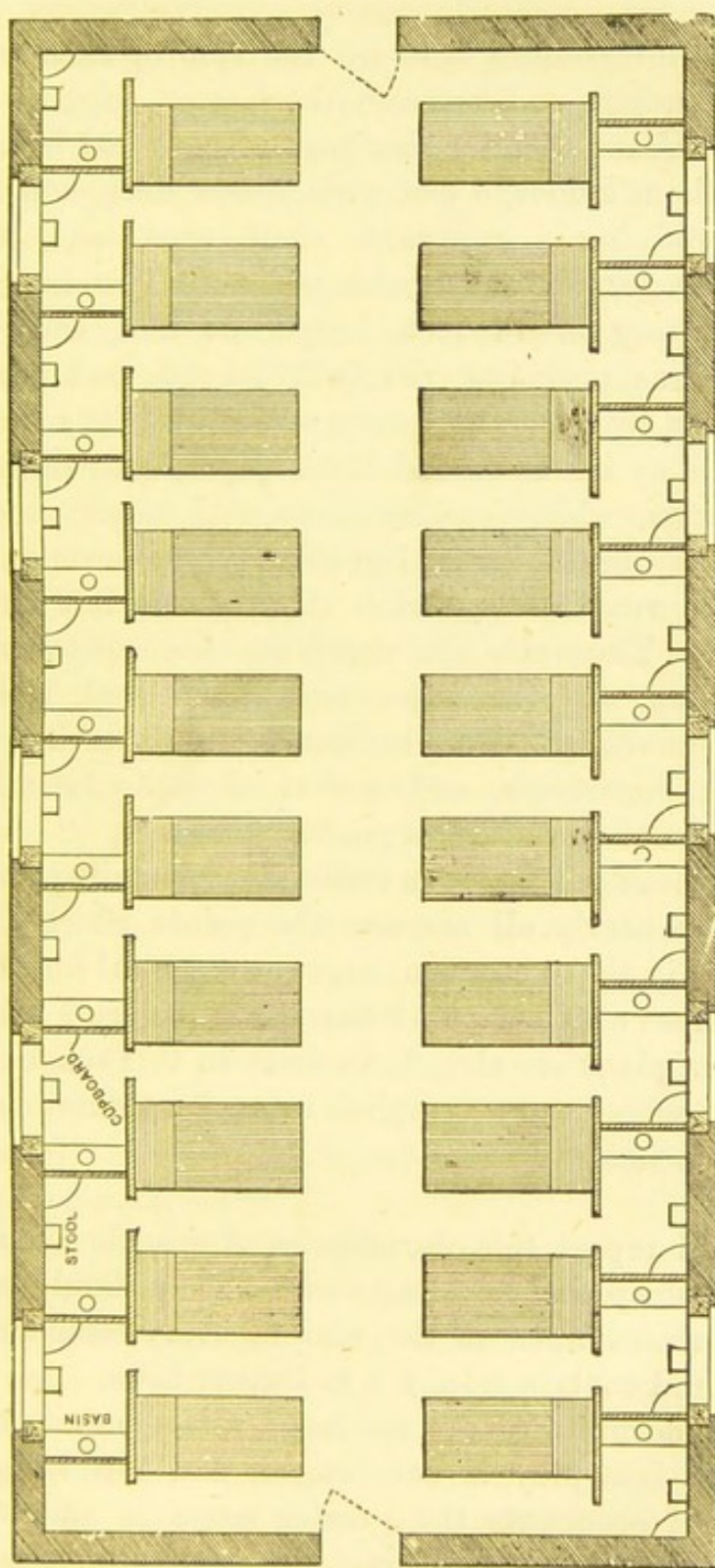


FIG. 6.—THE DORMITORY SYSTEM AT LEYS SCHOOL, CAMBRIDGE.

which I refer. Each dormitory contains twenty beds; the space intervening between the side of each bed is 2 feet 6 inches, and between the feet of opposite beds 4 feet 3 inches. Behind the head of each bed is a "recess" without a door, 5 feet wide, 3 feet deep, and 5 feet high, containing a cupboard, shelf, washstand, towel-rail, folding-stool, and looking-glass. The height of the dormitory is 14 feet, length 54 feet, and width 23 feet, thus providing nearly 870 cubic feet per boy. It is heated by hot-water pipes encircling the room, and ventilated by inlets behind these pipes, with outlets in the ceilings, which communicate with shafts opening outside the roof. It is lighted by gas-burners, over which are ventilators; and a small jet is left burning all night. The walls are match-boarded and varnished half-way up, and the upper part is coloured, which is renewed annually. The bedsteads are furnished with horsehair mattresses, and cotton sheets. In a room adjoining each dormitory a master sleeps.

I have been particular in stating these details carefully, because in nearly all respects the points which I have advocated in the subsequent pages as essential for healthy dormitories (which were written years before I saw this particular plan) are already in force in this school; and what one school can accomplish in sanitary details others are able to imitate.

Dormitories. I would repeat that dormitories at schools should be used for sleep, and for sleep only. They should consist of large rooms, open to the view of every occupant, and each should contain from ten to sixteen beds.

Where dormitories are too large, a tendency to roughness and bear-play is encouraged, and the larger the number of occupants the greater scope is afforded for the rule of a rough set of boys; the most suitable number

of occupants is twelve—a number not too few to permit undue privacy, and not too many to render the boys uncontrollable by the præpostors, while at the same time the influence of public opinion in the dormitory can, under such conditions, be wielded effectively.

I think Dr. Parkes has conclusively shown that every adult requires 800 cubic feet of breathing space, and that this space should be efficiently ventilated, in order to render the air sufficiently pure for purposes of respiration without draught. Size of
Dormitories

A pure air, fit for *inspiration*, consists, on the average, per 100 parts of atmospheric air, of oxygen 20·9 parts; nitrogen, 78·95; carbonic acid gas, ·04; some aqueous vapour, with traces of nitric acid, ammonia, and other hydrogen gases; while every *expiration* is charged with 4·0 per 1000 volumes of carbonic acid. Dr. Parkes showed that air containing more carbonic acid than ·6 per 1000 volumes is poisonous; though it is the foul organic matter and excess of moisture that are the most perceptible to the senses, and give to rooms their “stuffy” character.

It was found by Voit that during waking hours more carbonic acid in proportion is given off; while during sleep more oxygen is absorbed than carbonic acid eliminated. Hence the necessity of a plentiful supply of oxygen during sleep.

It was further shown by Brown-Séquard that the air exhaled by human beings, even in a healthy condition, contains a very powerful toxic element—a ptomaine—to which must be attributed the injurious effects produced by breathing a close atmosphere.

To prevent this deleterious result, 3000 cubic feet of fresh air are required to be replenished every hour. If this air be changed more frequently than three or four

times an hour by ventilation (unless it be warmed) an excessive draught is occasioned, which in our climate cannot comfortably be endured either by night or day.

Therefore, 800 cubic feet of space should be supplied for each boy.

Huxley says that a healthy man of eleven stone weight ought to have at least 800 cubic feet of well-ventilated space.

John Howard, the far-seeing philanthropist, wrote, a century ago:—"It may be asked of what size I would wish prisoners' solitary night rooms to be? I answer, 10 feet long, 10 feet high, and 8 feet wide;" *i.e.* 800 cubic feet. If such a space be requisite—as it undoubtedly is—for prisoners, how much more is it needed for growing girls and boys?

Masters will naturally retort, "But I have provided efficient ventilation." This may be so; but if cubic space per head be so restricted that, to ensure adequate ventilation, the cold air has to enter with a rush, no boy will endure it. Consequently all the ventilators are stopped by the boys with various articles of clothing, from a sock to a dressing-gown, according to the size of the ventilator.

In warm weather, of course, air may enter very rapidly without perceptible draught, and thus less cubic space may suffice; or if the in-coming air be artificially warmed, it can be admitted much more freely without the perception of draught, and in this case, again, a smaller cubic space will be sufficient; but, as a rule, for our climate, 800 cubic feet of space ought to be provided in the dormitories for each boy.

It must always be remembered that those who are growing cannot thrive without the purest air; they are peculiarly sensitive, like the young of all animals, to impure or pre-breathed air.

Many will urge that if 800 cubic feet of space be

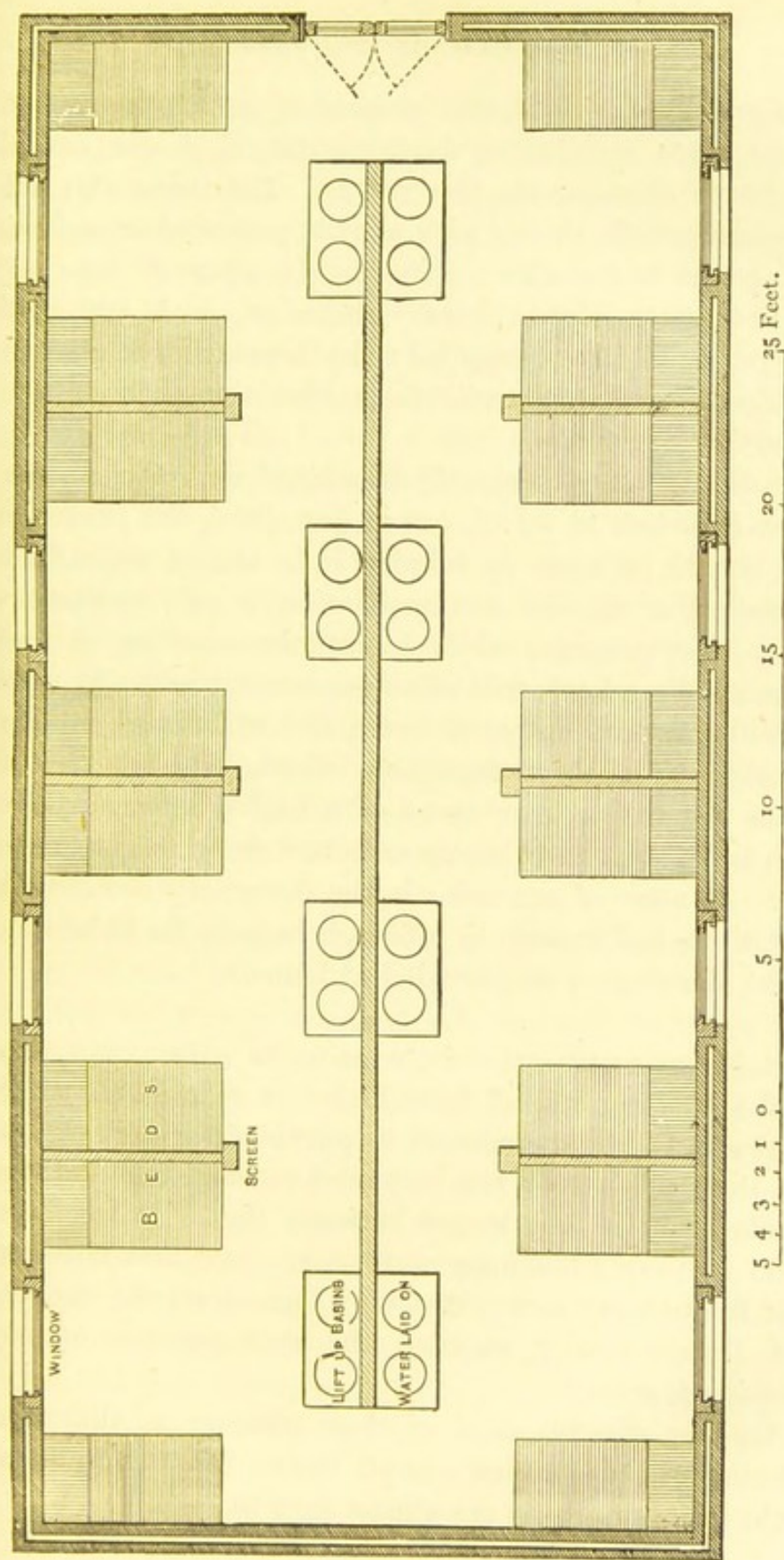


FIG. 7.—A RUGBY DORMITORY.

required by day, half that amount is sufficient for bedrooms, since respiration, during night, is slower, and all the tissue changes are less active. Let those who hold this comfortable theory seek a little *practical* experience, and enter a dormitory immediately after it has been vacated, after eight hours' occupation, with 400 cubic feet per head alone supplied: the impression made upon their sense of smell will from that time banish their *theoretical* notions.

In this treatise I am only concerned with the sleeping accommodation at *school*, but in describing the provisions that should be made in schools, it is almost superfluous to state that similar accommodation is as important at *home*. Yet parents, while sometimes exacting in their demands for school, will often be content with the worst possible accommodation at home, and will crowd children together to a most injurious extent. I have seen in *homes* the entire floor space of a night-nursery covered with bedsteads, with barely sufficient room to get to each bed. In some of our schools the dormitory accommodation, while bad enough in others, is happily far in advance of the sleeping-room provided at home.

Superficial
area of
Dormitories.

It is, on many grounds, a point of great importance in the construction of dormitories at schools, that sufficient superficial area should be provided for each scholar, and that beds should not be placed so close together that barely room is left to get between them. I have seen them so nearly touching each other—and this condition still frequently exists—that they formed almost one bed, and thus virtually entailed the evil practice of boys sleeping together.

Another disadvantage of close packing is, that if an infectious illness attack a pupil in one bed, the occupants of the adjoining beds are almost sure to be infected.

Superficial area, therefore, is of great consequence: and taking a school-bed at 3×6 feet, the superficial area should be quite four times that dimension, or 6×12 feet, and the room 12 feet high (Fig. 8). This gives 864 cubic feet per head, which will allow for the air displaced by the furniture of the room and the body of the boy, and yet provide the full complement of 800 cubic feet per head. A friend of mine has increased the distance between the *breath* of each boy, so as to minimize infection, by placing the beds in the fashion shown in Fig. 8.

It is sometimes stated that boys do not require this amount of air, because they are not fully grown. I should, on the contrary, assert that a growing boy, in whom all changes are much more active than in an adult, needs even more air than an adult, since his respiration is more energetic, and his expired air, I believe, is more highly charged with carbonic acid gas than that of an adult, in consequence of the greater activity of the change of tissue.

In addition to the preceding reasons, I assert that the young throughout the animal creation are much more sensitive to impure air than adults; and in them, consequently, pre-breathed air is much more poisonous. In confirmation of this I find that, in his eighth report to the Privy Council, 1865, John Simon stated "that even healthy children, in proportion to their respective bodily weights, are about twice as powerful as adults in deteriorating the air which they breathe." Moreover, in a large school there are boys of every type of constitution and every degree of stamina, including many who are descended from a tubercular stock. Who can gainsay the vast difference it will make to an unfortunate boy of the latter class during the years of development, whether he have plenty of fresh and pure air, or be compelled

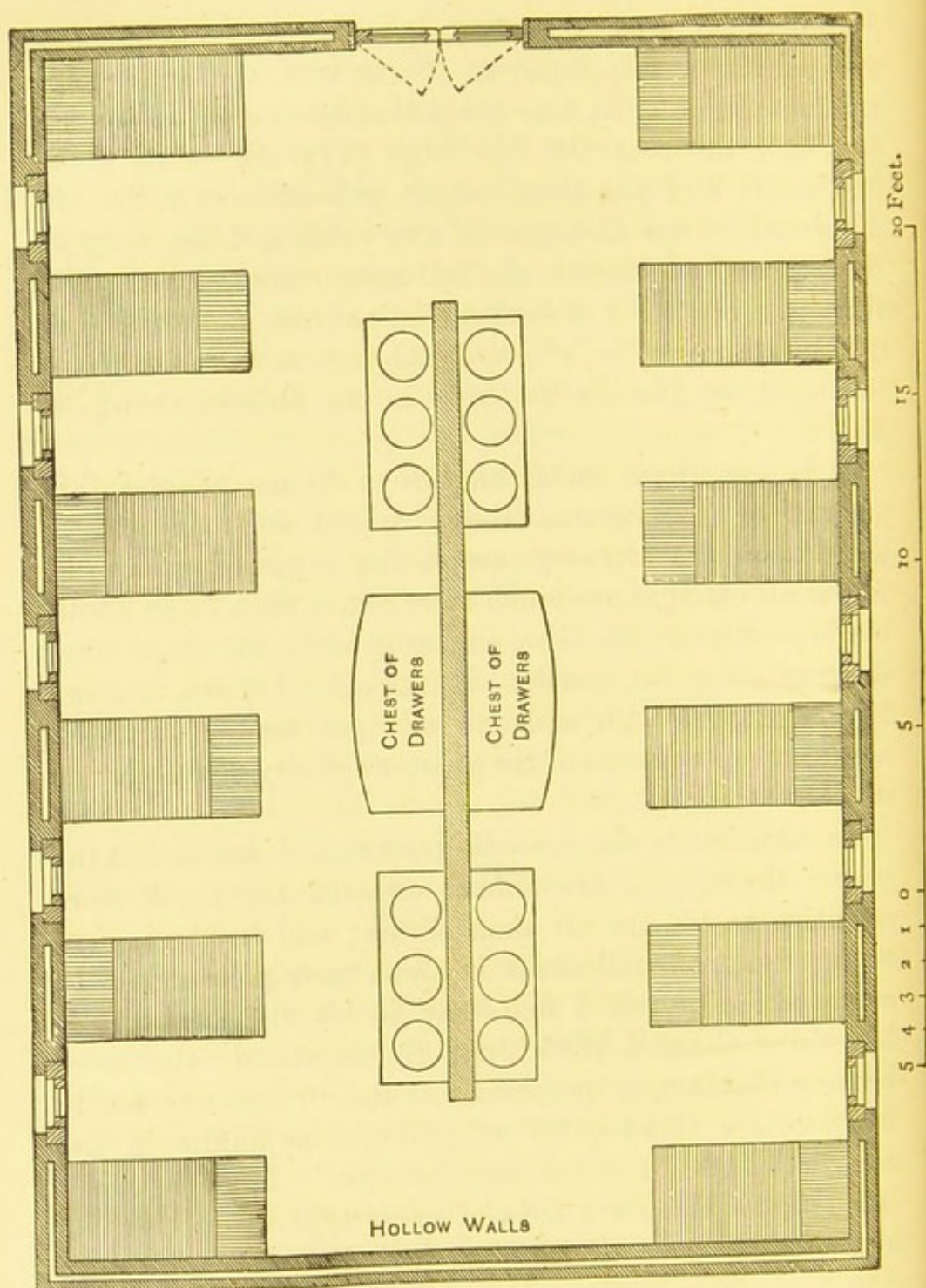


FIG. 8.—A MODEL DORMITORY.

to re-breathe the same air? It may make this difference to him—whether he become a tubercular or non-

tubercular individual, whether he die early or live to maturity.

With respect to the construction of dormitories, I would advise:—

Construction
of Dormi-
tories.

1. That the *walls* should be of the type termed "hollow walls" (Fig. 8). These are warmer in winter, and cooler in summer than walls built in the ordinary way; and if ventilating bricks be placed in the outside wall below, and in the inside wall near the upper part of the dormitory, there will be a continual current of fresh air entering the dormitory indirectly, and therefore without a rush.

A "damp course" of slate, or asphalte, should be included in the construction of every wall close to the level of the ground.

The walls should be either lined on the inside with varnished match-boarding, or plastered, and the surface of the plaster coloured with "silicate," or with paint, which should be washed annually, or, still better, every vacation.

2. That the *floor* should be so laid as to obtain a level and smooth surface, with an absence of cracks and bad joints; the joints should all be tongued; and the skirting-boards should be let into a groove in the boards of the floor, in order to prevent an accumulation of dirt. The space under the floors may become literally "middens," when the boards show a gap between them.

The whole floor should be stained and varnished, and thus be capable of being beeswaxed from time to time instead of being washed.

Parquet flooring and the prepared paraffined flooring are excellent; but carpets should never be used.

3. That the ceiling should be of plaster, whitewashed,

or, better still, of match-boards stained and varnished, which can be annually washed.

Sanitary
Condition of
Dormitories.

In speaking of the sanitary condition of dormitories, the following considerations must be studied:—

1. *Aspect*.—For the young and growing the sun is always invaluable, even in dormitories which may be unoccupied during the time the sun is on them.

The southern aspect is the best. A dormitory thus facing is far more healthy than one devoid of sun, for it is warmer and drier; the air is purer; the organic matter given off from the inmates is burnt up more completely; and mildew is unable to exist.

2. *Light*.—*Natural* light is obtained by means of windows, which should be ample in size, and comprise at least one-tenth of the floor area. They should reach the ceiling, so that when open at the top they may clear the upper stratum of air; but should not extend too low down, in order to be quite clear of the heads of the beds, and thus avoid draught there. They should be fully opened by day, and in winter closed before sunset. Where possible, they should be placed on opposite sides of the dormitories (Fig. 8).

Artificial light should be obtained by the electric light, or by "sun-light ventilators," or Benham's "ventilating globe" light; and if a light be slightly maintained all night, as is already done in some schools, the rooms will be more healthy in consequence of a better ventilation, and a check upon any evil practices meditated by bad boys will be secured.

3. *Ventilation* for dormitories should be obtained from the open chimney; or by means of ventilators over the doors into passages, which in their turn should be well ventilated without draught, by "conical brick" ventilators fitted into an outer wall; or by Tobin's

system; or by Bird's method (Fig. 17, p. 192), which consists of a two-inch piece of wood inserted under the lower edge of the window-frame to prevent it from quite closing, and allowing the admission of fresh air between the two sashes in the middle of the window. Of Bird's plan I cannot speak too highly, for it is efficient in action, cheap in cost, and within the reach of all. Or, further, by Boyle's air-pump ventilator; or Sheringham's and Arnott's valves.

4. *Warming*.—*Warmth* for dormitories can be supplied by the open fire, or, better, by hot-water pipes.

Warming and ventilation combined can be provided for dormitories by hot-air flues, the fresh air being forced in by a revolving fan; or by one of the patent ventilating grates; and if *warmth* be supplied to the dormitories, which is not usually required, it should be that which is produced by the means above mentioned, but combined with ventilation. Another efficient plan is to warm well the corridors, and passages. If, however, the school be placed in a cold and damp situation, the provision of warmth in the dormitories is a necessity; but no school should be built in such a situation.

At a school with which I am acquainted, a fire is lighted in each dormitory at 5 p.m. when the nights are very cold, and so regulated as to be just burning itself out when the boys go to bed. The rooms are thus made comfortable.

The plan of warming dormitories by freely lighting the gas for an hour or two in the evening before bedtime should never be followed; it is bad in the extreme; better have no warming than such warming, which burns up all the fresh air, and poisons the rest with deleterious gases. This plan, however, may be rightly used to assist in warming and airing the dormitories for the last few days of the vacation, before the boys return to school,

provided the windows be left open about an inch at the top.

5. *Washing Arrangements.*—These should be carefully devised, with a view to obtaining the use of plenty of water with as little trouble as possible. I have had Jennings's tip-up basins fixed in a new boarding-house, arranged as represented in Fig. 7; the pipes from them open below into the air-chamber of an Edinburgh trap. Each basin is supplied with a tap, so that an abundance of water is always secured.

Bedsteads. The bedsteads, which should be made of iron, having a wire mattress, are in most schools about 3×6 ft. in size, and, as I have already stated, there should be allotted to every boy four times this size of floor-space, so that an interval of upwards of three feet will separate each bed from the one adjoining, and between the beds on the opposite sides of the room a space of twelve feet will be interposed (Fig. 8).

If, however, partitions be used, as represented in the drawing (Fig. 7), the floor-space between each bed is very much increased, and if the partitions be not too large, an advantage is gained by the plan, since they do not serve as screens; though on the whole, all things considered, I think dormitories without partitions are preferable, as shown in the drawing (Fig. 8).

While the bedstead (3×6 ft.) is of sufficient size for the average boys in our public schools, yet, as some few boys exceed six feet in height, it is advisable to have a few bedsteads 6·6 ft. in length, so that no cramping or constraint may be produced in any case. This could easily be arranged by having the *corner* bedsteads in a dormitory of this size, and in this way they would not form an obstruction in the room.

It is always best in schools, whether for boys or girls, Bedding. that *mattresses* should be used to sleep on, a horsehair mattress being the best and cheapest.

The most appropriate *sheets* for those who are growing are cotton; they are preferable to linen, on account of their greater warmth. Besides being the most suitable generally, they are especially so for those who suffer from cold and moist feet; while for those who are liable to chilblains they are an essential to comfort.

It is better for sanitary as well as moral reasons that the warmth in bed should not be very great. All bed-clothing should be short of producing moisture of the skin. This condition is more cleanly and less debilitating, and conduces to a more vigorous feeling on rising in the morning. All the coverings to the bed should be freely pervious to air, and act as good absorbers of moisture, the insensible moisture exuding always from the skin; accordingly *blankets* are the proper bed coverings, better far than eider-down *quilts*.

The requisite number of blankets must of course depend upon the situation of the school, the season of the year, and the characteristics of each boy, since some require much more warmth than others. During cold weather at least four plies of blankets and a quilt may be required; and the school authorities, I think, should supply sufficient coverings for the night, and not allow boys to resort to their own overcoats and rugs.

The bedding, blankets, pillows, and other coverings, should be allowed time to air and dry, in order that the moisture and organic matter with which they are saturated from daily use may be entirely removed. Yet, even in dormitories which are used for sleep only—still more in cubicles, where the room must be ready for use immediately after first lesson—it is rarely the practice to allow any ventilation of this kind whatever; for as soon

as the occupants have vacated them the beds are re-made. Whereas, instead of the beds being made up as soon as they are empty, the proper plan is to leave them open, so that the mattress, blankets, and other coverings, can be ventilated *all day*, the beds being only re-made when the windows are closed in the evening.

Moreover, the same plan should be followed in the vacation, and all beds and bedding should be well spread out on the day the scholars leave school, and so remain until their return; as a matter of practice they are usually packed in a heap, which thus becomes a mass of decomposing organic matter.

There are few schools of which the well-known advertisement, which occurs in our homely country inns—"well-air'd beds"—could be asserted with truth.

Unaired beds are a frequent source of ill-health; beds generally become damp when unused, and it is consequently requisite that, before the re-assembling of the school at the commencement of each term, every mattress, and other bed covering, should be carefully aired. This should be systematically carried out under the superintendence of a responsible person.

Dormitory
Morality.

I do not propose to discuss the question of dormitory morality in its entirety, though it is one of such moment that I cannot pass it over in complete silence.* The importance of the subject *must* be distinctly recognized by school authorities, and the duty *must* be manfully undertaken of avoiding in their schools any arrangement that can in the slightest way conduce to this evil.

* In a Prize Essay on "The Preservation of Health as it is affected by Personal Habits, such as Cleanliness, Temperance, etc.," I have fully and freely discussed this subject, and shall now make only a few essential remarks. (Longmans, Paternoster Row, London.)

To ignore the evil, to speak of it with "bated breath," is *not* the way to overcome it. It must be plainly and firmly attacked. Virtue does not consist in being too pure, or too ignorant, for temptation to assail; but in possessing that strength of character which is able to resist temptation, however great, whenever it appears. Few boys, in their early school-days, possess this power. It develops with their bodies and brains, and if assailed too roughly at first it is weakened rather than strengthened. Boys, therefore, should never leave home without being warned of the instinct which will assail them sooner or later, with more or less force: an instinct which, when uncontrolled, may become a demon which will insidiously and fatally mar the whole of life. They should not only be taught, before leaving home, the virtue of self-control, but also of self-respect, which will prove a powerful means of defence. *Which* parent shall be the boy's adviser, must vary in every family. Some time since a clergyman, in a sermon preached in one of our cathedrals, testified: "I owe most of my own character to my mother. My father spoke to me continually of everything relating to my life and conduct but one; my mother never spoke to me at all of anything but one, and of that she never ceased speaking to me." It is active advice and help that boys require; lamentations over the evils of young human nature will not remove them. This is not simply a *school* question, but a *national* one. What are we doing to remove this blot from our school escutcheon? At present worse than nothing. We usually send our school-boys to bed with a drug in their stomachs which makes it hard for all, impossible for some, to curb their animal instinct. It may be answered, "I thought our English schools were well-nigh perfect. What is it you desire to alter?" In answering this inquiry I would ask a question: How many parents, when parting with their

children for school, tell them of the animal instinct that will arise, of its power, of the necessity of control, and of the consequences to themselves and others if it be not curbed? How many schoolmasters have striven to prevent this evil before its commission, instead of punishing it after the fact? In how many schools do the boys go to bed without a glass of beer, which only serves as a stimulus to this instinct, too imperious already?

In boys' schools, at the head of the *Dormitories* should be placed the best senior boys, or præpostors, that the house possesses.

Each of these boys should be responsible for the conduct of the dormitory under his supervision. He should be the trusted friend of the master, and of every upright and pure boy; but the enemy of every boy capable of any impure hint, word, or act. By his personal influence alone, he may, as I have known, keep the whole tone of a house, especially of a dormitory, pure and healthy.

If in a school small dormitories of two or three beds be already in existence, and must be used for a time, the responsibility of the master in the selection of the boys to be placed in them is serious; and so serious, that it furnishes a ground for the abolition of such dormitories, for on this choice may depend the whole character and future of a boy.

I must also regard *cubicles*, for sanitary and moral reasons, as the worst invention ever planned for schools. For evils are *possible* in cubicles and small rooms which are unlikely, or almost impossible, in large open dormitories, unless the house or school be corrupt to the core.

Cubicles, in my opinion, are a direct invitation to a boy to practise and teach secret acts, which he dare not, and would not, commit before a whole room; and

it is wrong that any school should place this gratuitous temptation in a boy's way, however excellent may be his nature.

"How oft the sight of means to do ill deeds
Makes ill deeds done."

To the thoughtless parent these cubicles no doubt look cosy, home-like, and private; but it is this very privacy that constitutes their evil, for, as I have stated, they furnish an opportunity and temptation to the commission of acts which could not be committed in a properly regulated public dormitory, having at its head a senior boy, or præpostor, chosen for *character* rather than for ability.

The system of præpostors should be based alone on the test of character; and experience has shown that in this form the system has proved a great success.

With parents, therefore, really lies the responsibility of continuing these cubicles or of abolishing them; and on their shoulders, consequently—not the master's nor the boy's school-fellows—must also rest the blame if their sons become corrupt.

Cubicles in themselves may not be objectionable where a healthy tone and conduct exist throughout the entire school; but where there is the least unhealthiness in tone or desire, as there usually is amongst numbers, cubicles foster its development, and invite to its commission by the privacy they afford.

In the large open dormitory the prefect can see all in the room, and *for this purpose sufficient light should be provided*; but the secrecy of the cubicle at once increases the power of the bad boy, and takes from the prefect the possibility of supervision.

The argument of those who advocate cubicles is, that the open dormitory tends to vulgarity or coarseness of manners, through its lack of privacy.

Even if this were inevitable, I would yet urge that it is preferable to have open coarseness of manners, rather than that secret vice which undermines the character and constitution, and is the primary cause of a large proportion of evil in "Society."

But I insist that this coarseness of manners is not inevitable; and maintain that with a properly constituted prefectorial system, based on *character* as well as on *position* in school, the tone of the dormitory could be raised to as high a pitch as is possible to be obtained amongst human beings.

Parents themselves are mostly at fault in this delicate moral question, for they generally take no thought for the prevention of evil in the case of their own boys; but, to the serious and permanent detriment, frequently, of their children, leave everything to chance.

"Not to know vice at all, and keep true state,
Is virtue and not fate;
Next to that virtue, is to know vice well,
And her black spite expel."

Above all I would insist that in the young the capacity for governing the emotions is in abeyance, and requires, therefore, judicious and circumspect training from the earliest practicable stage.

I urge, therefore, that every parent should quietly and kindly warn his boy, before he first parts with him at the beginning of school life, that he will, wherever he goes, meet with depraved companions, who will seek to teach him bad thoughts, bad words, and bad habits; and the parent might well tell his son, as Tom Brown's father did, "never to listen to, or say, anything you wouldn't have your mother or sister hear, and you'll never feel ashamed to come home, or we to see you." By this means most of the evil referred to would fail to

be accomplished, for the boy would be on his guard from the outset.

Parents hitherto, with few exceptions, have, as I have said, failed in this important duty, either from thoughtlessness, or on account of its delicate character; and have trusted to their boy's honour; or to the master or the doctor advising him, with the result that many a boy has unwittingly gone astray. I would, therefore, again insist that, *It is the parent's duty, and his alone.* But if the parent fails in this solemn duty, the master in self-defence must watch his opportunity to speak out openly, and not by hints.

It should be every master's aim, instead of shutting his eyes to this evil, until it is forced upon him in so disastrous a way that it cannot be ignored, to ensure, by every judicious means, that no boy shall leave the school-world baser in character than he entered it.

The greatest vigilance is required during the spring and early summer months when the animal propensities are the strongest and most difficult to suppress.

Boys, again, universally love to imitate other boys, especially young boys their elder school-fellows. If the latter are wrong-doers, disgust may be felt at first by the younger; but sooner or later the evil speech and act are unhappily regarded with diminishing repugnance; temptation is dallied with, and ultimately the evil acquires the aspect of custom; and the purity, which might have been preserved by timely warning, finally lapses into vice.

In an essay which all should study, Sir James Paget, speaking upon this subject, describes the vice as "an uncleanness, a filthiness forbidden by God, an unmanliness despised by man."

When a boy has committed a wrong at school, his appeal is usually for personal punishment and the

concealment of the offence from those at home. The feeling at the root of this appeal is one that should never have been possible. The relationship between father and son should be much more intimate and sympathetic than this sentiment discloses, and if parents acted by their children in the proper spirit, it could not arise. A father should teach the son to feel that he is his best and most helpful friend on earth, whose experience and sympathy are intended to be used for the boy's development into a manly self-reliance and self-control. If this course were consistently and considerately pursued, concealment from the father, even on the most intimate subjects, would become impossible; and implicit and cordial trust would pass into a habit of life.

The *remedy* for this widespread evil, as far as boys are concerned, involves therefore:—

1. A timely word of warning from the parent.
2. A more reasonable prefectorial system, in which *character* ranks *above*, but *not without*, ability.
3. Large open dormitories only.

It is obvious, from my remarks on this vice, that I hold the deep conviction, that it is the imperative obligation of the physician to speak plainly of the conditions which foster it; and the question is so interwoven with that of school dormitories, that I should have failed in my duty—however much I may regret the necessity for its introduction—had I avoided its discussion.

It is a fact, only too true, that many people are much more easily shocked by the mere mention of an evil, than by the existence of the evil itself. The idea of seeking to lessen or prevent it scarcely enters their head; and their intervention is limited to the punishment of the offender when discovery occurs.

My firm opinion is, that when school authorities recognize the possibility of the existence of this evil

in *their own* schools more seriously than they do: when they face it rather than ignore it: when they endeavour to prevent it rather than cure it—then, and not till then, will it be successfully met; and to *prevent* it, I can only repeat, that no instrument is more effectual than a carefully-chosen prefectorial authority in large open dormitories, after the boy has been put on his guard by his parent before leaving home.

At the present moment, literally no trouble is taken to prevent the origin and growth of this evil. Boys are neither warned nor taught by parents or masters to avoid it. The only manner in which it is dealt with is, to my mind, unwise and unjust, and utterly useless for producing any real good. A young boy is turned adrift into the school-world absolutely ignorant that there is an evil to be encountered, and without a helping hand. He falls! Does he usually find a good Samaritan in a school-fellow or in his house-master? No! Without sympathy, pity, help, or advice, he is ignominiously returned to his father, and his whole life and prospects blighted. But whose was the chief fault in his fall? Why do parents do nothing to prevent it? Drastic school measures such as dismissing the offender have never been successful in the eradication of the evil, and the only sure method for stamping it out consists in the elevation of the tone of the whole school.

The boy has been the victim of an unnatural system of education. If punishment be more due than pity, let some severe punishment be prescribed, so that the boy may at least have a chance of redeeming his character, and in this way also helping his school-fellows.

Let the words of one of the ablest of schoolmasters be pondered by every other schoolmaster*:—"A strong house-master knows that he must sometimes get rid of a

* Loc. cit.

bad boy, and Dr. Arnold used rightly to weed out very severely. But, on the other hand, the stronger a house-master the more able should he be to work a house as a family, where a father knows that his sons must always be treated as *necessaries*. That grand old Roman word conveys a standing rebuke to those who forget that the claims of a boy who has once entered a house are almost infinite on his master. It is a weak man who can only keep his house pure and good by constant rejection of the strong characters." If those concerned with the rearing of children, and the training of the young, would constantly bear in mind the facility of wrong-doing, especially in youth, and the difficulty of right action, we should get within a measurable distance of preventing this calamitous evil. There is no doubt that if a boy, by the influence of a mother's love and advice, be taught, before he leaves home, *to respect himself and his own body*, he will be as *safe* at school as anywhere else. It is the absence of this necessary safeguard—self-respect—which entails the downfall. Respecting his own body as the casket of his soul, he will respect those of others, and the thought even of defilement will not enter his mind, or if it enter will be indignantly repelled.

It is an undoubted fact that children are frequently punished too severely. They have never received a warning of the evil; and hence, in a multitude of instances, I can justly plead—

"They know not what they do."

I hold with increasing conviction, that the most ineffective punishments in life are the punishments for ignorance.

Those who have had much to do with boys must often have felt heartfelt sympathy with them in the degradation which has overtaken them: bitter often are

their reproaches, too, against those in authority for the absence of faithful and kindly premonition.

The late eminent surgeon, Mr. Le Gros Clark, in speaking on this subject, said:—"I am now speaking of our own sex, and I do not venture to extend this admonition to mothers. Yet, even they may exercise a wise discretion in warning their daughters, under similar circumstances, to shun, as they would a deadly poison, indelicacy of conversation or in person, in mingling with their school-fellows. The bloom is soon brushed from the ripening fruit; and even *their* schools are not exempt from the danger of infection. As of old, the tree is pleasant to the eyes, and is represented as desirable to make wise; and if the Tempter be listened to, can the daughters of Eve expect to escape when she fell?"

I close this chapter in the words of the present Bishop of London:—"There is no stain so black as that which a man put upon his own soul for life when he parted with his innocence, and there is no sin which more surely lives and lingers in his conscience than that of an impure life."

SANITARY ARRANGEMENTS OF THE BOARDING-HOUSE OR SCHOOL.

Next to providing a plentiful supply of fresh *air* in the boarding-house, by means of proper cubic space and sufficient draughtless ventilation by day and night, a good supply of pure *water* for drinking and cleansing purposes is a most important factor of health. About twenty-five gallons per head per day are necessary for all purposes, excluding, however, the water required for the swimming-bath.

Schools in *towns* should always be supplied with water

from the local water company, and this supply should be constant, and on no account intermittent. No town "well" should be allowed to be used, for, with the ramification of drains which always exists, it is utterly impossible to exclude the surface water, and prevent the contamination of the "well" from the usual leaking of drains.

Schools of any size in the *country* should possess, where it is feasible, a private "Artesian well" to supply the whole school. Where this is impracticable, and yet a "well" must be used, the sides and top should be carefully puddled with clay, to keep out as much of the surface water as possible. The "well" should always be on a higher level than the cesspool, and at a distance from it, and clear of all surrounding drains. The reverse of this requirement is usually found, so that when floods or excessive rain occur, or the cesspool is omitted to be emptied, and consequently from either cause overflows, its contents find their way naturally into the "well," and thus poison the school. I have known diphtheria and typhoid fever to result at a school from this cause. It behoves parents to inquire into these matters before placing a son at school, if they wish to be spared illness, and even death.

Cisterns. *Cisterns* should always be provided at schools; for, unless this be done, and the water be furnished directly from the main without the intervention of a cistern, every time repairs are required in that section of the town, the water is turned off for the purpose, and the school is without water for several hours.

The cisterns should be made of galvanized iron, and be placed at the highest convenient part of the house so as to ensure water being readily available throughout, for if the water has to be carried upstairs by servants the supply will be sure to be inadequate. The cisterns

should be well protected from the entrance of extraneous matter, and should be thoroughly cleansed every vacation before the re-assembling of the school. This plan causes very little trouble where the self-cleansing cistern is adopted. The overflow pipe should either be carried out of the wall on to a subjacent roof, or simply pierce the wall and be cut off so that any overflow may at once be visible; it should never communicate directly with a drain.

From the main cistern at the top of the house the water should be conveyed to other small cisterns for the purpose of supplying the water-closets; and the pipe conveying water from the main cistern which is to be used for drinking purposes should not be attached *directly* to any water-closet. A still better plan is to carry the water direct from the main into the filters.

In towns the water companies always filter the water before it leaves their premises. This is absolutely necessary; but it is also desirable that every householder should filter his own potable water; the filtering may have been imperfectly effected by the companies, or the water may have become contaminated in its transit, or in the cistern.

Every school and boarding-house should, therefore, have its own filter, and this should be efficient, and not simply a sponge-filter.

Several excellent household filters have been manufactured. There are—the “Spongy Iron,” which not only arrests suspended matters, but oxidizes organic matter; the “Pasteur-Chamberland,” the “Filtre Rapide,” “Carferal,” “Silicated Carbon,” “Dr. Bond’s Aërating,” and the ordinary Block-carbon filter.

The filter medium should be renewed annually; and at the commencement of every term the water should be

emptied from the filter, and the tap be turned permanently for twenty-four hours, so that the filtrate may be flushed, and the stale water discharged.

But where water is known to be deleterious, no filter is competent to purify it; and the only process which will render it safe for use is boiling, after which it should be allowed to stand, in order to deposit any matter suspended, or, what is preferable, should be filtered.

Even when this course has been adopted, it is still, unfortunately, a question whether all "bacteria" have been destroyed. This result can only be surely obtained, as Tyndall suggests, by repeated boiling. But nothing can make the drinking of impure water other than an inexpressibly nasty habit, even when not a fatal one.

I have always advocated the propriety of a plentiful supply of pure filtered water being placed in as accessible a position as possible in schools, boarding-houses, and playgrounds. For it is during childhood, more than at any other period of life, that a frequent *drink of water* is imperative. Moreover, the facility with which it is obtained would prevent the very obnoxious and dangerous proceeding which is very prevalent, of boys playing until they are parched with thirst, and then resorting to the pastry-cook's to obtain iced lemonade, nectar, ginger-beer, soda water, and I must add cherry brandy; or obtaining elsewhere beer or shandy-gaff.

But masters do not yet sufficiently recognize the paramount importance of a good supply of filtered water for the boys under their charge. Not only is it one of the greatest preservatives from illness of all kinds, but it contributes to a moral gain besides. Where an ample supply of pure water is provided, which can always be easily got at, boys will not be imbibing so continually, after every exertion, the various drinks I have named.

In order to obviate this tendency I would suggest that

a suitable filter should be placed, protected from frost, in the cricket pavilion, boat-house, racquet-court, gymnasium, workshops, and library, as well as in the passages of the boarding-house and the class-rooms.

A friend of mine, and many others have now followed his example, provided a "Spongy Iron Filter," replenished from the main under the control of a "ball-cock," and placed it in a handy situation for the use of the boys in his school; the consequence was, that the boys took to the water, and gave up the beer, with great gain to themselves and saving to the master. I am sorry to say that I know another school where the same facility is provided for thirsty boys, but the liquid supplied is a *barrel of beer*, instead of a filter of water!

In dwelling-houses, but especially in schools where Drainage. many young people are congregated for many months in the year, it is important that the solid and fluid excreta from the bowels and kidneys should be removed in such a way that they neither offend the eyes or nose, nor cause illness by their decomposition.

How much disease and death were occasioned in past ages through the neglect of this wholesome rule is well known; but even at the present day we must not boast, for we still have a large mortality (produced by *filth* causes) from unprevented preventible diseases. Of towns this statement is perhaps especially true; but, even in the country, and in isolated schools, filth diseases are only too common, owing to the slovenly and unscientific way in which refuse is removed. In fact, refuse, in a large proportion of cases, is not removed at all, but is allowed to stagnate about the premises, and poison the "well" water; or, being received into a tank, or cesspool, is carefully covered over, and allowed to decompose and generate gases which return up the conveying pipes to the house.

This poisonous gas is thus supplied in a similar way to that in which coal gas is "laid on" to houses, the gasometer being the hermetically-sealed cesspool, and the drain-pipes *from* the house acting as the conveying gas-pipes *to* the house. Sewer gas has in this mode been conveyed all over houses from various points, such as the cellar and scullery drains, the water-closets, housemaids' sinks, baths, and cistern overflow, and has even been "laid on" to bedrooms.

It will thus be seen that, for the preservation of health at school, the provision of means for the removal of *dirty water* is as essential as a constant and plentiful supply of clean water. It is also necessary that the solid and fluid *excreta* from the body should be quickly and safely removed.

Cesspools. In schools situated in the *country*, the cesspool should, if *practicable*, be constructed at as great a distance as possible from the house; it should also be placed on a lower level than that of the "well," and removed from its neighbourhood, with free ventilation, and with an effectual disconnection from the soil-pipe, just *as though it were a town sewer*, so that no generated gas can by any possibility enter the house.

Earth-closets. If this plan be *impracticable*, no cesspool should be provided at all, but *earth-closets* alone should be used, each being separated from the other by a partition, and well ventilated above and below.

House Sewers. In schools situated in *towns* the sewers in existence should be employed. The pipes most suitable for drains are those having "Archer's air and water-tight joint," as shown in Fig. 9.

All house-sewers should be disconnected absolutely

from the street-sewer. There are several excellent traps which effect this, and one or other of them should be employed; most of them answer their purpose with effect.

The trap in use at my own residence is an absolute preventive against the entrance of sewer gas, arising from

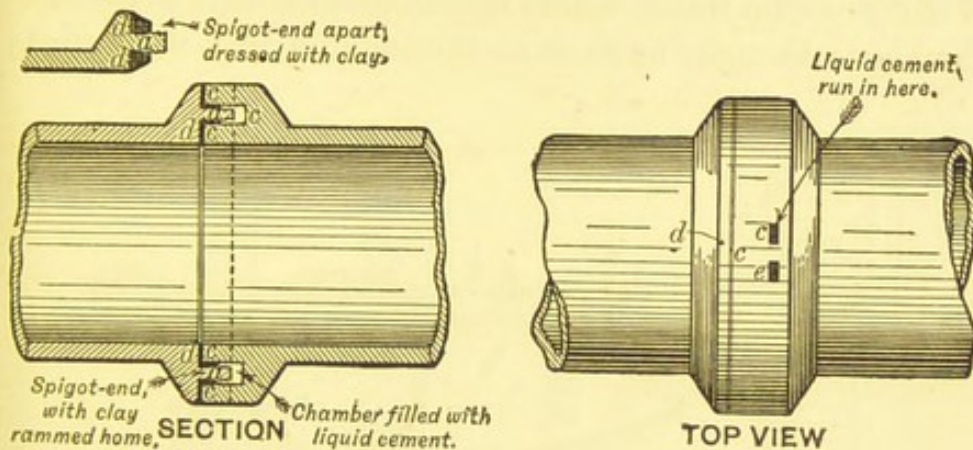


FIG. 9.—ARCHER'S AIR AND WATER-TIGHT SEWER PIPE.

a cesspool or sewer, into the house, and works admirably, on account of its simplicity. It was invented by an intimate friend of mine, a schoolmaster, who, having had the misfortune to lose a child from diphtheria, which spread also among his pupils, set to work to devise a means of keeping foul gas out of his premises; he accordingly invented this ingenious trap, which is now called the "Edinburgh Air-chambered Sewer Trap" (Fig. 10). Every pipe for drainage purposes in and about the house should open into the air-chamber, and should never be attached directly to the sewer-pipes.

I am not an advocate for any particular trap, so long as it be right in principle and simple in action. I merely mention this one as a satisfactory type, which has also been approved by experience. There are now many traps in the market, answering to different names, but all based on this excellent type.

By means of automatic flushing the house-drains can be kept perfectly free from refuse: Field's self-acting flushing chamber (Fig. 11) is a very simple and ingenious arrangement. The flushing chamber is emptied by means of a *self-acting syphon*, while the latter is put in action by an extremely small flow of water, or by the accumulation of dirty or slop water, which may take some days to fill the chamber; though, as soon as the tank is full, it empties

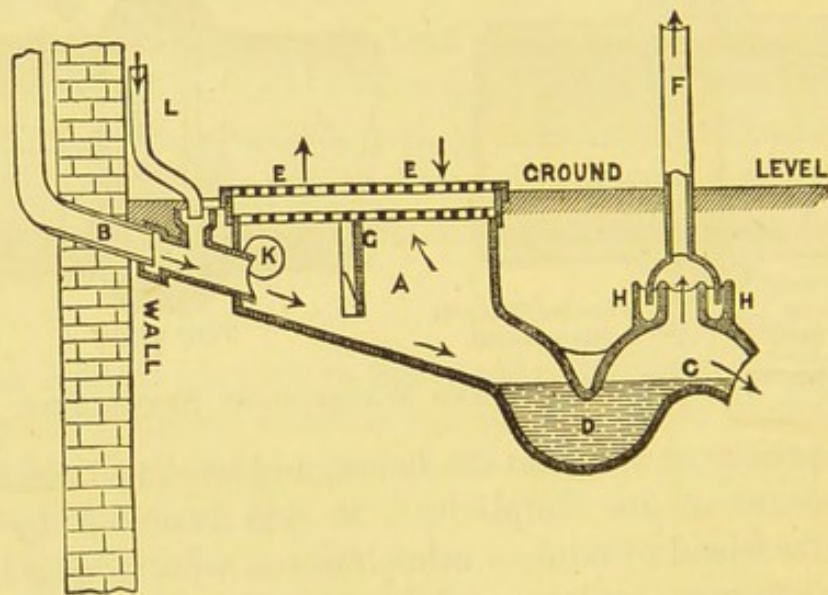


FIG. 10.—THE "EDINBURGH" TRAP.

K, junction for one or more closets, etc.; E and E, iron grids for ventilation. A socket, H, is provided for a ventilating pipe, F, to be carried above the windows; next is a syphon or water-trap, D; then an air-chamber, A, to carry off any residue of sewer gases (if any) escaping through the trap. B, soil-pipe; L, rain-water, sink, or other house waste water-pipes.

itself automatically in the course of a few minutes. Its advantage is that it both flushes the house-drains, and, in doing so, the main-sewer also.

The working of this apparatus is very simple, and almost impossible to become deranged.

The syphon (A) is built into a tank (B). The longer limb of the syphon just dips about one-eighth of an inch into the water below the tank at (C) which is kept at its proper level by a weir (D).

The action is as follows:—When the water fed from the inlet or tap (E) rises to the top of the longer limb of the syphon shown by the dotted line, instead of running down the sides, it is guided by a lip and is caused to descend clear of the sides. By this means a quantity of air is displaced, gradually forming a vacuum in the discharging limb, and thereby starting the syphon, which empties the tank with enormous rapidity.

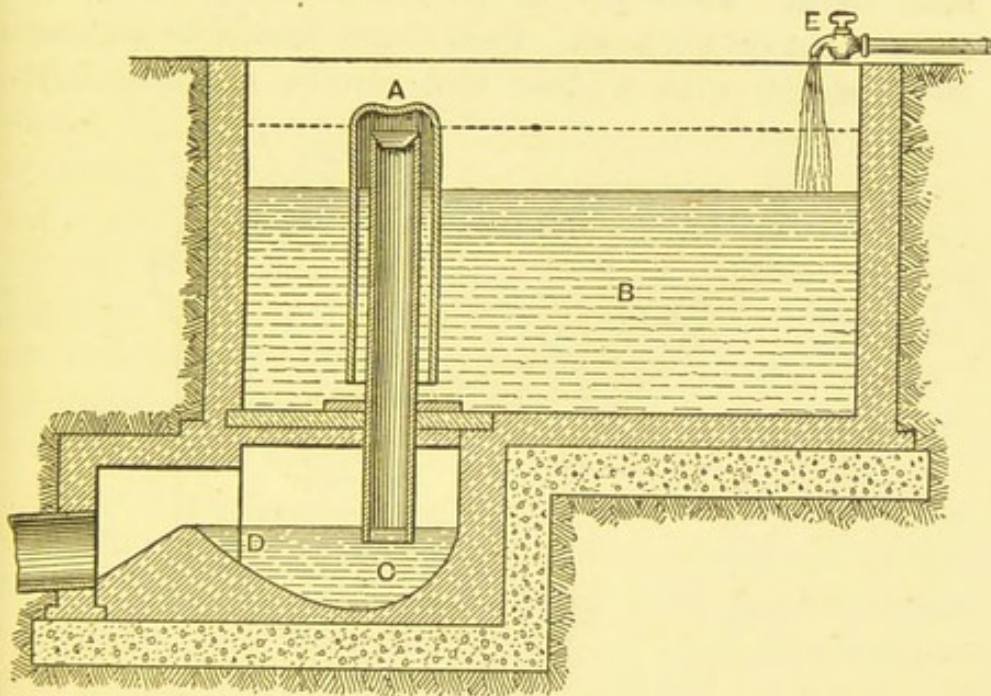


FIG. 11.—FIELD'S SELF-ACTING FLUSHING CHAMBER.

In some towns, especially where sewage-farms exist, two sets of drains are in use; the one to carry off the excreta; the other to remove the dirty water, rain water, and the whole of the surface drainage of the town, in accordance with the famous saying of Ward, "the rain to the river, the sewage to the soil." This *surface* scheme, wherever it has been provided, as at Eton, Rugby, and other places, has worked efficiently. The arrangement also renders the sewage of greater value; for, under systems previously adopted, the sewage was so diluted

as to contain only from two to three pounds of solid matter per ton.

Water-closets. All the water-closets in schools that are in use by day should be placed out-of-doors, and occupy a *detached* building; but they may be so contrived as to be readily available in the evening by opening another door, locked by day, without the necessity of going into the open air after dark. There should be one closet provided for every eight or ten boys. Each closet should be separate and distinct, with a door that can be fastened, well-

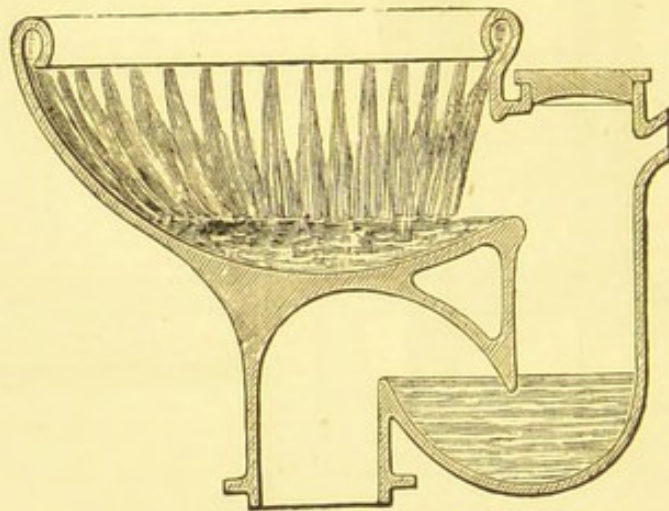


FIG. 12.—THE WASH-OUT BASIN.

ventilated above at the highest point, and below, level with the floor, so as to prevent all accumulation of foul air; the floor, inclined towards the door, should be of brick, stone, or tile, which can be flushed every day, and on no account of wood or earth. The walls should be lined with glazed bricks or tiles. The water-supply should be copious; moreover, since boys are careless and the closet is in constant use, it is preferable that closets should be always self-acting, or so contrived that a single pull of a handle should empty, from its own cistern, the requisite quantity of water—about three gallons—each time the closet is used.

So many excellent arrangements have been devised for *closet-basins*, that there is an ample choice. It should, however, be a *sine quâ non* that the basin should be so contrived that no opportunity is given for the accumulation of refuse on its sides, or beneath it: such a one, for instance, as the "National," the "Wash-out" (Fig. 12), or the "Deluge." There is another system, called the "Trough system" (Fig. 13), which is an excellent arrangement for schools, where boys visit the closet quickly one after another, and are always careless about allowing sufficient water to run. And seeing that the closet is, *or should be*, used daily by every boy immediately after breakfast, one flushing of the trough after this general use—say, at 10 a.m.—under the control of the boys' butler, would suffice for the day, and with another flushing immediately after "locking up," there need be no accumulation in the trough, and no waste of water; or the closet can be so arranged as to flush itself automatically, as is shown in the drawing.

A good *water-closet* should be within easy reach of the dormitories, for use in the night if required; and if the sewer or cesspool has been cut off from the house (as should be universally the case) by an open air-chamber, and if the closet itself is well ventilated, no harm can possibly ensue. To connect any house-sewer or house-pipe directly with the main-sewer of a town, or even with a cesspool, as is often—or rather, generally—done, is deliberately to lay on sewer-gas to the house just as coal-gas is laid on for lighting purposes. Besides this severance of the house-sewer from the town-sewer, the soil-pipe coming from the water-closet should be ventilated from its highest point by a pipe of the same diameter as the soil-pipe, which should be carried to the loftiest point of the roof, and be well removed from every window and chimney. The soil-pipe should be outside

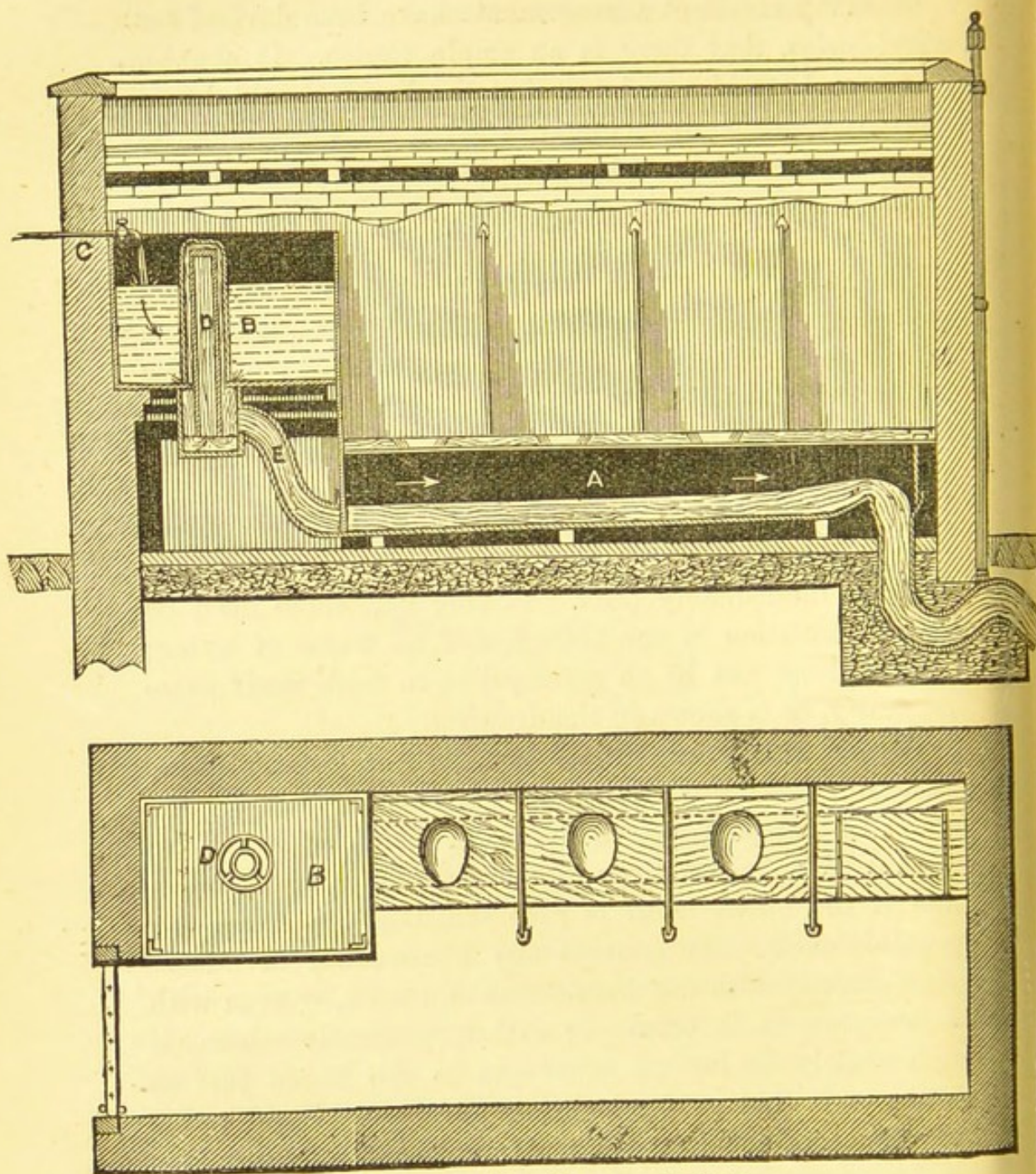


FIG. 13.—THE TROUGH SYSTEM.

A, the trough ; B, flushing cistern ; C, the feed-pipe ; D, Field's automatic syphon flusher ; E, the waste-pipe.

the wall of the building, and should not pass under the house in its passage to the sewer. Where its passage

beneath the building cannot be avoided a special contrivance should be arranged in order to ensure the absence of danger from leakage of fluid into the ground, or from the entrance of sewer-gas into the basement of the house.

In addition to these precautions masters should regularly inspect water-closets at odd times, or servants will rarely be found to keep them clean. All constructive attention to drains should take place, if possible, during the vacation; but a grave fault detected during term should be rectified at once.

Latrines, out-of-doors, should always be provided for Latrines. boys' schools in the ratio of one for every twelve boys. The only really satisfactory latrines are those which are made of thick plate glass. The urine should fall into a glass trough, nine inches wide and six inches deep, kept full of water, and fitted with a self-acting outlet. Its back and sides, as well as the ground on which the user stands, should be of plate glass, and should be cleaned every morning and evening. Such a latrine—and specimens are now in existence—is devoid of smell. The next best are those which have white china or glazed earthenware pans, as these are cleaner than the ordinary latrine, and in them no sediment can be deposited, or if this occur, the sediment is so slight, and so little adherent, that it can be removed without difficulty. The slate slab urinals may be used where there is a constant free flushing by water; but they always possess the disadvantage that the somewhat rough surface will allow a deposit of sediment which in warm weather is neither wholesome, nor agreeable to smell; where they are employed, the sediment should never be allowed to accumulate, but whenever it makes its appearance, should be immediately scraped off, or dissolved by a mineral acid.

Stone and cement slabs should not be permitted, owing

to their exceedingly rough surface causing a constant deposit of sediment, which it is almost impossible to remove. The pipe carrying off the fluid from all latrines, whatever their construction, should open into an air-chamber, instead of being directly attached to the drain leading to the sewer.

Lavatories. Lavatories should be provided in schools for washing by day, in order that the dormitories may not be visited except for sleep. The basins should have under-troughs of white enamel pipes to carry off the dirty water, and the pipes should not directly communicate with the soil-

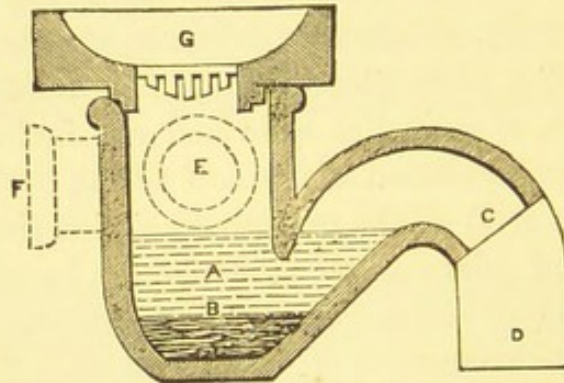


FIG. 14.—THE GULLY TRAP.

A, the trapping-water ; B, the silt collected ; C, the junction of syphon with the drain-pipe, D ; E and F, flanged side entries ; G, the iron cover of the gully.

pipe or sewer, but should discharge either into the air-chamber of a suitable trap, or on to an open iron grating outside the house, placed over either the ordinary syphon gully-trap (Fig. 14), or over a ventilating trap, the pipe from which again should not be attached directly to the sewer, but open into the air-chamber of a trap like the "Edinburgh." By this means no sewer-gas can enter the house through this channel.

It may, however, be feasible where a *surface drainage* scheme is in existence to utilize it for carrying away the

dirty water from lavatories and baths, instead of emptying it into the sewer: this is already done at Eton.

A Housemaids' Sink, or slop-receiver, should, for the convenience of the servants, be provided upstairs in all schools where many slops have to be emptied. It is best made of white china, glazed earthenware, or glass, the latter being cleaner and sweeter than any other material, and not liable to the accumulation of deposits; in this

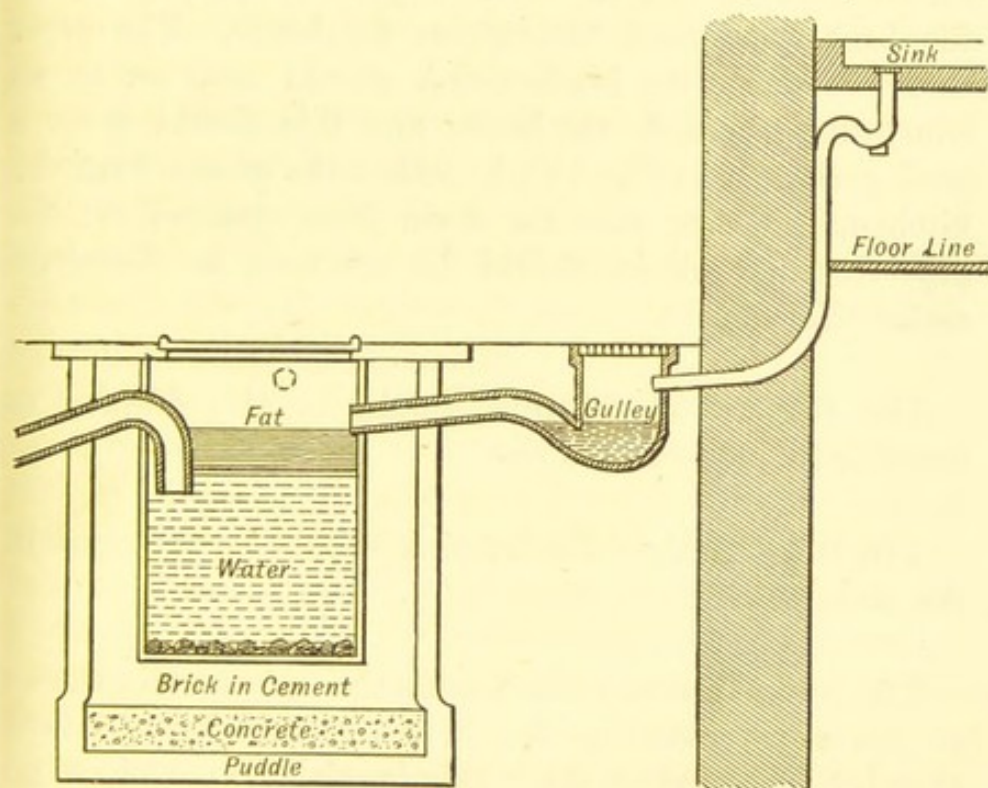


FIG. 15.—GREASE TRAP.

respect it is far superior to lead or stone sinks. The hole through it should be at least three inches in diameter, and be protected by a wire cradle or sieve, with meshes not too close together. The pipe from the sink should be syphoned immediately beneath it, in order to prevent an inflow of air; below, the pipe should terminate in the manner described for Lavatories.

There has recently been adopted an excellent arrangement, called the "*Unitas*," combining a closet-basin, urinal, and slop-sink in one; it is cleanly and efficacious, and slops may be emptied without causing a deposit of filth under the seat, and with gain to the soil-pipe, from the flushing it will thus receive.

Kitchen Sink.

It is equally important that the kitchen should be protected from sewer-gas, which may not only contaminate the food, but spread throughout the house. The pipe, therefore, from the kitchen-sink should open on to an iron grating outside the house, and this should cover a good grease trap (Fig. 15), to collect the grease from the kitchen, and thus save the drain from obstruction; the pipe from the drain should be arranged as described under "Lavatories."

Butlers' Sinks.

The Butlers' Pantry-sink should be also drained as described under "Lavatories."

The Boys' Butlers' Pantry-sink should be arranged in the same way.

Basement Drain.

The cellar drains, being among the most certain causes of sewer-gas entering the house, should open into a chamber like that of the "Edinburgh" trap, and on no account be attached directly to the sewer; but cellar drains may safely be connected with a surface-drainage scheme.

Baths. Baths, with hot and cold water laid on, should be provided in every school, where a boy can wash all over with soap and hot water at least once a week, besides his dip in the swimming-bath every day, and his cold or warm bath after games.

The waste and overflow pipe from the bath should not communicate directly with the drains, but should be syphoned underneath, and open below on an outside iron grating, as in the case of lavatories. The number of lives lost, and of illnesses caused, in this country as the result of the bath waste being connected directly with the drain is incalculable.

The disposal of house-dust and kitchen-refuse is always a source of difficulty and anxiety in every school, especially in towns. Removal of Refuse.

In the *country*, the refuse-heap should be removed as far as possible from the house, and be placed at the remote end of the premises, where the boys do not play; and the stuff can be utilized for fertilizing purposes. The "bones" can be "ground," and used as a valuable manure for the garden.

But even with this precaution a refuse-heap is often a great source of danger. It should, therefore, be removed and utilized every vacation, when the boys are absent. One of the most extensive epidemics of typhoid fever on record, which occurred at a large orphan asylum, was distinctly traced to the refuse-heap on the premises, although it was situated at the distance of one or two fields from the asylum.

In *towns*, no dust-bin or dust-heap should be permitted; but a galvanized iron box, as large as two men can carry, fitted with a wire cinder-sifter on the top, should be provided for every house. It should be placed under cover, close to the house, but not within it, and should be emptied by the sanitary authorities twice a week at least. Vegetable matter should not be thrown into it, but should be burnt.

Further, the refuse should be removed from the boarding-house at a time when the boys are in school, and not

when they are continually passing in and out of the premises.

Laundry. Wherever it can be arranged, all dirty linen should be washed on the premises, or at the school's own laundry, under the inspection, and upon the responsibility, of the school authorities; the risk of infection being brought into the house from a common laundry is thereby obviated. Where this cannot be carried out, the whole washing of a school should be done in one large laundry in the country, which should wash for that school alone. When each boarding-house arranges for its own washing, the greatest care and supervision are necessary, as the laundry is a well-known channel for the entrance of infectious illness into school.

Airing Linen. I repeat a word of warning concerning the importance of *airing linen* before it is worn; this injunction cannot be too strongly impressed, for its neglect—the wearing of damp linen or sleeping on damp sheets—is the cause of much illness every year, and of many deaths. This point is too often considered to be an affair of the laundress, and consequently no trouble is taken at home; the laundress, again, is too much employed, or the weather is too wet, to enable the rule to be observed effectively, and hence it tends to be totally neglected.

Linen Cupboard. The *linen cupboard* in which all the clean linen is kept should be provided with hot-water pipes in order to keep it aired, and with sufficient ventilation to ensure a current of air.

Precautions against Fire. The consideration of boarding-house arrangements would not be complete without touching on the question of providing means of escape in case of "Fire." With

households varying in numbers from fifty to a hundred and fifty, and upwards, there are, generally speaking, absolutely no means at present provided in most schools; even where precautions have been taken they are, as a rule, wholly inadequate. In a large number of schools, not only is this the case, but the boys are actually locked in their bed-rooms at night, and have literally no means of escape, except by ringing a bell for some one to unlock the doors—generally a matron or boys' butler, who, together with the boys themselves, would be so panic-stricken as to be entirely helpless. Should a fire occur under such conditions the disaster would be appalling; and those responsible for such a state of affairs, and concerning which they have been frequently warned, would be heart-broken by the neglect against which they should have provided.

Since this was written, in 1884, twenty-six boys have been suffocated to death owing to a fire under the dormitory in the Forest Gate Industrial Schools, on January 1, 1890, in consequence of the door of the staircase leading from the dormitory being locked, and no one inside possessing a key. Such calamities are liable to recur, unless school authorities either cease to lock boys in their dormitories, or else provide them with a bolt in a glass cover which can be broken in case of emergency. Unless the arrangement be exceedingly simple it is always found wanting when tried by the test of a fire.

Outside staircases are in some cases a necessity owing to the construction of the dormitories.

Another reason for providing a glimmer of light in the dormitory at night, in addition to that which I have already assigned, is that suggested by counsel in the case just referred to—"if it could possibly have been arranged that there should be a slight glimmer left, these boys might have been saved from the utter confusion, and might

have been able to see where they were. There might be a lantern so fixed that the boys could not tamper with it."

Annual
Sanitary
Inspection.

An annual sanitary inspection of all great schools should be carried out by a competent inspector, who should not be interested in the school, or in any way connected with it. It is essential that he should be a man of practical experience in school construction arrangements, and requirements, and well versed in sanitary science.

Some governing bodies have already instituted a medical inspection of the schools to which they are attached. But, in order that the course should prove effectual, it is requisite that the medical inspector should be permitted—indeed, invited—to inspect the schools whenever he thinks fit, and without sending prior notice; so that while his report should be annual, his visits should take place at unfixed times. To intimate the date of his survey would be, in plain English, equivalent to saying, "As I am about to pay my official visit to your school, perhaps you will be kind enough to see that everything is put in order before I arrive." Such inspection is valueless, a waste of money, and no guarantee to the governing body, or the public.

DIET.

The subject of *School Diet* is one of so much importance in the rearing of the young, that I have treated it more fully than is possible in this treatise, in a separate volume,* to which I refer those who require more detail than can now be presented.

* "The Essentials of School Diet; or, the Diet Suitable for the Growth and Development of Youth." (London: Rivington, Percival & Co., 34, King Street, Covent Garden. Crown 8vo.)

In most schools, public and private, boys have their meals with the masters with whom they reside; but, unfortunately, there are still some of our great schools where all the boys, numbering from 400 to 800, assemble in a common dining-hall. I do not approve of this plan; for the cooking and serving of meals obviously cannot be attended to so efficiently as by a careful and generous master's wife providing for from thirty to fifty boys.

It is a point of great importance in feeding generally that the diet should be as varied as possible in kind and cooking. This is especially true in the case of the young; for to them monotony in feeding, equally as in play and in work, is entirely unsuitable. Variety in Diet.

The likes and dislikes of the young in the matter of food are very powerful, and while they should not be encouraged, allowance should be wisely made for them. The greatest cruelty is still ignorantly practised by parents and teachers in forcing on children that to which they have an inveterate dislike, and with which their system cannot agree, and, on the other hand, refusing them what they like, and what their system really requires. Natural Cravings.

There are children who mentally cannot digest classics, and physically cannot digest fats or starches; even the sight of fat, in any form, will prevent them eating. Yet they are forced to partake of both. If they were only allowed to digest science mentally, and sugar physically, these incompatibilities would cease. Nature is not allowed a voice in the matter, but injurious and ignorant meddling prevents and thwarts her at every turn. Natural cravings should be watched for and satisfied, so that Nature, in her most reasonable demands, may work at her best. I have even known children

steal money in order to purchase sweets, simply to satisfy Nature's demands which had been thwarted by stinting sugar at the table at home. Thackeray observed that "all people who have natural healthy appetites love sweets." When will it be learnt that in the training of the young Nature's laws must be obeyed?

On the other hand, the young are frequently whimsical in their habits or fancies. For instance, a convalescent boy once complained to me that he could not eat his egg for breakfast, because it was a stale shop-egg. Now, this egg was from my own poultry yard; it had been laid the day before, and I showed him the date written on the eggshell. He could not even appreciate the pale, delicate taste of a new-laid egg. Such caprice can only be laughed out of boys, and it is wise to remove it in this kindly way.

Cooking. The cooking of food for a large number is a matter that requires careful attention; and while the food may be cooked and served as satisfactorily as is possible, there is always one point that must raise a comparison in every boy's mind between home and school; that point is the question of *gravy*. When a joint is carved away from the skin to the bone, there cannot be sufficient natural gravy for every one, and consequently, if any is to be supplied at all, it must be a "made" gravy, which is less palatable. This is, therefore, one cause of complaint which cannot be obviated.

There is, however, sometimes a cause for just complaint, both by parents and boys, in the *cooking* of the food, meat and vegetables, but especially the latter, which furnishes a reason why boys so frequently refuse to eat vegetables.

The food may be the best that can be bought; but if it be badly cooked, especially if the meat be so under-done

as to be a blue-red ; or if the green vegetables be imperfectly washed, and contain grit, insects, or slugs, or, from insufficient straining, be swimming in the water in which they have been boiled, no one, however hungry, can eat with satisfaction. It is, no doubt, difficult to cook efficiently for a large number, but the difficulty can be overcome by a careful master, or, still better, by his more watchful wife, themselves supervising ; and, by dining with their boys, making sure that the food is well and nicely cooked and properly served on *hot plates*.

In all schools, public and private, boys vary in ages, the elder being about five years older than the younger boys. In serving dinner, therefore, the master should insist on the *younger* boys, who cannot eat so fast as the elder, being *served first*. In this way the "little fellows" would have time to masticate what they eat, and be able to obtain sufficient food.

The master should also encourage just and reasonable complaints being made by the boys to himself, instead of leaving them to complain to their parents, as this practice tends to make servants do their duty.

Besides good food, efficient cooking, and skilful carving, it is essential that boys should be allowed sufficient time for eating, and thus avoid *bolting*. The non-observance of this rule is so frequently the cause of indigestion that the boy gradually acquires a natural loathing for what he should eat, because it generally disagrees with him.

Time to
Eat Food.

There would be less rapidity in eating were pupils not only allowed, but encouraged to *talk* during meal times ; whereas a pernicious plan exists in schools of encouraging them to *read* at meal times. This implies that when a pupil has an interesting work, the book is more devoured than the food, so that dawdling in eating occurs, the food becomes cold, and when every one is

ready to leave the table the meal is only half finished, and thus the pupil gets insufficient food, and health and growth suffer.

Many a child at school is unable to eat a good meal because the *teeth* are so decayed and tender. If parents, during the vacations, would insist on a careful inspection and rectification of their children's teeth by the dentist, they would thrive better by reason of more efficient mastication, considerable pain would be avoided from the formation of alveolar abscess, and they would not be deprived of sleep, or lose time at work from wholly unnecessary suffering.

I consider it most unwise and unhealthy to detain boys in school after the appointed time for work, as it interferes with their meals, and they have then either to bolt their food or practically fast. For there are unwritten customs in most schools, needing repressing with a strong hand, which prevent a boy, if he wish to avoid opprobrious names from his school-fellows, remaining in the dining-hall after others have finished. Yet if a master does not conscientiously see that the boy has time to eat his meals, he must rely on the pastry-cook, or his parents' hamper, to the serious detriment of his health. The practice of detaining boys in school—either because the master is ambitious, or because he is slow, or because his boys misconduct themselves, or because they have failed to learn their lesson—during part of breakfast-time or dinner-time is exceedingly rife, and is absolutely indefensible. The parent in this way pays for what his son does not receive: the pupil is deprived of the material necessary for carrying out the work the master requires of him—in fact, it is the old Egyptian story of being compelled to make bricks without straw. And the innumerable petty misdemeanours of boys may, in consequence, be really due to deficiency of nutriment, or to

indigestion, occasioned by this injudicious practice, with its proverbial perversity and ill-temper.

The question of the hours to be given to eating is one Meal Times. of the first importance for scholars, but especially for growing girls. One would have imagined that this essential question would at the present day have been finally settled on a scientific basis. Yet in many of our schools these hours could hardly have been more unwisely apportioned. For instance, to make the evening meal—supper—a meat meal with beer, or even a bread and cheese and beer meal, for growing boys with ardent passions, is more than unwise—it is unjust and injurious: still, it is largely in force in some of our high-class public schools.

In one of the largest schools in this country one of the chief meals of the day is eaten at 9 p.m., when boys are supplied with meat, tarts, cheese, and beer. Could any system be more indefensible? Under such inconsiderate conditions can any boy, of a certain age, keep himself pure? Is it a wonder that immorality is so rife? Is not every boy by such a practice too heavily handicapped by *physical conditions*, over which, however well-intentioned, he has practically no control?

How, under such conditions, can a boy be *justly* punished for immorality? For in many boys at the school age the physical circumstances engendered by such means almost necessitate that "the evil that I would not, that I do."

If school authorities would recognize that the major part of the immorality in schools is really caused by the conditions of life they themselves have imposed, rather than by the nature of their pupils; that it is owing to the deteriorating physical conditions existing in bedrooms; to the unwise arrangements in meals; and, above all, to ignorance arising from parental neglect in warning their sons of the evil, there would result less sermonizing upon

the subject on Sundays, less heart-rending at home, and more real endeavour directly and indirectly to remove the evil, instead of weakly lamentation in whispers. Evils, like enemies, to be conquered must be faced with courage; and the more daylight cast upon them the less opportunity is afforded for their baneful success.

In other schools boys breakfast at 7 a.m., have another breakfast at 11.30 a.m., and dine at 2.15 p.m., which is followed by tea and supper in the evening. Could any arrangement be more preposterous?

I am not an opponent of early "first lesson" at 7 or 7.30 a.m., before breakfast, for public-school boys, throughout the spring and summer months. But from the 1st of November until the 1st of April, when the weather is cold and the mornings usually so dark that artificial light has to be employed, and the body is more lethargic, I think some other arrangement should be devised which causes less exposure. At Rugby last year, the head-master devised the following admirable plan during the month of January. Every boy answered to his name in the seat reserved for him at meal times at 7.15 a.m., and while in his place morning prayers were held, followed by a cup of milk or coffee, and biscuit or bread and butter, and then each boy entered school at 7.30 a.m. and returned to breakfast at 8.30 a.m. The advantage of this arrangement was that every boy was practically *obliged* to take food before early school, with the consequence that the sickness of the school arising from colds, sore throats, and coughs, through unnecessary exposure, was greatly lessened.

While, however, I do not oppose the early first lesson, as it teaches boys to rise early, allows more time for work, and an extra hour for play, I am a great opponent to first lesson at 7 a.m. on an empty stomach, not only for growing boys, but for masters also, at all

times of the year; and I would therefore urge the importance not only of every master providing, but also of every matron seeing that every boy takes hot milk or hot coffee, with a piece of bread or a biscuit, before proceeding to school. I fear, however, that this plan can never be carried out unless some such arrangement as that adopted at Rugby is in force *all the year round*; for boys usually remain in bed until the last minute, and leave themselves no time even to drink a cup of coffee.

For the very strong boy, perhaps, the point is not so important; but for the delicate boy, and even for the average boy, it involves a trial to his strength, as it is an unnecessary and injurious exposure that he should commence work without prior sustenance. School arrangements should always regard, not the exceptionally hardy boy, but essentially the average boy.

For private schools, where the boys are younger, I should insist on breakfast at 8 a.m., to be followed by school at 9 a.m., in order to allow sufficient time for sleep.

1. I advise that hot milk, or hot coffee with plenty of milk, should be on the table at 6.45 or 7.15 a.m., before chapel and first lesson, this being a gentle stimulant to the nervous system, invigorating without depressing.

On the whole, I am inclined to think that gain, without loss, would accrue to the mental and physical well-being of the young, if they had breakfast all the year round at 7.30 a.m., followed by first lesson at 8.30 a.m. They would then obtain more needed sleep, start with a good meat breakfast before going out, and thus avoid unnecessary exposure. But until schools are ripe for this reform the modified first lesson, such as I have suggested, would be a desirable change.

There can be no doubt, however, that we are within

a measurable distance of a more reasonable system still, when boys will be allowed more sleep, and will not commence work until 9 a.m. So that, with fewer hours of work, and more time allotted to sleep, better work will be obtained. I shall be interested to see which of our great public boarding-schools will earn the honour of initiating this system.

2. After first lesson, breakfast—the most important and health-giving meal of the day—can be taken at leisure, and with appetite, at 8.30 a.m. This should be a hearty meat meal, provided by the school authorities, the heartiest meal of the day, with plenty of time to masticate and enjoy it, without hindrance from the boy's butler, or his school-fellows, and with the possibility of eating it while it is warm. The addition of porridge, if possible, to the breakfast would be a great gain. I would further urge that it is time the school authorities provided all the meals to boys: such relics of the past as boys purchasing their own breakfasts and teas, and their own tea, sugar, and other necessities, should be absolutely prevented. After breakfast, as much time as possible should be spared, in order that each boy may be able to get his "natural relief" without hurry; and masters should provide stringent rules for the purpose, since on its regular performance the health and temper of the pupils greatly depend.

3. Dinner should be a good meat and pudding meal, varied as much as possible, at 1.30 p.m. School should not cease later than 1.15, so as to allow every boy a few moments' breathing time, to obtain a wash, and be in his place at the dinner-table as the bell rings at 1.30 p.m.

4. Tea, which is sometimes a movable feast, should be provided from 5 to 6 p.m., and should consist of bread and butter, with an egg, marmalade, jam, or potted meat.

5. Supper, in most instances, should not be supplied,

so that the boy may go to bed without food in the stomach. If any be requisite, it should consist of bread and butter, bread and milk, a glass of milk, or a glass of effervescing water; never cheese, beer, meat, or pastry.

It will thus be seen that I advocate, after midday dinner, that all the food taken should be light and easily digestible, in order that the boy may do the maximum of work, sleep most easily at night, and rise at 6.30 a.m. with vigour and pleasure.

In discussing the question of food at school I propose Food. to consider briefly the various types of diet required for adolescents.

Growing boys would be greatly benefited if masters Bread. would use their influence to induce them to eat "whole-meal" bread; I mean "whole-meal" and not simply bran bread. But I have doubts whether this will ever be carried out at school, unless the taste has been already formed during the early years at home.

As much bread as a boy can eat should always be provided by the house-master. The crust is twenty-five per cent. more nourishing than the crumb; and sufficient butter should be given with it when eaten alone, for the purpose of making it a staple food, as bread itself contains but little fat. I would also urge on masters the constant necessity of seeing that the bread be wholesome; for while one batch may be sound in every respect, the next may be either sour or musty, and not only uneatable—except under the stern necessity of hunger—but positively harmful.

It would be a great gain to the young, as I have stated, Porridge. if porridge were provided three times a week for breakfast; and if the oatmeal be put to soak in cold water over

night it only requires about twenty minutes' boiling in the morning.

Sugar. No growing boy should be stinted in sugar, or sugar-forming food, such as starch; this is essential, as being his chief heat-forming food, and, being more digestible, preferable to fat, though he cannot retain health without some fat in the diet.

Those concerned in the rearing of the young too often lose sight of their natural requirements.

Food is used for two purposes—to supply wear and tear of body, and, in the young, to provide for growth.

As wear and tear takes place in daily life, so fresh material has to be supplied to the digestive organs and assimilated, while the detritus must be removed by the excreting organs, which act as scavengers. The amount of food required depends, therefore, not only upon the waste that occurs through the daily working of the several functions, but also upon the growth and development that are proceeding.

It is often astonishing to notice the vast amount of nourishment required by the young to cover their wear and tear, and growth. Yet they are constantly stinted in one or other essential ingredient, such as sugar or meat, or even in all substances, to the frustration of Nature's efforts. To stint is often to stunt.

This need of appropriate and sufficient nourishment is still more marked in the case of girls, who, from the age of eleven to fifteen, or even sixteen, grow and broaden to an astonishing extent, passing boys in the race by several inches for a year or two; here the stinting of food amounts to positive cruelty, and many girls suffer throughout life from this serious neglect. They are told it is *unladylike* to eat much. Schoolmistresses should instil into their pupils that it is not only ladylike, but

an imperative duty, to eat as much, and as varied, wholesome food as they possibly can, so that they may develop as Nature intended; it is hard work, with insufficient or improper food, which tends to the deterioration of the individual as well as the race.

In the growth of the young a diet containing carbon- Fat. aceous, or fat forming, material, such as sugar, and farinaceous foods, together with fat itself, in its various forms, is an absolute necessity. To dispense with such articles of diet for more than a very short period entails ill-health, and arrests development.

Milk is the grand type of all diets, consisting as it Milk. does of albuminous, oily, saccharine, saline, and watery principles. A standard diet contains some or all of these constituents in various proportions.

Milk should always be bountifully supplied for all adolescents, as an essential part of their staple diet. It should be fresh milk, at all events in the country; for it is simply the result of bad management that the morning milk is consumed in the evening, and the evening milk in the morning. In towns, where the milk is often brought from a distance, this defect cannot be obviated. But there is no justification for giving children at school *sour milk*, as is frequently the case. It is most injurious, and indefensible; for it can always be boiled on arrival.

As milk has been shown to be a fertile cause and mode of communication of disease in all communities, the greatest care should be exercised in the selection of the supply for all great schools; and while one scarcely likes to give any advice that may seem to interfere with the freedom of the master in the choice of his purveyors, I cannot but think that greater safety would be found in obtaining the supply of milk from the school's private

dairy, or from one large farmer, whose farmyard, cattle, and dairy, should be under the supervision of the medical adviser of the school; in this way greater care would be exercised by the farmer, not only by reason of the medical supervision, but also by reason of the fact that the propagation of disease from his dairy would mean, at all events, temporary financial ruin, thus making him scrupulously solicitous to reduce the risk to a minimum. I am aware of the argument, that where the milk supply is obtained from several sources, only part of the school would be affected in the event of milk poisoning; nevertheless, I maintain that the risk is more than proportionately increased where there are several possible centres of poison.

It has been repeatedly proved that, in its passage from the cow's udder to the human stomach, milk may become so poisoned as to cause death to the recipient. It is, moreover, a question, recently all but proved, whether disease in the cow itself is not propagated in this way to the consumer.

So great a mortality has been produced from this cause, that it seems to me the imperative duty of Government to carefully and systematically inspect the cattle, their byres, and the dairies, and to visit criminal neglect and fraud with severity. This inspection of dairies was undertaken by the Government in 1887.

Mr. Ernest Hart, in a paper read before the Social Science Congress in the autumn of 1883, furnished a record of eighty-three milk *epidemics*, representing 5000 *cases of disease*, and 580 *deaths*, in about ten *years*.

In unhealthy seasons, and whenever infectious illness is epidemic, milk should always be boiled before being consumed. So frequent is the illness arising from the consumption of milk, that strong grounds exist for urging that no milk should be drunk without first being

boiled. Perhaps I should go a step further and suggest that inasmuch as tuberculosis, scarlet fever, diphtheria, typhoid fever, not to mention other possible diseases which may be disseminated by means of the milk of cows, are known to arise from milk-drinking, it should become an established rule in schools that milk should invariably be boiled before it is drunk. For it is difficult to conceive a more perfect solution for the development of germs than is provided by milk, one germ falling into such a fluid producing millions of its kind.

There are some masters, physicians, and moralists, Meat. who hold that a boy should be allowed meat only once a day. To this I agree in the case of young boys; but for the average public-school boy I do not think it is sufficient. He requires meat twice a day during his actively-growing years, or, in other words, during the time he lives at a public school. It will be admitted that to produce the highest state of health in the adult, meat once a day is at all events essential to cover his wear and tear. If that be true, then I maintain that a boy needs meat *once* a day also to provide for *his* wear and tear, which is far more active than in the adult; and, I would add, he requires meat a *second* time to supply the material for growth. The meat should be given at breakfast and at midday dinner, and on no account in the after part of the day.

If we will only observe Nature, we shall see that she provides in milk—which is the natural food for rapid growth—an excess of nitrogenous matter, which is, consequently, unsuitable, as a staple diet, for the adult. But the young animal cannot prosper without this excess, as he has also to provide for growing, which means that he must pile up the excess of nitrogenous matter in the form of a daily addition to the body. In fact, the

growing boy needs a large "income" in the shape of food, part of which he expends as "current cash," but a large proportion he lays by as "capital," to invest in growing; whereas the adult can spend all his income as "current cash." The latter may, perhaps, wisely keep a small reserve on "deposit" in case of a sudden demand for increased expenditure of force; but, after making this prudent provision, he should on no account capitalize a further sum in the form of corpulence or gout.

By meat, I do not mean butchers' meat only, but I include all that class of nitrogenous food—meat food, as distinguished from farinaceous food—which comprises also fish, bacon, sausages, eggs, etc., etc., with which a boy's breakfast is sometimes varied.

The *quantity* of meat or nitrogenous food supplied in the twenty-four hours at breakfast and dinner should be one pound of uncooked meat, including fat, which involves 20 per cent. of weight of bone, and 20 per cent. of weight lost in cooking, giving, therefore, 60 per cent. of fat and lean cooked meat, or 9·6 oz.

I have allowed the full amount of meat food that is wholesome for the strongest and biggest boys, or those who are growing rapidly. I have done this purposely, though I am aware that younger and less robust boys could not get through the amount I have specified; for them, three-quarters of a pound of uncooked meat is the usual amount required.

There are, however, some highly-bred delicate boys, who, with very spare appetites, are unable to take sufficient nitrogenous food at breakfast and dinner to provide for daily growth and daily wear and tear; such boys, few in number, should be allowed an egg or a little fish at tea-time, or some beef-tea at lunch-time, if their school-life is to be a period of health and progressive growth, and of effective preparation for subsequent work in the world.

If ever we islanders remove our national disgrace, and obtain our fish at a fair price—it could not be much dearer were we without a coast-line—I trust our schools will make it much more an article of diet for adolescents than is at present feasible; for it is an excellent food, containing about 95 per cent. of fibrine and 5 per cent. of fat, that is to say, it contains more fibrine and less fat than meat itself, with the exception of salmon, which contains 78 per cent. of fibrine to 22 per cent. of fat, and of eels, where the percentages are respectively 44 and 56. Fish.

Vegetables, especially green vegetables, are a necessity in ensuring health, but, as a rule, boys will not eat them in the autumn and winter, when cabbage is the prevailing green vegetable; consequently, every autumn and winter plenty of eczema is seen. This autumal eczema arises not only from deficiency of vegetables, but is also occasioned to a great extent by the clogging of all the secretions, especially from constipation, which always occurs, more or less in all persons, on the advent of cold weather. Vegetables.

On one occasion, when some boys were allowed as much meat as they could possibly eat, I saw a serious amount of eczema, so that, to ensure its removal, the supply had to be checked; while in other houses, where this custom had not been allowed, the meat being carved for the boys, and the quantity being therefore limited, the eczema did not appear. I do not believe the complaint arose so much from excess of animal food as from too great a ratio between the animal and vegetable food: the cause was the relative excess. The boys did not eat sufficient vegetable food to counteract the excess; and thus, on a large scale, I saw what I observe every winter when boys refuse to eat vegetables. Vegetable

salts are essential to health; they are absent from none of the tissues. They occur in the form of carbonates, lactates, phosphates, etc., of lime, magnesia, potash, soda, iron, etc. Without them, malnutrition arises in the form of general ill-health and scurvy.

To obviate this result plenty of soup with vegetables should be given in the winter once or twice a week; beetroot, too, can generally be obtained, is liked, and is wholesome.

Pastry. I often hear and read of complaints about the food at schools, especially dinner, being bad. At our public schools, and at our best private schools, I believe this charge is wholly untrue, for the masters buy, and see that it is supplied, the same quality of food for the boys as for themselves. In the average school, too, I believe the feeding is vastly better than it was even a few years ago.

Some boys—generally those who have most money—complain of the quality of their dinner, and fail to eat; the real reason being want of appetite, for they visit the pastry-cook's not long before the dinner-hour, and there regale themselves, so that they are unable to eat their staple meal, and find fault with the food provided by the master. Is there any reasonable being—even a boy—who thinks it possible, after enjoying all the tit-bits at a pastry-cook's, that he can sit down to a meal of meat and potatoes without finding fault, though attributing it to the wrong cause? This practice ought to be stopped, as utterly injurious to health. Masters should induce the boys to spend their pocket-money only after dinner. Failing thus to induce the boys, masters should go a step further, and request the pastry-cook to refuse to serve boys before dinner-time. I think the shops might well be "out of bounds"—say between 11 a.m. and 2 p.m.—so that the

boys should be enabled to eat their staple diet of meat and vegetables before the delicacies—by no means to be despised or forbidden—of the pastry-cook are allowed.

I would lay it down as an axiom, that a boy who cannot eat his dinner has either a hamper, or has visited the pastry-cook's, or that the food is too rough for a delicate stomach, or that the boy is ill and should be sent to the doctor.

But if school authorities would supply, or even encourage the use of, *jam* or marmalade at tea-time, instead of trying to check the boys' visits to the pastry-cook's, I believe the desire for the pastry-cook's delicacies between meals would be less acute: much to the gain of the boys' health. It seems to me, on this subject as on many others, that most of those in authority fail to appreciate the first principles of government. They strive too often to thwart movements and practices which are absolutely uncontrollable, instead of recognizing the inevitable laws imposed by Nature and endeavouring to guide aright what they cannot control. The good horseman, having lost such control over his horse that he cannot stop him, tries only so to direct him that he shall not hurt himself or others. Many are the appetites and passions, many the communities, many the individuals, who, treated thus, might be kept under perfect control.

Hampers from home, generally injudicious in their Hampers. contents, are a constant source of illness. It is very pleasant for a boy to receive presents from home while at school; but parents should take care to send nothing which, either from quantity or quality, can injure health.

In his excellent little book on "Boys and Masters," Mr. Gilkes has briefly expressed the evils of hampers, thus: "Appleton has a hamper twice a term, and gets

sick in twelve hours after it has come; and so do many of his friends."

In some schools hampers are already forbidden on this ground; and this will require to become the general rule, unless parents show more wisdom. But, on the other hand, masters must see that their boys are not detained in school at meal times, so that either the meal is cold, or insufficient time is allowed for eating.

Alcohol. The question of allowing or supplying alcohol, in any form, at schools, is one that demands most earnest thought in considering the training, from every aspect, of the young.

This subject, however, is too large for discussion in this book. I have already considered it fully elsewhere.*

Beer I believe to be unnecessary for boys, and I should like to see it, as is gradually coming to pass, less and less used as an ordinary article of their diet.

The animal propensities of boys are quite sufficiently active without the *stimulating* effect of alcohol, and they are always ready enough for sleep without its *sedative* action. There is, roughly, only one other property of alcohol: that is, its *heat-producing* power in the system; but for adolescents the best heat-producer is sugar, which far exceeds in efficacy either fat or alcohol.

To enable boys to abandon this needless drink it is essential that parents and physicians should co-operate with masters.

Beer is usually provided for boys at school, and, if

* "The Preservation of Health, as it is affected by Personal Habits, such as Cleanliness, Temperance, etc." The Essay on Social Statistics, awarded the Howard Medal of the Royal Statistical Society of London for 1884. Longmans and Co., London.

"On the Impropriety of the Use of Alcohol in Schools." C.E.T.S. Publication Dépôt, 9, Bridge Street, London, S.W.

drunk at all, should be taken at dinner only. It is, happily, less used than formerly, and the milk, which is generally substituted, is, on the other hand, a very important item in a growing boy's diet.

But while one parent informs a master that "the doctor says my boy will never be reared unless he has two glasses of port wine a day;" and another, "my doctor says the boy requires a bottle of Guinness's stout every day," all efforts to teach and persuade boys that alcohol is not a necessity are seriously foiled.

I fear there are many members of my own profession, who, when parents state, "I want my boy to have wine, or stout, at school, instead of small beer," immediately furnish a certificate to that effect, and thus unhappily confirm parents in the belief that "the boy will not thrive, and cannot be reared without it." When such cases have been referred to me, as they continually are, though I have always carefully considered each one on its merits, I have never yet found cause to sanction the use of alcohol as an article of diet for boys in health: the boys, without it, manage, not only to exist, but to thrive, to improve in condition, and on leaving school to exhibit more robust health than when they entered. I sincerely wish, as far as the health and morality of schools are concerned, that we had more physicians like an eminent Scotch physician, not long since deceased. A certain parent insisted, on placing his boy at a very large private school, that his son should habitually have beer; this instruction the master disapproved, and resisted. Both being inexorable, the master said, "If you bring me a certificate from Dr. — to say that it is a real necessity for your boy, I will not further object." The parent, appeased, went to the physician to obtain the required certificate, with this effect; that instead of granting his request, "he prohibited alcohol both for father and son, to the enormous benefit of the father."

As a remedy in sickness I use alcohol whenever I deem it requisite; and this, in my opinion, is the only form in which it should be introduced into schools.

By some boys, and parents too, drinking is lightly regarded. They should, therefore, be made clearly to understand that *drinking, and smoking also* (usually begun at home), *are injurious for growing boys, owing to their effect upon the nervous system*, quite apart from the moral reasons for abstaining, and the prohibitory rules of the school. The master's position in enforcing such salutary rules should be strengthened by both the parent and the physician.

Neither parents nor masters can for one moment sanction smoking or drinking for boys. Even on the grounds of expediency the practice should be forbidden. Parents, too, must surely see that, if practised, it must be always carried on *sub rosâ*, and thus dissimulation is engendered, and openness of character, which is so specially attractive in youth, tends to be frustrated, with unhappy effects, throughout life. It is the repetition of acts, whether covert or open, that leads to habits: and habits make character.

VII.

SCHOOL.

HAVING fully discussed all matters relating to boarding at school, the consideration of the occupation at school naturally follows, and we shall discuss hence Work, Play, and Illness, in their order.

CHAPEL.

Some private schools have a chapel of their own; others use the parish church. Most public schools have their own private chapel, which is used either once a week, or every day of the week, for morning prayers at 7 or 7.30 a.m.

For some time during the year these chapels need Warming. artificial *warming*. There are two ways of warming: the *right* way is to light the fire on Monday morning, and let it out—if at all—on Saturday night; the *wrong* way is to light it on Saturday night, and let it out on Sunday night.

It would be bad enough to use a chapel once a week without any warming, but even in such a case the walls, floor, and seats would alone be cold; the case is infinitely worse, I think, when the fire is not lighted until Saturday night, for the moisture from the warmed air simply condenses on the cold walls, floor, and seats, and makes them

reeking wet, producing far more colds and discomfort than would result from the absence of a fire, besides causing mildew, which is deleterious to health. In all cases, whether the chapel be used only once a week or every day of the week, the warming should be continuous; sending boys to chapel once a week with reeking walls, and to chapel every morning at 7 a.m., when the place is not thoroughly warm, is both a disagreeable and a dangerous practice. But while the warming should be efficient, it should not be excessive; the chapel should not be converted into a hothouse. Under the arrangements that generally prevail, and even in the absence of this excessive heat, colds are caught, and serious chills occasioned, in consequence of imperfect *ventilation* not allowing the air, which has become injurious on account of the large numbers present, and the exhaustion of oxygen by the gas, to be sufficiently purified; the system consequently becomes depressed, and much more susceptible to a chill on leaving the chapel.

Ventilation.

The ventilation of chapels should engage greater attention than it does. By aid of the constant circulation of the warm air with which they are usually warmed, a scheme of ventilation should not be difficult; in fact, Boyle's air-pump ventilators in the roof of all churches and chapels would effectually provide it.

A very large proportion of colds are distinctly traceable to chapels and churches, not so much, I think, from imperfect warming—though this is defective enough—as from the depression caused by the respiration of pre-breathed air, and the poisoning occasioned by the respiration of the burnt fumes of gas. As evidence of the fact I would point to the number of boys who leave chapel during service on account of faintness or bleeding of the nose, and to the general somnolence induced in those

who remain. Were more care devoted to the ventilation of churches and chapels the clergy would find more attentive audiences, and their hearers would not so often give the preacher the credit of possessing soporific powers. But, at present, architects scarcely deign to consider that, in the exercise of their art, the question of ventilation, or even the science of acoustics, is within the range of their department in the construction of ecclesiastical edifices.

With reference to the acoustics of a school-chapel Acoustics.
hardly any condition can be more prejudicial to the value which a boy sets upon his Sunday—which should be a hallowed day to him—than to attend chapel constantly during the most impressionable period of his life, without ever distinctly *hearing* the “Lessons” read, or the “Sermon” preached by the head-master, who has usually been selected for the post on account of the special influence he is assumed to exert from the pulpit.

As far as possible the system of electric lighting should Artificial
Light.
be extended to the school-chapel.

SCHOOL ARRANGEMENTS.

In previous sections I have dwelt only upon the arrangements for *living* at boarding schools. I now propose to discuss the arrangements necessary for *work* at school, with reference both to day and boarding schools.

Our first question must naturally relate to the place where the school work is to be done. This usually takes place in what are termed “class-rooms,” the best form for which I shall now proceed to describe.

CLASS-ROOMS.

Situation. On this subject the section should be consulted in which I have described the conditions required in selecting the *situation* for a school, on page 16.

Construction. All school-rooms should be *built* with at least 14-inch walls; these walls should be hollow, and ventilated below on the outside, and above on the inside, in order to provide a continuous current of air between the inner and outer walls, and thus prevent damp and mildewed walls. There should further be a damp course above the level of the ground, which prevents moisture being carried up the bricks from the soil on which the wall stands. All class-rooms on the ground-floor should be properly under-ventilated; by this means a dry basement is ensured, and the continual rising of damp air between the boards, charged not only with moisture, but also with the noxious effluvia from "dry-rot" and other fungoid growths, is avoided. This condition would be still more completely secured if the whole of the ground within the building were covered with six inches of concrete. The floor should always be of wood, and not quarries, except in passages. Many of the class-rooms in some of our highest schools require *razing* to the ground, while others need *raising* to the ground, for some of our boys are still educated in underground cellars. It is, unfortunately, still necessary to insist that all school-rooms should be built above the level of the ground, and those at present in existence which are below ground should be abandoned.

Size. Class-rooms should be constructed to hold thirty boys and their master. They should never hold more, for this number is as many as any one master can control and teach effectively. In the section on "Dormitories" I

have strenuously insisted that each pupil should be allowed at least 800 cubic feet, together with efficient ventilation. I have urged this on the ground that a boy occupies his room continuously for eight or nine hours.

But in a class-room, where a boy is never more than Air-space. one hour continuously—or, at all events, should not be—this full extent of space is not of so great importance. I, therefore, suggest as a *minimum* that in all class-rooms 500 cubic feet of space should be allotted for each boy. If this 500 cubic feet of air-space is all that can be provided, it is essential to remember that the air needs changing six times per head per hour, in order to allow the requisite 3000 cubic feet per hour, and thus prevent the room from smelling “stuffy.” But, as I have already stated, it is difficult in our climate to change the air more frequently than three or four times an hour without causing draught, unless the incoming air be warmed; and this amount of change can be effected with more or less ease in every case.

In addition to providing this cubic space it is a salutary rule that all class-rooms should be vacated every hour or every hour and a half, if only for five minutes, in order to secure a thorough flushing by fresh air, besides the constant current during their occupation.

No master should vacate his form without first opening the windows, so that the next comers may find a sweet instead of a foul room.

A typical room, therefore, which would supply the requisite cubic space for thirty boys and one master, would measure—

40 feet in length,
25 feet in width,
16 feet in height,

with a floor area of 1000 superficial feet, or thirty-two square feet of floor space (Fig. 16).

The Committee of the Council of Education advise as minimum requirements that the height should be twelve feet when the superficial area is under 360 square feet, thirteen feet when under 600 square feet, fourteen feet when above this, and so on proportionably.

Light :
Natural.

There should be a window area of 225 superficial feet, or three windows of about 10 ft. 6 in. \times 7 ft. 6 in., on the right-hand side of the master where he stands. Thus (Fig. 16):—

The sills of the windows should be at least four feet above the floor,* so that the light may enter above the pupils' heads, and the pupils may not be continually looking out. There should be fifteen superficial feet of window space for every 1000 cubic feet of space; and this amount can be allowed without too great a cooling of the rooms. There should never be less window space in any room than one-tenth of the floor area. The windows should be arranged on the left-hand side of the pupils as they sit at their desks, in order to avoid a shadow being thrown upon the books. The walls should be distempered a light colour, and thus reflect as much light as possible. Some attention also should be bestowed on acoustics by architects, so that every pupil may hear distinctly what is said, without echo.

Light :
Artificial.

Liebreich urges that the lighting of the rooms in the evening ought to be as similar as possible to that by day—with the light on the left of the pupil.

Gas-lights should be protected by a glass cylinder, to produce a steady light, but should not be covered by

* "Healthy Schools," by Mr. C. E. Paget.

ground glass shades, which obstruct much light; and reflectors should be used.

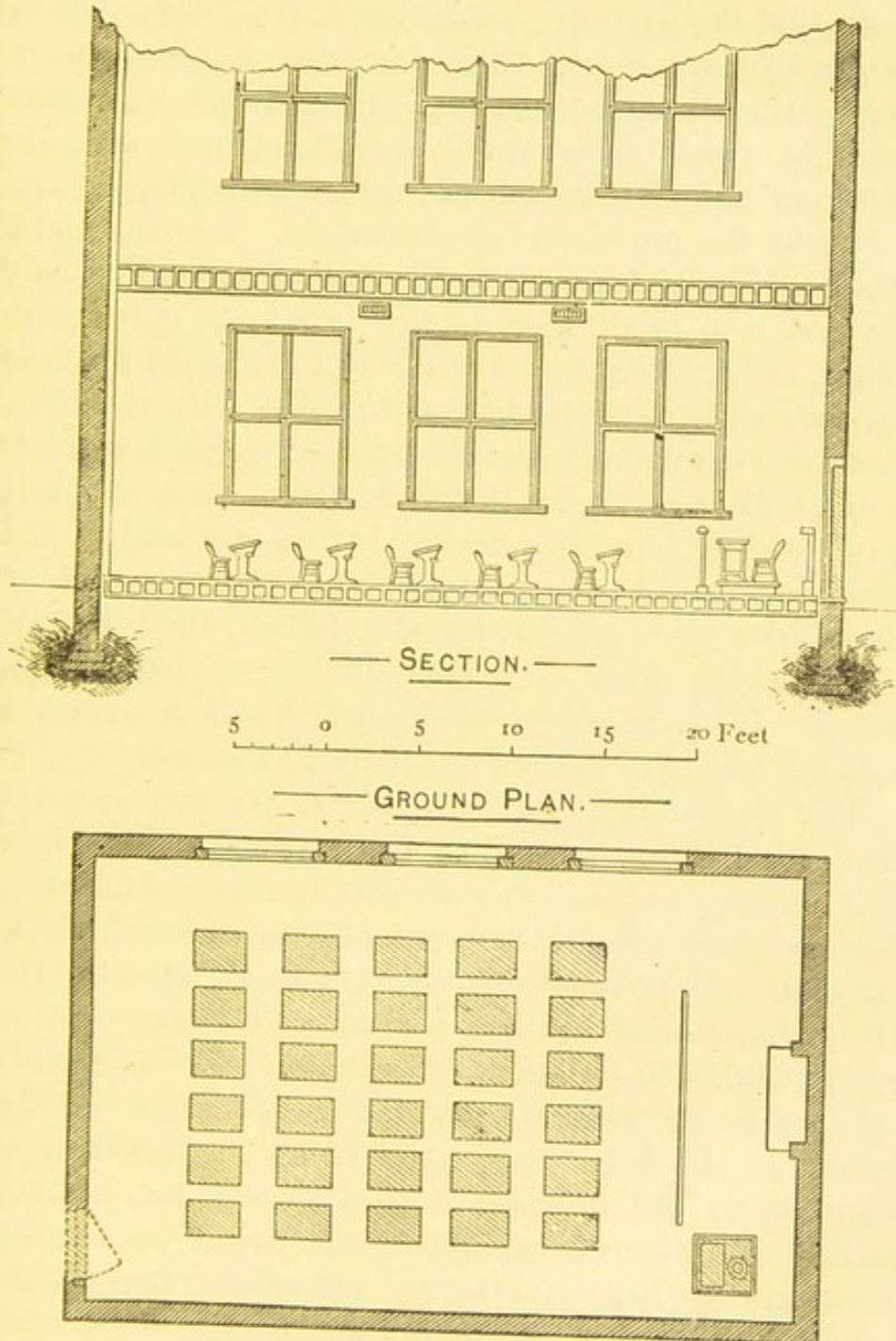


FIG. 16.—THE MODEL CLASS-ROOM.

The question of *eyesight* is so intimately concerned

with the construction of class-rooms, and their arrangements of lighting, together with appropriate desks and seats, that the subject must be referred to. The defects of eyesight, as occasioned by education, are becoming a very serious national concern. It is a fact, that boys working under unfavourable conditions, and with insufficient light during school-life, are sustaining serious injury by the production of short-sight. Sooner or later this result must frustrate our desires of appointing only the best men to all posts in the "services," government offices, and professions. For the eyes are tested for most appointments, cases of short-sight being weeded out, so that when applicants with this defect are refused, appointments will have to be allotted to those whose sight is good, without special reference to mental ability and acquirements. At the present moment 10 per cent. of those who have passed for the Indian Civil Service appointments alone are inadmissible on account of this defect. It is, therefore, as I have stated, becoming a national question, and not one limited to schools.

The electric light will soon banish the evil of gas, I trust, for lighting purposes. Until we are able to have this luxury, one gas-burner at least is requisite for every four scholars. Every burner consumes as much air as an adult, and poisons it far more with its fumes. The class-rooms would be more healthy were there placed in every room the "Perfect Ventilator," or a Boyle's chimney-breast ventilator, which would carry off the fumes of the burnt gas, as well as the products of respiration; and if Tobin's inlets were added, a much needed continual circulation of air would be secured. It is always important to get rid of the fumes from artificial light; but the outcry against the deleterious effects of gas-fumes, nevertheless, fails to be borne out by fact, for Dr. Odling found, for equal illuminating power,

that candles introduced more impurity into the air than gas. Again, Dr. Meymott Tidy sets this question at rest by the following excellent and convincing table, showing the oxygen consumed, the carbonic acid produced, and the air vitiated, by the combustion of certain bodies so burnt as to give the light of twelve standard sperm candles, each candle burning at the rate of 120 grains per hour:—

A COMPARISON OF THE VARIOUS FORMS OF ARTIFICIAL LIGHT.

Burnt to give light of 12 candles, equal to 120 grains per hour.	Cubic feet of oxygen consumed.	Cubic feet of air consumed.	Cubic feet of carbonic acid produced.	Cubic feet of air vitiating.	Heat pro- duced in lbs. of water raised to 10° Fahr.
Cannel gas ...	3.30	16.50	2.01	217.50	195.0
Common gas ...	5.45	17.25	3.21	348.25	278.6
Sperm oil ...	4.75	23.75	3.33	356.75	233.5
Benzole ...	4.46	22.30	3.54	376.30	232.6
Paraffin ...	6.81	34.05	4.50	484.05	361.9
Camphine ...	6.65	33.25	4.77	510.25	325.1
Sperm candles ...	7.57	37.85	5.77	614.85	351.7
Wax ...	8.41	42.05	5.90	632.25	383.1
Stearic ...	8.82	44.10	6.25	669.10	374.7
Tallow ...	12.00	60.00	8.73	933.00	505.4
Electric light (Hammond) }	None.	None.	None.	None.	13.8

The preceding figures prove the necessity of resorting to the electric light for our class-rooms and sleeping-rooms as soon as it can be utilized at a reasonable cost.

This course has been effected in some schools—Rugby, for instance—and I trust that, as opportunity offers, it will be introduced generally.

In a paper discussing the effects of electric light upon the eyes, Mr. Hartridge,* Surgeon to the Royal Westminster Ophthalmic Hospital, urges that in the present state of our knowledge it may be assumed that good and sufficient sunlight is the illumination best

* *British Medical Journal*, February 20, 1892.

suited to the eyes, and that therefore sunlight should form our standard by which to compare artificial forms of illumination.

A COMPARISON OF THE CONSTITUENTS OF SOME OF THE DIFFERENT FORMS OF LIGHT.

	Red.	Green.	Blue.	Violet.
Sunlight	1.4	1.6	0.5	0.1
Electric light	2.0	1.0	0.8	1.0
Paraffin	3.0	0.06	0.2	0.1
Gas	4.0	0.04	0.2	0.1

It will be seen that the electric light contains a smaller number of those rays which belong to the red end of the solar spectrum, and in this respect most nearly resembles sunlight; next to the electric light comes paraffin, and last of all gas. And it has been proved that the rays which belong to the red end of the spectrum, *i.e.* those of the greatest wave length, are those which are most liable to irritate the retina. In this respect, therefore, the electric light is superior to its competitors.

The electric light, moreover, gives out no products of combustion, and a minimum of heat which is so irritating to many eyes.

The incandescent electric light, when carefully shaded, and judiciously placed, is the best form of artificial illumination; and no well authenticated case of injury to the eyes has yet been recorded.

Ventilation. The subject of ventilation has been so fully treated in preceding pages that a few words now will suffice.

Each class-room requires treatment in its own way by an intelligent master, according to its size, the number of

occupants, the aspect, and according to the direction and force of the wind.

It is clear that there is only one mode in which the external air should enter; for as cold air is specifically heavier than warm air, if it enter a room near the floor, it will remain there, and exist as a stratum of air many degrees colder than that above it. It should, therefore, enter at the upper part of the room, so that as it naturally descends—being heavier—it may mix with the warm upper air of the room, and thus be warmed somewhat in its descent. This action, however, often causes a draught, the fault resting not in the principle, but in the method adopted for carrying it out. For instance, if much air be required in a room, which is well-warmed inside and the air very impure, it is palpable that with only one ventilator provided, 9 in. \times 3 in., as is frequently the case, the rate of entrance will be exceedingly rapid, and the stream of cold air will consequently pour down in a rushing continuous current, resembling a ray of light through a small hole; a sufficient number of inlets should accordingly be established.

It must be borne in mind that the smaller the inlets and outlets provided for ventilation the greater the "draught"—a draught being caused by the rapid passage of air through too minute an opening.

The principle in question may be effectively carried out by means of Sherringham's ventilators; or Ellison's conical bricks inserted a slight distance from the ceiling, or utilized behind hot-water pipes provided for the influx of air warmed in its transit over the pipes; or by Tobin's inlets; but every class-room should be supplied with Hinckes Bird's (Fig. 17) inlets between the two sashes of the window, by means of which the air enters with a rush, about half-way up the height of the room, and gradually falls, warmed by the upper stratum of air in the room.

Warmth. It is imperative that class-rooms should be artificially warmed in cold weather, whether the cold occur in summer or winter, if growing children are not to sit and shiver, and work is to be obtained from them. To begin the warming of rooms at school according to the

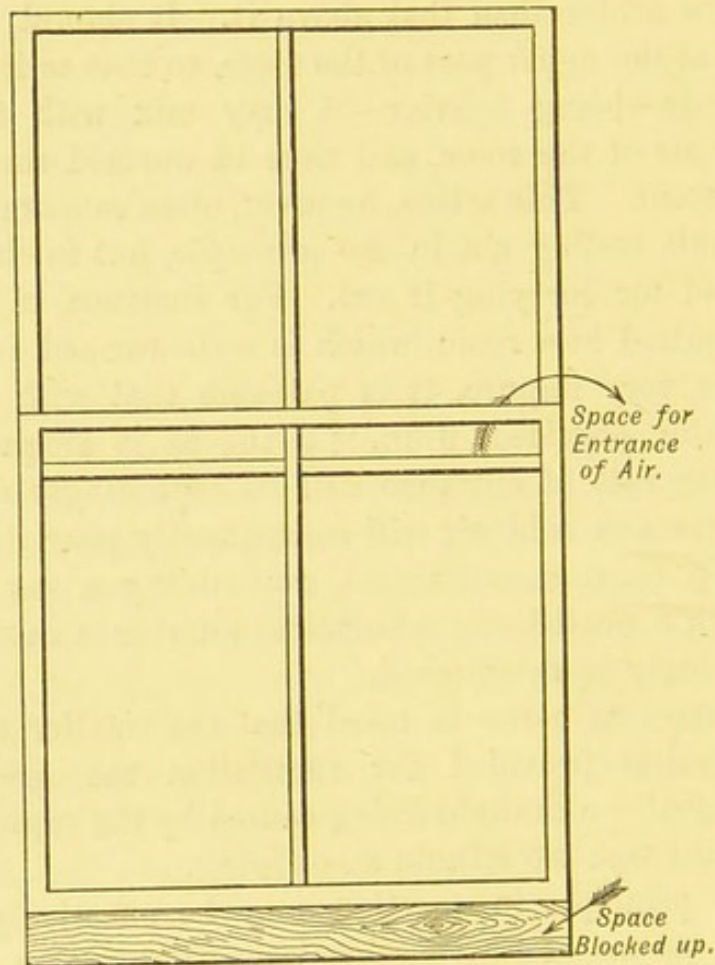


FIG. 17.—BIRD'S INLETS BETWEEN THE WINDOW SASHES.

date, instead of the temperature of the atmosphere, is a most unreasonable and ignorant proceeding, and yet it is still largely in force.

To permit the young to sit in cold rooms is frequently the cause of a low general state of health, or delicacy, even when no actual immediate illness is occasioned.

No class-room should have a temperature below 50°

Fahr., nor above 60° Fahr., where it can be avoided. And the intensity of the artificial warmth supplied must vary according to the season of the year, and should be regulated with considerable care. Thus in summer, with the external temperature at 75° to 80° Fahr., a class-room with a temperature at 50° Fahr. would feel exceedingly cold, when summer clothing is worn; while in winter, with a temperature of 30° Fahr. outside, a class-room heated to 60° Fahr. would be overheated, and every one who remained in it for some time, and then ventured outside without an extra coat, as school-boys usually do, would incur great risk of cold or severe illness. It is the ratio between the inside and outside temperature that must be observed.

The best warmth in a class-room is that which combines warmth and ventilation. Almost any arrangement is better than "close stoves" which do not ventilate, or gas-stoves which discharge their burnt fumes into the room.

Under the subject of ventilation I spoke of the provision of means of inlet for fresh air near the top of the room. This is undoubtedly the best plan, where the fresh air is obtained from outside and is cold; but if the fresh air enters warm, the place of entrance should be below and not above, since it then rises, after entrance, to the upper part of the room; if the air, however, enter above, little circulation will take place, as the warmed air, being specifically lighter, will remain near the ceiling.

The open fireplace is an excellent arrangement for warmth and ventilation combined—in small rooms especially. For larger rooms, hot-water pipes form an admirable system, especially if means be provided for passing fresh air over them, which becomes warmed in the transit. Hot-air flues also, supplied with a revolving

fan, will sufficiently warm a large room, or a whole house, when the entering air is carefully obtained, when the flues are large enough to be properly cleaned out, and when the incoming air is not heated above 70° to 75° Fahr., since at such a temperature it retains sufficient moisture, is not burnt, and consequently is never oppressive.

Besides the preceding arrangements there are Galton's Grate, George's Calorigen, and Bond's Euthermic—all admirable plans for warmth and ventilation.

It is scarcely to be believed that "traditions" in some of our older public schools only allow fires to commence and terminate on a certain day in a certain month, quite irrespective of the weather, and of the discomfort and illness thus occasioned to masters and boys. Is it necessary to state that fires should be lighted and extinguished according to the weather alone? Moreover, it is essential to health and comfort that masters should insist upon class-rooms being opened, aired, and warmed several days before the commencement of each term, so that boys are not placed in rooms little better than ice-houses.

Drying-
room.

In all day-schools arrangements are requisite for drying overcoats and boots in wet weather. Without this precaution much unnecessary ill-health must be occasioned, which may cause the pupil lifelong suffering, or possibly a fatal illness. Mr. Murgatroyd, in his excellent paper on school construction, says:—"The cloak-room should be large, provided with stands or horses and hook rails, umbrella stands, lockers for shoes, etc., and at one side should be a drying chamber, fitted up with galvanized iron drying-horses, well ventilated, and capable of being quickly heated whenever the day is, or is likely to be, wet. This drying chamber is under charge of an attendant, who sees to the drying of wet clothing during the

school hours. An adjoining chamber, also heated, and fitted with perforated metal shelves, serves for drying boots."*

A still better plan (Fig. 18) for a drying apparatus was shown at the International Health Exhibition, arranged by the Rev. E. F. M. McCarthy, and in use at King Edward's School, Birmingham.†

Arranged round the room are a series of partitions, each boy having his separate compartment, which is numbered. In each compartment are two hooks, one in

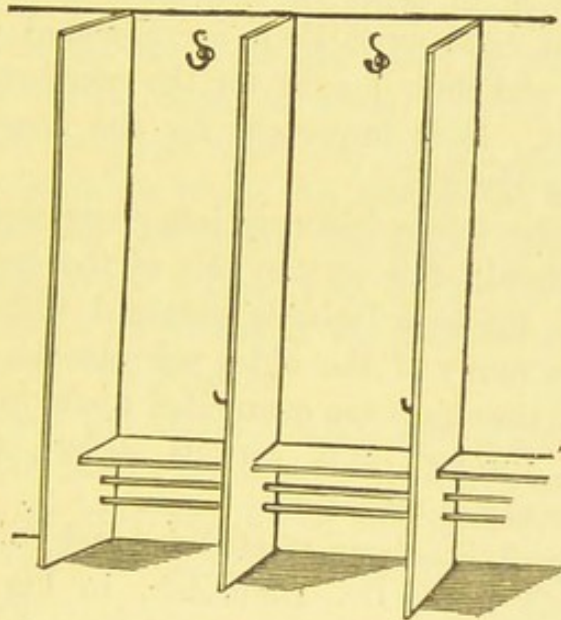


FIG. 18.—THE DRYING-ROOM FOR DAY SCHOOLS.

the centre for hanging up outdoor clothes, and another at the side for the umbrella. Below is a narrow ledge for gaiters, etc., and underneath this are the hot-water pipes, running round the room; while on the floor, to catch the drippings from the umbrellas, is a drainage-trough in connection with the drain outside. A current of air enters through the lower perforated panels of the

* International Health Exhibition Conferences.

† *British Medical Journal*, Nov., 1884.

door, and passes out by the window at the top; the damp and disagreeable vapours arising from the clothes, etc., while drying, are thus effectually removed. The accompanying sketch will give an idea of the arrangements, the following being the detailed dimensions:—Height of partition, 5 ft. 4 in.; width, 1 ft. 2 in.; depth, 8 in.; height of ledge, 1 ft.; height of hook for umbrellas, 2 ft. 6 in.; width of drainage-trough, 3 in.; length of hot-water pipes for 120 partitions, 142 feet.

Seats and
Desks.

The question of seats in class-rooms is a matter of great moment, both as to their arrangement with regard to the light, and their height for the comfort and health of the pupil. It is important for the boy, but trebly important for the girl.

In most schools the desks are inappropriately arranged. The light should fall on the left of the boy, by which means alone the best light is obtained without shadow. Moreover, in many of the older schools the light is insufficient, so that boys are compelled to stoop and damage their sight through this serious defect, which could generally be easily remedied.

This subject has been treated in such a masterly way by that able man, Dr. Liebreich, in his lectures on "School Life, in its Influence on Sight and Figure," that scarcely anything further remains to be said. I shall, therefore, only give a short analysis of his lectures. I would at the same time strongly recommend every master, parent, and boy, to read them in their entirety.

Dr. Liebreich has shown that short-sightedness is produced almost exclusively during school-life, in many cases by developing a pre-existing tendency, but in others, where no predisposition exists, by actually generating the defect, so that the infirmity is continually on the increase. Short-sightedness is not only in itself

a direct inconvenience to the individual, but the efforts of the child during growing years to assume a posture favourable to seeing, cause stooping and curvature of the spine, so that deformity and consequent ill-health are the frequent results. Besides this, by insufficient light and by its inappropriate situation, a diminution of acuteness and of endurance of vision are produced, and work in consequence has to be given up or diminished.

The right form of school-room is oblong, of which I have already furnished a description and sketch (Fig. 16, p. 187), with the windows high up on one of its long sides; the forms, which should have properly-regulated backs with desks close to them, should be arranged parallel with the short sides, having the windows on the left as the boys sit, while the master, on a raised seat, should be at the end facing the class. No boy should read with the book nearer than 10 to 12 inches; and the desk should be raised as an inclined plane, 20° for writing, and 40° for reading.

The edge of the desk or table should be in the same perpendicular line with that of the seat, and the top of the back of the seat should be one inch lower than the edge of the table for boys, and one inch higher than the edge for girls.

The figures A, B, and C, in the diagram (Fig. 19, p. 198) show sections of the different sizes of desks and seats.

C is adapted to the average sizes of children of seven, eight, and nine years. B is suited for children of ten, eleven, and twelve years. A is adapted for children of the age of thirteen and upwards.

The desks are of uniform height from the ground, and the proportions for the different sizes of children are regulated by the height of the seat *d*, the distance of the backboard *e* from the front of the desk, and the position of the footboard *f*.

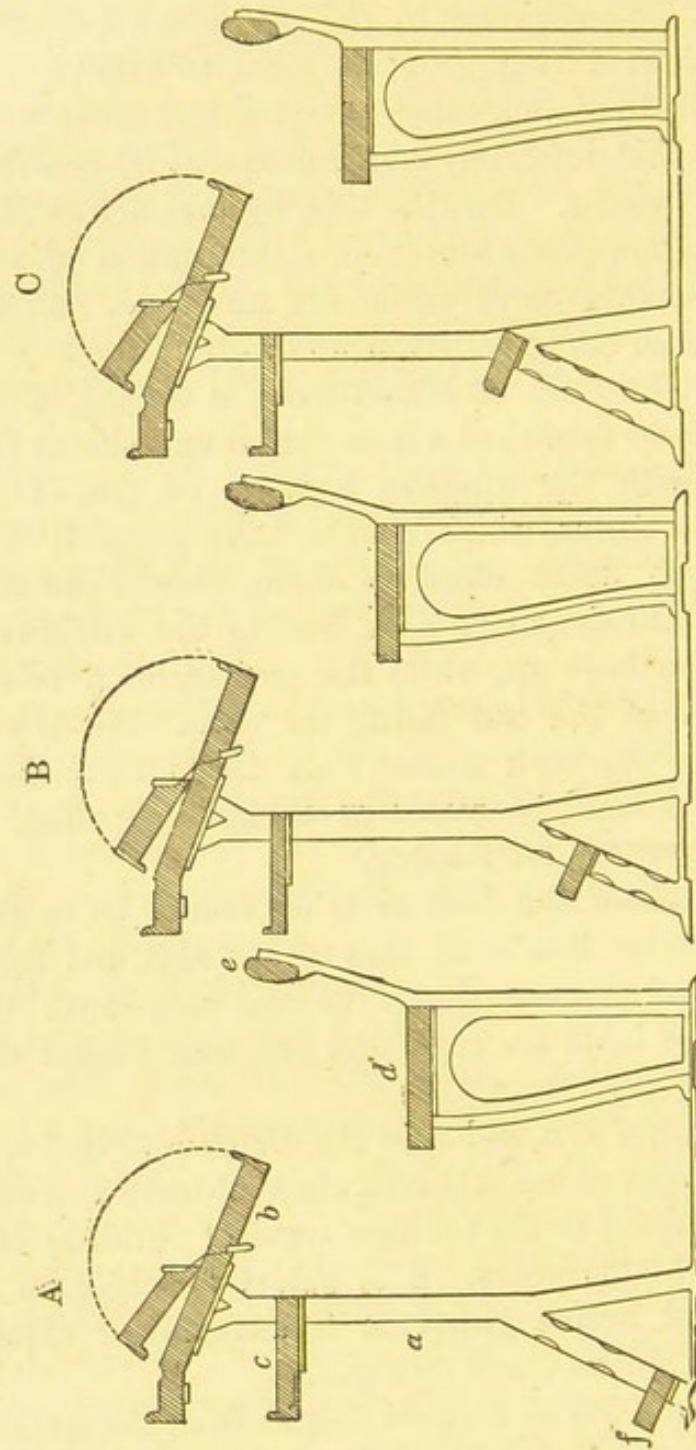


FIG. 19.—LIEBREICH'S DESKS AND SEATS FOR PUBLIC SCHOOLS.

For female children the back-rail is placed in a higher position than for male children.

These desks are fitted for one, two, four, six, or more

children: but the desk for four is most recommended by Dr. Liebreich.

They have a separate flap, *b*, for each child, so that different studies may be pursued at the same time at one desk, and by a special arrangement (an interrupted back-rail), each child can reach or leave his place without the least disturbance to the others.

The flap serves three different purposes:—

1. To bring the edge of the desk near enough to the children to enable them to use the backboard when writing.
2. To transform (by turning up) the inclination proper for writing into the inclination suitable for reading.
3. To allow the children to stand up in their places, and to pass in and out easily when the flap is turned up.

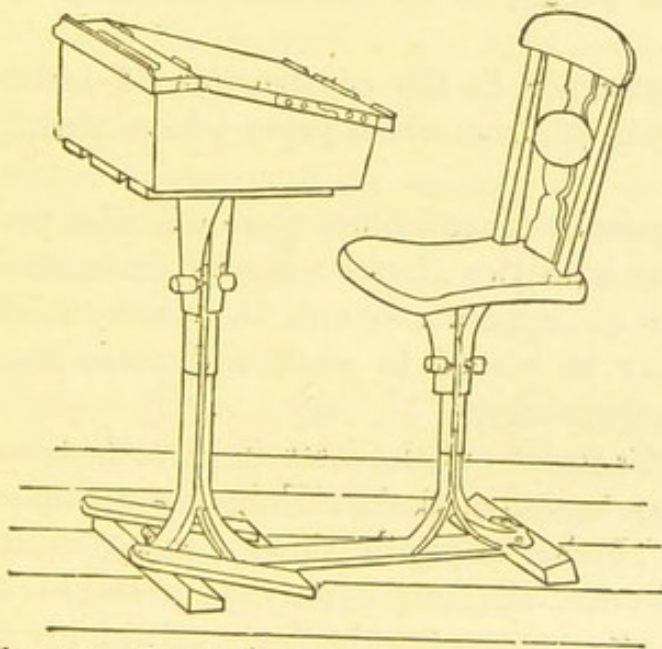


FIG. 20.—THE "MODERN ADJUSTABLE" DESK.

Two feet of desk space in length should be allowed to each pupil: the depth of the desks should be 15 to 24 inches, and the seats themselves 12 inches deep.

There was an excellent arrangement, shown at the Health Exhibition, for seats and desks, invented by Dr. M. Roth, and called the "Modern Adjustable Desk" (Fig. 20).

Where "forms" and ordinary chairs are in use, the nearer they are placed to the desk the less scope is afforded for lounging and for producing deformity of the spine, and a narrow flat chest which is liable to be the precursor of consumption.

Lecture-
rooms.

One or more lecture-rooms are necessary according to the size of the school. They should be of a larger size than the class-rooms in order to accommodate a greater number, and their arrangement also should be different. A good laboratory, fitted with every convenience for physical as well as chemical experiments, and connected with these rooms, is an absolute necessity in modern education.

With reference to the construction of lecture-rooms, Mr. Murgatroyd, from whose paper I have already quoted, says—

"A physical science lecture-room will also probably be required to hold two classes; it must have its lecturer's table and an apparatus-room, in which a small gas-engine may be placed to work a dynamo machine for magnetic electricity.

"I prefer to set out the seats in these lecture theatres, rather than to assume that a certain area will accommodate a certain number of pupils, though, as a general rule, six square feet each should provide the necessary accommodation, including space for the lecturer and his apparatus. The pupils require bench seats, and a narrow ledge in front of them on which to write memoranda; and I have found it best to adopt the Isacoustic curve for arranging the setting-up of the rows of seats, *i.e.* to draw a line

(on the vertical section of the room) from the lecturer's table over the head of one pupil, seated, to give the place of the eye of the pupil next behind him. We thus get steps gradually increasing in height as they recede from the lecturer, and the advantage is that every one can see."

A room sufficiently large to accommodate the whole school is also a requisite; for at times the school must meet in a body, and such a room is also needed for examinations, speeches, and evening lectures and entertainments. It should be thoroughly warmed, and ventilated irrespective of open windows. This, as a rule, is wholly neglected.

The Great Hall.

WORK.

In discussing the question of work at school, it must be understood that I refer to the intellectual education which takes place during school-hours, and the hours occupied in the preparation of work. I do not include the important education of the senses which is continually going on, especially during the hours occupied by play and freedom from restraint, which is often the most valuable education of all, and should be encouraged by every legitimate means.

In considering the subject of school work the delicate organization of the child, who is placed under the teacher's influence for purposes of education, must studiously be borne in mind; for if even the borderland of overwork is reached lasting injury to the nascent brain may result; the very essence of teaching being to develop the brain, and educe its faculties.

The true object of all training and of all education is to develop the best type of manhood, and this ideal end should dominate all our methods of instruction.

Amount of
Work.

The *amount of work* is a matter of paramount importance to the growing boy, if the brain is to be developed and not stunted from early overwork; for it is one of the most obvious physical laws of nature, holding throughout the entire animal creation, that immature organs are incapacitated and deteriorated by excessive work, while they are developed, and rendered vigorous and active for adult life, by sufficient healthy and graduated exercise. But the exercise should be progressive, not stationary; for mental and physical exercise fit for a child is not sufficient for a boy, and exercise suitable for a boy is not adequate for a man. The converse is also true: that the exercise which is fit for a man is too severe for a boy, and that which is suitable for a boy is excessive for a child.

Not long since I saw a boy who was suffering intolerably from neuralgia in various parts of the body, caused by unsuitable work: he was seven years old, and passed five hours a day in school—from 9.30 a.m. to 1 p.m., with a quarter of an hour's freedom at 11 a.m., and then again at work from 2.30 p.m. to 4 p.m. This is slave-driving. Had the child been assigned a moderate period of work, and then an interval of play, much greater and superior work would have been done, and his health would not have failed.

It is an established fact, that the best work is not obtained at school where the hours are longest and the pressure greatest. Some time since, Mr. Charles Paget, M.P.,* tried in the village school on his estate at Ruddington a very interesting experiment. He was not satisfied with the general progress made by the boys, and accordingly provided them with a large garden. The school was then divided into two similar sections, one of which was kept to the ordinary school work for the usual

* "Overwork in Schools," by R. Brudenell Carter, F.R.C.S.

number of hours; the other for half of those hours only, the rest of the school-time being devoted to garden work. At the end of the term, the half-time, or gardening boys, had excelled the others in every respect—in conduct, in diligence, and in the results of study.

This fact has been proved also by Sir Edwin Chadwick,* from the experience of half-time schools, where the children actually excelled those in the Board School. He gave a prize to those who got first through the fourth standard, and it was found that the prize children gained it at seven years of age, the average age of attainment of the whole school being nine years and a half; whilst in the Board Schools, and all the long-time schools, it was ten! Mr. Mundella, M.P., originally hoped that he would pass the children through the fourth standard at ten years of age, but it was generally eleven and twelve.

In fact, Sir Edwin Chadwick has shown, from careful and direct observation, the length of time during which children, at various ages, can successfully devote continuous attention to a single lesson: thus—

Age of the child.	Duration of effective attention to one subject.
5 to 7 years	15 minutes.
7 „ 10 „	20 „
10 „ 12 „	25 „
12 „ 18 „	30 „

A great master has said, concerning the education of little boys, “Great care is taken that no boy shall, at any moment of the day, be obliged to sit in idleness, under any pretext whatever; when the stated quantity of labour

* “Overpressure in Elementary Schools:” The Health Exhibition Literature, vol. xi. p. 389.

is performed he goes to play; but while he remains in the school-room he has no right to be an instant unemployed. The reward of industry, a short cessation from labour, is immediate; so that a lively boy is not doomed to 'count the slow clock, and *play* at noon.' On the contrary, instead of watching with feverish impatience to see both the hands *culminate*, he employs himself ardently at his task: the instant he has accomplished it, constraint ceases, and he breathes empyreal air."

For elder boys a longer period of work is perhaps expedient, to teach them by degrees the vital lesson of continuous application, which is essential to men in after life.

The appropriate amount of work varies, of course, with individuals, in proportion to their stamina and mental ability. What is hard work for one is scarcely work at all for another. But whatever subject is being taught, it seems to me that the only way to ensure progress and happiness in the work, and secure an absence of overwork, is, very early in life, to let the pupil frequently taste the pleasure of success. Especially let him learn that which he can learn readily, and then gradually induce him to face that which is distasteful; and with each step of success will come an eager desire for progress.

The converse of this method is, unhappily, too often attempted. A pupil who has no taste for a certain subject, and makes no progress, is urged, driven, and punished for his failure; in fact, just in the same way as the child who cannot eat fat, or rice, for example, is kept for hours until it is eaten, to the serious detriment of his internal organs and his temper. Whereas if he had first been taught that which he could attain, he would then have realized his own power to attempt unexplored, and even distasteful ground. The Hills, from whom

I have already quoted, said : * “ The only effect of showing some indulgence to the predilection of youth will be, that, in place of uniform listlessness, every task will be performed with spirit, and every branch of learning will be, in its turn, the object of intense avidity. There is always a natural facility for making one acquirement rather than another, and with that the pupil’s ardour will commence ; but, except in a few instances, the difference of capacity for one study in preference to another is but slight, and will gradually waste away before the influence of circumstances. Nor, on the other hand, should it be forgotten by those who, in their eagerness for one acquisition despise every other, that in the web of knowledge no thread can be traced without pointing out something of the course of others.”

When the individuality of each pupil is more considered by parents and teachers, our boys and girls will be better educated, and thus rendered more fit for their future work in the world.

The question which teachers naturally ask, and expect to have answered in a practical way for their guidance in the management of pupils is, “ What is the amount of work that should be done ? ” The only answer is one of *scale*, for what is suitable for the age of nineteen is most unsuitable and detrimental for the age of seven. The following is the best scale I can furnish as indicating the ordinary amount of work for the average boy, including Sundays, but exclusive of the perfect mental rest during the periodical holidays, which, as a rule, comprise about four months in the year :—

* “ Public Education,” Hill, 1822.

TABLE OF SCALE OF WORK FOR SCHOOLS.

Ages.					Hours of work per week.
From	5 to	8 years of age	...	...	12 hours per week.
"	8 "	10	"	...	18 "
"	10 "	12	"	...	21 "
"	12 "	14	"	...	25 "
"	14 "	15	"	...	30 "
"	15 "	16	"	...	35 "
"	16 "	17	"	...	40 "
"	17 "	18	"	...	45 "
"	18 "	19	"	...	50 "

It may be said that this amount of work is insufficient ; but it must not be forgotten, as is sometimes the case, that boys have also to provide for growth and development while at school, and this necessity, if we follow Nature, must obviously limit the quantity of work to be required of them. When a boy is growing very rapidly, exceeding the normal $2\frac{1}{2}$ inches annually—as he often does from the age of thirteen to sixteen, but especially during his sixteenth year, the corresponding rapidity of growth of the girl occurring between eleven and thirteen, though pre-eminently during the thirteenth year—his work should be still further reduced, for his brain power is then simply insufficient for its performance. All the nourishment he takes at this period goes to make quantity, not quality, and all his tissues, the nervous tissues included, are like the rapidly-growing immature green stick, not the mature and sturdy oak.

It seems thus to be forgotten that a large share of strength is expended in providing for growth and development at the school age ; so that the allotted task and the excessive hours tell doubly. The greatest drawback to the human being at school is, that this growth and development necessarily proceed *pari passu* with

education. This cannot be obviated. For education must take place while the tissues are in a nascent and plastic state, since in this way only can they be developed into the highest state of perfection, whether they be nervous or muscular.

Now, using the word "supposed" advisedly—because the answer to the question is often merely a supposition—what is the supposed meaning of work at school? It is, apart from the attendant moral discipline, the development of the nervous tissue in the head—the brain—to the completest perfection, exactly as the gymnasium instructor endeavours to develop the muscular system. And as the latter sometimes forgets the proper aim of his instruction, and teaches his squads a mere series of tricks for the purpose of exhibition, so teaching often, nay, usually, degenerates into similar artifices for the purposes of examinations, and the brain is impoverished and damaged in the attempt. Examinations too frequently are solely regarded as the goal, and culture of nervous tissue is ignored.

It is one of the chief functions of the competent educator to graduate the training of the brain from short and easy tasks to more difficult and strenuous exercise. But, under the present system, it is constantly overlooked that the young are necessarily without the power of sustained endurance, which is only educed towards the end of the period of education.

The muscular tissue is soft, flabby, and powerless without use. The gymnast gradually brings it, by appropriate daily exercise, to such a condition of vigour as to fit it for any legitimate exertion that may be required. If he claim too much from it before it has reached this state, it becomes incapacitated.

In like manner, the nervous tissue of the brain can be brought to comparative perfection, step by step, by

appropriate use; and he is the typical educator who can thus develope the brain-structure to the completest degree, and render it capable of any reasonable effort. If, on the other hand, he educate unwisely, harm—sometimes fatal, often permanent—results.

“It has often occurred to me,” says Sir Crichton Browne,* “that if educationalists could peep through a little hole in the skull, and see the living, throbbing brain, and realize that it is a pulpy organ of about the consistence of calf’s-foot jelly; and if they could look at the minutest shred of it under the microscope, and admire one little galaxy out of the millions of starry cells that it contains, lying scattered amongst the strands and sources of its fibres, ‘like a swarm of fireflies tangled in a silver braid,’—if they could, as physiologists can, picture to themselves the functional activity of the brain—now, as at times of ease and abandonment, *shimmering* over its surface from point to point; now, as at periods of calm and connected thought, localized into a steady *glow* in certain regions; and now, again, as in moments of intense mental application, concentrated on one spot into a *spark* of surpassing brightness—if our educators could do all this, and if they could become practically acquainted with the brain, they would, I think, be more careful in the handling of it than they sometimes are, and be a little less ready to deny that there is any danger of exerting over-pressure on this delicate structure.”

There is so much for the teacher to consider in the process of education in each individual pupil, that thought must be spent if he desires to aim high. Each child possesses its own proportionate stamina and mental ability. The ability may exist potentially in abundance; but of what avail is it unless the stamina be sufficient to provide

* “Education and the Nervous System,” by Sir Crichton Browne, M.D.

a plentiful supply of good red blood to feed the brain? And whence is this derived, except as the result of good digestion, which can only be obtained by appropriate food, fresh air and exercise, and ample sleep? Yet we see how little care is bestowed in teaching children to masticate, instead of bolting, their food; and how little sleep is permitted, especially to the younger children at school, for supplying the loss by wear and tear, and for the formation of new tissue. Such matters are regarded by the majority of educators as beyond the pale of their duties, while I maintain that they constitute their essence.

I cannot impress the fact too strongly that the brain which is to be taught and trained, is an immature, growing organ, which, like all undeveloped tissues, will not bear strain. If it be supplied with good red blood, which is only possible when a maximum of health is induced, its vigorous growth can be realized. Diminish, however, the supply of healthy blood to the brain, evidenced by pallor and anæmia, and implying a supply of inferior quality, and the brain not only ceases to grow, but the tissue already formed deteriorates in quality. It is the number of the red corpuscles in the blood which indicates its nutritive quality; and when these are diminished, as they invariably are by deficient or inappropriate food, by insufficiency of air, light, and exercise, and by overwork, the brain is handicapped and incapable of genuine work. Look at school-children, trained under the existing system, at the end of the term; and their mere physical appearance condemns the method, or rather the absence of method, which now prevails.

Then, again, whence comes the individual brain which the teacher has to cultivate? We none of us need pride ourselves on our brains. True, we may have helped to make or mar them by our own industry or laziness;

though even this power of use and abuse is not entirely our own, but implies a largely inherited faculty, which demands a spirit of thankfulness instead of boasting.

Every brain is the product of many generations, and all its cells, fibres, and tissues work naturally and freely as they have been trained and taught to work in ancestors from whom they have sprung. The blood has been mainly accustomed to nourish muscles; the teacher suddenly requires it to nourish brain. The sensory apparatus has been wont to obey external stimulus; now the senses—sometimes violently—are arrested into quiescence, so that the boy may be stimulated from within. The nervous energy must flow in new channels; the will must somehow control, in unknown ways, the whole nerve structure, and make it laboriously perform unaccustomed work. The whole machinery of life must be remodelled; and nature frowns upon these abrupt revolutions.

It is true that the "genius" sometimes springs from a previously uneducated and practically dormant source; but this is of the nature of the "sport" in the vegetable world, well known to the gardener, and recognized as an unnatural, though much coveted growth.

The brains of children whose forefathers have led a muscular life need the gentlest handling, since their nervous tissue is unfit for pressure. It is thus palpable that what may be hard work for one child is scarcely work at all to another.

In assigning a limited scale of work I do not wish to imply that a boy should never exceed it. There are times when the elder boys may, and must, do more work, even double the amount, as, for example, in working for scholarships, exhibitions, and in competitive examinations. Moreover, they may work thus hard for a season with impunity, provided they work where there are sufficient

light and air, provided they do not live in the same air day and night, and provided they do not neglect their daily exercise. Where harm and death have resulted, the cause has been that these first principles of sanitary science have been wholly neglected. Nature's laws are inexorable, their infringement entailing certain punishment; and unfortunately, in these instances, the punishment falls on the innocent victim who is compelled to work under abnormal conditions.

But, as a guide to the average daily work of the average school-boy, the preceding scale is justified. Some teachers consider the scale to be impracticable while the present system of examinations prevails, for the work demanded cannot be accomplished if the scale be enforced. This objection only brings us back to my former contention, that the number of subjects should be diminished, and quality of work in a few subjects substituted. In this way *thoroughness* in the case of boys *all* would be aimed at, instead of being confined, as at present, to a few.

I doubt whether in some of our schools, when the whole-holidays and half-holidays are counted, even this moderate scale of work is secured in the case of the elder boys, though it is always exceeded in the case of the younger ones, when measured according to age.

In our public schools, from twenty-four to twenty-eight hours a week *in school* is about the average—not including time spent in the preparation of work; while in our private schools they average—and more frequently exceed—about thirty-six hours per week, including preparation of work, but excluding Sunday work. This for boys from nine to fourteen years of age is excessive.

Yet many boys at school, from fourteen to eighteen years of age, who conscientiously strive to do their tasks thoroughly, will average nine to eleven hours of work

per day, and even occasionally fourteen hours where a master does not realize the extent of the task he has prescribed, so that they necessarily become so dazed in consequence as to be unjustly regarded as stupid boys.

It is absolutely certain that the boy whose strength is not overtaxed will perform more effective work in five or six hours than the over-taxed boy can accomplish in nine or ten.

For the younger children in all schools I think I may safely say, that the work invariably errs from excess. For instance, although I know that these ages often overlap, yet, roughly speaking, we may assume that there are schools where children are educated from the age of five to nine years; others adapted for the ages from nine to thirteen; and the last class arranged for those between thirteen to nineteen years of age. With possibly rare exceptions, the children of the ages five, nine, and thirteen have to work respectively the same number of hours as those of nine, thirteen, and nineteen.

Is this reasonable, and in accordance with the teaching of Nature? I know perfectly well that the answer will be, not a justification of the practice, but the difficulty of any other plan. I can only reply that difficulties are meant to be faced, and not shunned; especially when a grave wrong is otherwise perpetrated, upon those who cannot help themselves.

I do not say that the work *can* be curtailed, but I insist that the hours *must* be shortened if the children are successfully to accomplish the work of which they are capable, without permanent harm.

There are many ways of meeting the difficulty: thus, the younger children at each school should go to bed earlier, and rise later; they should have no evening work to prepare, and no lessons before breakfast; and their morning and afternoon hours of work could be

shortened, without interfering with the work of their elder, and more advanced, school-fellows. Such arrangements would prove of lasting value in the growth and development of body and brain, and would consequently minister to their future prospects in the world.

The only real difficulty seems to me to lie in the *will* and not in the *way*.

But school work frequently lacks the aim of all education—by which I intend the culture of the brain—in that quality of work is sacrificed to quantity of subjects. These studies should be diminished in number, in order that some attempt may be made to ensure *thoroughness*, in place of teaching a smattering of innumerable subjects, no one of which can be really approximately mastered. *Multum, non multa!* This could be readily attained, without inducing monotony of work, if the plan I have mentioned were pursued.

The specific intellectual aim of the teacher's work being the development of the brain of the pupil, the tissue of which consists of cells and fibres of nerve-matter, which are as capable of increased growth under exercise as the muscles, it follows that, if work be unwisely assigned, the growth of the brain is stunted; for it is an infallible law that immature tissues are incapacitated and deteriorated by excessive labour. The younger the child, the more disastrous is the effect of pressure. Moreover, a certain indefinable flavour is usually wanting in fruit ripened by the forcing process. Some call it folly to force the mind during childhood and adolescence: it should rather be termed wickedness. For by so doing a sure foundation is laid for the development of neuroses, which mar not only the whole life of the individual, but also that of those dependent upon him.

Yet what are the arrangements in vogue in our schools

at the present day? In some, the pupils are only in school for an hour at a time; in others for two hours, and then a break of fifteen minutes; while in others the plan prescribes the period of 9 a.m. to 1 p.m., and then again 2.30 p.m. to 5 p.m. With what result? Can efficient teaching continue for four hours without harm to teacher and taught? Both tend to become torpid and flaccid, quite irrespective of the work performed, owing to the poisonous state of the atmosphere; for we are not sufficiently advanced in sanitary science to regard it as loathsome, no less than noxious, to rebreathe pre-breathed air. Until we reach this height, let teachers learn the unprized value to themselves and their pupils of a frequent break in school at every change of lesson. This break should be frequent in order to avoid satiety—say, three minutes—to enable the teacher to yawn unobserved, and the taught to run and shout and inflate the lungs to their full extent, and thus avoid that inattention and restlessness which are nature's cravings in the young for healthful change. The windows and doors could be meantime set wide open for the purification of the air.

Even at the age of sixteen, children are actually permitted by school rules to continue at work until 11 p.m. In other cases the work exacted is so laborious that pupils, *sub rosâ* I grant, resume their work in bed—certainly not from love of lessons—and persevere with it until twelve o'clock and after, in order that they may complete their allotted task. I feel confident the answer will be, that, in so doing, they are disobeying stringent rules. But let it be remembered, that it is the severity of the ill-judged tasks assigned which necessitates such a course, and that the teacher is more in fault than the taught.

Excessive hours of work are not confined to primary or secondary education; or to one grade of schools for boys

or girls; or to one country: they are world-wide in their prevalence. Referring to overwork in Italian schools, Signor Martini, the Minister of Public Instruction, in the recent debate in the Chamber of Deputies on the estimates for public instruction, very pithily remarked that—"We are forgetting division of labour. In our schools we are swallowing much and digesting little. The secondary school ought to stir the intellect and inspire the soul with the love of culture. We have enlarged our programmes, but the cerebral convolutions have not enlarged *pari passu*. Whilst the able-bodied artisan demands the restriction of his labour to eight hours, we extract from our boys of ten a labour at once more prolonged and more severe."

The hardship entailed on children through the enthusiasm of the teacher, or the severity of the examinations for which they are prepared, is sometimes so oppressive as almost, to my mind, to call for the attention of the Society for the Prevention of Cruelty to Children. I know of children of seven years of age spending five hours a day in school; and others of fifteen to eighteen having so much regular and adventitious work prescribed, as to prolong their working day to eleven and twelve hours, with incalculable evil consequences.

We are now led to discuss more minutely the subject Overwork. of overwork, and, for an adequate presentation of the case, it must be borne in mind that intellect is simply brain function, and that for every brain a high-water mark of effort naturally exists, which it is unsafe to exceed.

Sometimes it is the brightest and most promising scholar who is worked at too high a pressure, and, if not checked in time, his health, or even his life, may be the forfeit demanded. But it is not always the bright, clever pupil who is capable of being overtaxed.

Sometimes it is the dull, but conscientious pupil, whom

one is apt to term the stupid boy. Alas! how often one misjudges the boy concerning whom the teacher is prone to think, harass him as he will, that he, at all events, cannot be overstrained, as he apparently learns nothing! Yet this is the one who may suffer the most severely from overwork, since he labours beyond his feeble mental capacity. The anxiety attending such work, when the child realizes that he cannot remain at school, is sometimes most pathetic, and a complete breakdown ensues. He works thus, either for his own advancement, or from love of his parents, or because he is pressed by his tutor or parents, or by reason of the rule of superannuation. It is this stamp of boy, with his imperfectly formed embryonic nervous system, who succumbs most readily. Such a type of child is apt to be damaged the most seriously, because his nervous tissue is more easily overtaxed, showing itself, in the early stage, in the form of hysteria—that sure sign of over-tension and nervous exhaustion, whether proceeding from overwork or disease.

When I speak of overwork, I do not simply mean that form of overwork through which a boy or girl completely fails. Although I know of many individual cases, occasion for such an event should never exist. Those responsible should detect the overstrain long before this disaster is reached, and work should be absolutely prohibited until recovery is beyond dispute. These cases, sad as they are, are eclipsed by a far graver form of overwork—graver by reason of its frequency and of the multitude whom it affects—which passes unobserved, because through the natural elasticity of youth the immediate effects soon subside, and the remote results are never witnessed by the teachers who occasioned the evil. Its results, however, are detected by the medical profession (which is sometimes thought incapable of forming an accurate opinion upon the subject), whose whole life is spent in

the study of the human being under every phase of its existence.

I do not wish to imply that *all* schools overwork their pupils. I venture to say, however, that a large proportion of schools not only commit this error, but the still graver one of excessive number of hours of work, and of unreasonable restraint, which are especially injurious to the younger members of a school. And I desire to point out that these conditions are sources of great evil to the unfortunate pupils who are subject to them. Nor do I desire the implication to be inferred that pupils frequently suffer from a complete breakdown—that is, comparatively, a small part of the general question; for, were this to occur, parents would soon enforce the reformation of such schools by the never-failing remedy of avoiding them.

There is sufficient scope, however, for overwork short of this result, as I shall show presently when I record the symptoms which indicate its existence. If pupils leave school at the end of term worse in health instead of better, it is clear that they are being injured by some of the school arrangements. Yet it is quite common for boys and girls not only to look ill at the end of term, but, even in the case of robust children, to lose weight, although having concurrently increased in height. Weight should have increased in a corresponding ratio. Loss of weight—and even stationary weight—during the years of growth invariably mean overwork, underfeeding, incipient disease, or recent illness.

I even hear of children who, while suffering from illnesses, and well-marked functional disturbances, are kept fully at work exactly as if they were in perfect health. Surely the strain of these ailments upon the constitution is sufficient without lessons being super-added!

It should, therefore, be the master's aim to produce *quality* of brain substance, and this can only be effected by rendering all the tissues of the body healthy, and then carefully teaching a few subjects thoroughly.

Mental overpressure is always followed by impaired physical energy.

But schools and schoolmasters are unable to carry out this obvious system, while examinations, for which they have to prepare their pupils, continue encyclopædic in character.

The schoolmaster's material is thus brain substance; all his power over the pupil depends on quality and growth of brain; growth of brain is dependent on growth of body; and growth of body is based on a suitable and sufficient supply of good food, fresh air, and exercise.

Those engaged in education should strive to elicit the natural good hereditary tendencies of each pupil, and develop them; and endeavour to evoke and encourage new faculties, with a view to completeness of education and character.

And the natural principle must be borne steadily in mind, especially under a system of compulsory education, that underfed children cannot sustain hard mental work.

Whatever is taken out of the brain in the form of work must be replaced in the form of sleep and food. This is true for all; but much more for the young where, in addition, the brain has to grow and develop.

It is cruel, too, for even well-fed children of seven years of age to be kept in school for five hours daily. They must become absolutely dazed and stupid, apart from the permanent damage inflicted on the brain tissue itself, without any description of compensating gain.

At Bradford, Dr. Rabagliati stated that the Registrar-General's returns showed, that since the Education Act came into force, the deaths from "water on the brain"

amongst children of school age had increased by 20 per cent.; and from inflammation of the brain by 50 per cent., the latter, however, not solely amongst children.

And of all causes of insanity and neuroses, those connected with excessive brain function in the young are the most prolific.

In our *high-class* schools, "payment by results"—represented in the form of Scholarships—induces the clever boys to strain their brains; whereas in *elementary schools*, "payment by results" compels the teacher to overpress the dull and stupid children, and in this effort the teacher frequently suffers most.

Mr. Cotterill quotes the following extract from a weekly journal for June, 1885 * :—

"SCHOLARSHIP FOR SMALL BOYS.—Mr. — offers for competition at the end of July, a scholarship for five years—*i.e.*, he will take a pupil who shows decided ability, and is between the ages of seven and nine, for half his usual terms (£100 a-year). Preparation for the Public Schools."

Can anything be more disastrous than such an advertisement to the poor unfortunate boy—no, *child*!—who obtains the scholarship? And what judgment should be passed on the advertiser?

Generally speaking, it is the boy that is growing too rapidly who suffers from overwork. The boy who takes no exercise may be said to suffer from relative, rather than from absolute, overwork; with proper exercise he would make healthy blood, and with healthy blood he would possess a vigorous brain.

Headaches, restlessness, irritability, inability to fix the attention, are the finger-posts which usually point to the commencement of the symptoms of overwork; their warning should be heeded in time, and the work stopped or reduced.

* Blackwood, "Suggested Reforms in Public Schools."

Overwork, however, is so frequently asserted where none exists, that great caution and much judgment require to be exercised, lest an error be committed and a boy spoilt and made lazy by a reduction of work where no necessity exists. Thus, headaches are sometimes caused by working or sleeping in impure or pre-breathed air; often through a failure in sight, which could be rectified at once by appropriate spectacles; and most frequently of all these headaches are toxæmic, from imperfect action of some of the secretions, such as constipation, but especially from albuminuria.

On several occasions I have seen boys, who had all the symptoms of overwork, and from whom no further work could be obtained, cured of all head symptoms, as soon as the cause was discovered, by an aperient and a milk diet only for twenty-four hours.

So far, however, from all schools being tainted with overwork, it is a well-known fact that schools exist where the pupils are practically taught nothing. It is difficult to discover this fact at first, except when several pupils are transferred to a higher school, all of whom are ignoramuses; for if only one pupil be transferred, he may be regarded as merely a dull or backward boy. The pupils from these schools usually go home happy, cheerful, and sleek in skin; and parents pay their cheque with pleasure, and recommend the schools to friends, little realizing the true state of the case.

There are other schools—all honour to them—where the principal not only recognizes, but performs, his duty to those placed under his care, during this most critical period of life; where the work is suitably arranged; where sufficient sleep is provided for; where all are compelled to take exercise adapted to their size and strength; where the food is ample and appropriate; above all, where the cooking is well done; and where

the pupils consequently return home in increased vigour of body and mind.

There are other head-masters who, in their desire to excel—and I believe there are no schools in the world equal to our English schools of all grades, though many faults still require rectifying—fail to measure the material with which they have to work, and hence do harm. Incalculable harm, I mean—not physical only—for such masters frustrate their own aims by piling on work *ad nauseam*, until a distaste is engendered which lasts with life. And what total advantage has been gained? Perhaps two per cent. of the boys secure scholarships at the university, while ninety-eight per cent. have been taxed beyond their powers without compensating gain.

I maintain that if schools were to continue their work for a whole year, except for the month's holiday which usually appertains to most workers, both teachers and taught would break down palpably. Yet, if the present *régime* were a healthy and appropriate one, this result could not occur. To employ a rough illustration, the process of education at present in vogue resembles, in a large number of instances, a game of skittles: parents stand their children up in health, and in three months teachers bowl them down; the parents set them up again, and again they fall.

If I were requested to inspect a school for the purpose of ascertaining whether overwork prevailed, I should require to view it at the commencement and at the end of term. I should then compare the pupils at these epochs. I should not select isolated cases; for in all schools there are individuals who, under all conditions, look ruddy and healthy, while others, however well cared for, always resemble ghosts. These extreme cases are not to be taken as types of underwork or overwork. But I should gauge the average. After an

inspection of twenty schools, I believe I could tell the number of hours the pupils were worked, especially if I could ascertain their hours of sleep, and be present at their meals.

I fear that there must always be a certain amount of overwork in schools so long as teachers are inadequately equipped with the necessary professional skill of disciplinarians, and trainers of children; for they cannot but lack the requisite judgment until they are experienced in the ways of children.

Some masters resort to this excess of pressure work with the very laudable desire of restraining the animal instincts of youth. But it is a fact that over-pressure and brain irritation on the one hand, are as likely as idleness and want of occupation on the other, to increase physical and moral dangers amongst youth—dangers little regarded by the public, but always existent where the young are massed together. This is a well-known and frequently witnessed fact in the irritable brain of early insanity, but is not so easily observed under school-boy conditions.

The Symptoms of Overwork on the Pupil.

The *symptoms* of overwork in the young are many and various. Some are palpable enough on the surface; others equally so on search. I shall now classify these symptoms, as I desire the evidence to be unmistakable.

1. *The Character and Disposition* can be best gauged by comparing the individual with his former self. In this way even trivial symptoms are a valuable index. Under this head I would include restlessness, inertness, mechanical obedience to orders, absence of power of origination, spirit and pluck vanished, answering in monosyllables, learning lessons as automata without intelligent interest, and returning home perfectly apathetic, even if they escape a breakdown.

2. *The General Appearance* is sallow, aspect unhealthy,

a dark tinge under the eyes, dull-eyed, eruptions frequently on the skin.

3. *The Muscular System*.—Muscles flabby and wasted, without elasticity; and gait, consequently, without the spring and vigour of youth.

4. *The Nervous System*.—Headaches, stammering, sleeplessness, talking and walking in sleep, inability to fix the attention, hysteria, shirking society, neuralgia, earache, brain-fever, and mania. Looking to the number of hours some children, especially girls, are compelled to work, their brains must of necessity be pretty well addled; and this condition is quite sufficient to account for the curiously muddled answers they give to school questions, which are often quoted as amusing, but which, on the contrary, to my mind are appalling in significance.

5. *The Circulatory System*.—The pallor of countenance, arising from deficiency of the red corpuscles of the blood, is one of the most marked symptoms, and, as I have already pointed out, prevents the effective nourishment of the brain. Feebleness of pulse, too, is apparent.

6. *The Respiratory System*.—Shallow breathing, imperfectly inflated lungs, poor health, wasting, and subsequent death.

7. *The Digestive System*.—One of the commonest results of overwork is constipation, the *fons et origo* of endless evils in the young; foetid breath, loss of appetite, and, in consequence, fastidiousness in the matter of food.

8. *The Urinary System*.—An exceedingly frequent effect of over-pressure is albuminuria, which entails many discomforts. This is a common cause of rejection at the medical examinations for the various Government services, as many as ten per cent. of the applicants failing from this defect alone.

9. *The Generative System*.—These functions become disordered in girls, entailing in consequence marked ill

health, and their general condition prevents work of any value.

10. *Loss of Weight*.—Of all the symptoms of overwork, the most characteristic is loss of weight, showing that a crime is being committed against the body—a crime which leaves its permanent stamp upon the constitution.

But there are some who, while recognizing the fact, satisfy their consciences with the assertion that loss of weight during term arises from the greater amount of exercise taken at school, so that in reality it is a healthy sign. Were this the accurate interpretation, these weight-losers would concurrently improve in healthy appearance; while the contrary is true. Besides, if the proportionate height-and-weight tables be consulted, it will be found that the "vacation" weight is the normal, and the "term" weight abnormal.

Further, loss of weight also occurs in day-scholars, who eat from the same table throughout the year, so that it does not always arise from deficiency of food, as others assert.

I do not affirm that overwork is the sole cause of loss of weight at school; for improper feeding doubtless claims its share, as well as excessive physical exercise, insufficient sleep, and, finally, illness, which still largely consists of unprevented preventible diseases. But it is impossible to speak now of these causes separately. Suffice it to say, from whatever cause this condition arises, so grave a wrong is committed, that I must be pardoned if I use strong expressions, for serious evils demand vigorous language.

Thoughtfully consider the question! A child is placed at school during the years of growth and development. If it be justly cared for in all respects, its height and weight should annually increase—not, it is true, with steady regularity, for in the autumn and winter the

advance is less than during spring and summer; and in certain years, as I have already mentioned, the height increases more rapidly than in others. But the weight always bears a certain ratio to the height, as is seen in the tables, so carefully and laboriously worked out by various authors, and given on pages 88 to 91.

Is it not justifiable to employ forcible language when we see that, while under the teacher's care, and as the result of overwork, over-exercise, or under-feeding, a child, though increasing in height (which, moreover, from the same causes, is below the normal rate), either remains stationary in weight, or, as is actually the case, during every term year after year—I could record endless instances—finishes the term many pounds in weight lighter than at its commencement, regaining weight during the holidays, to be once more reduced on the return to school? I venture to state, after the maturest consideration, that this fact is an unpardonable injury to the constitution of the adolescent. And, moreover, whenever this loss of weight in body takes place, there is also, in exact proportion, a diminution of weight in brain, so that the teacher frustrates his own endeavours. If I assert that a teacher should make allowance in work for a pupil who for a season fails to grow, or for one who has grown abnormally—so that little reliable material has been left for brain growth—I may be thought pedantic. Yet this natural concession ought to be permitted by the real educator, who thinks more of his pupils' future than of his own apparent repute. Brain-growth always proceeds *pari passu* with body-growth. The intellect and mind act only through the brain, and it is this organ, in the highest state of efficiency, which the teacher requires as the basis of his work. It is mental and bodily exercise alone that can produce a symmetrical development of the mental faculties.

The symptoms of overwork among girls are greater than those among boys, because in the latter case the long hours of work are compensated to some degree by exercise; while this is not the case in girls' schools, as little exercise is afforded beyond an occasional walk when the weather permits. In girls' schools the various "systems" should not take the place of games; girls require the recreation of games, not "systems of exercise." If, at present, there be really no place suitable for play out-of-doors, then a bear-garden should be made of the schoolroom during play-time, so that the children may have their romp.

It may be asked, then, what I regard as the functions of a school. Candidly I reply, that I hold the highest ideal—and an ideal not beyond compass—of the school-life of a nation; for, in that stage, it is mainly that a nation is created in physical development, in nobility of character, and in mental power of achievement. On teachers the serious, but happy, duty rests of realizing this possible ideal. And it is in the hope of stimulating all to look duties and responsibilities fairly in the face, and reviewing their position, under the enlightenment of the close of the nineteenth century, that I am discussing the subject now, in terms that appear to me to be justified by the nature and imperious importance of the question.

From my point of view, a school, in its ideal form, is a place where the young are sent for the purposes of a liberal and humanizing education, from about the ages of seven to nineteen; sometimes earlier, sometimes not so late, the rule being altered rather from necessity than choice.

It is a place where everything is regulated to such a nicety, that the most perfect health possible is attained in mind, body, and character, since no effort is relaxed to render the mode of life accordant with the realization of

the highest ends: where *work* is sufficient, but not excessive: where the natural bent of the individual mind is to some extent consulted, without the lassitude of persistent monotony: where *sleep* is ample, sufficient for the restoration of wearied, as well as the daily growth of fresh, brain-tissue: where *exercise*, while compulsory, is adapted to the various ages, sizes, and strength of the pupils, and varied as much as possible, with some reference to the personal choice of the individual, and sufficient time is permitted for recreation and recuperation; where none are *detained in school*, under any pretext, after a meal has commenced, so that the pupil has to "put up with" a cold, uncomfortable, and, too frequently, uneaten meal; but where all sit down to well-served meals punctually together; and where also the *food* is adequate, plain, varied, and well-cooked, with sufficient time allowed for mastication. In this way only will the wholesome food *necessary* for work be enjoyed, and the delicacies of the pastry-cook eschewed. The cooking of food at school seems to be one of the chief grievances, the complaints in this respect being incessant and reasonable. The answer of those who cater will be, I fear, the difficulty of obtaining suitable cooks. "When I asked an ironmaster," says Emerson, "concerning the slag and cinder in railroad iron, his answer was, 'There is always good iron to be had. If there was cinder in the iron, it was because there was cinder in the pay.'" My view also requires that ample *cubic space* be provided in bedrooms and class-rooms; and finally, that some regard be devoted to *character*, so that no child may err through lack of the supervision which is his right during school-life, while the character is unformed. For strength of character is a process of development quite as much as that of muscles and brains, and the two proceed *pari passu*. And liberty should never mean licence. Here it

is that the personal character of the teacher has such influence over the pupil for good or evil—an influence which, when of the right kind, has engendered, too, a lifelong esteem.

I fear that few schools attain this ideal, because few teachers realize *all* their responsibilities.

Of the average school, the following description is, I am afraid, the more accurate account:—

In them *work* means that all brains are ground in the same mill; that *overwork* is prevalent; that *sleep* is curtailed to a minimum, with great sacrifice to the nascent brain, where a maximum rest should be enforced; that *exercise* is left too much to the random decision of the pupils themselves, who, lacking the necessary knowledge, and the judgment of experience, become consequently hard taskmasters; that small boys are frequently compelled to participate in the same games with big boys; that the delicate have to rough it with the strong; that the boys themselves regulate the kind and extent of the clothing which shall be worn at games, although they are devoid of the very rudiments of physiological knowledge; that the monotony of recreation is too oppressive and constant; and that the monotony consists of about thirteen weeks of running and fives, thirteen weeks of rowing and cricket, and thirteen weeks of football, with practically no change; that *girls* are expected to show straight backs and good limbs, where exercise is barely recognized as a necessity in development, and recreation, in its true sense, is unknown; that, while the *food* may be sufficient, plain, and wholesome, little regard is paid to the cooking; where the sameness is so assured that the food of each day of the week, and every week of the term, is known beforehand, whereas it could be easily varied by the exercise of a little more forethought, without extra expense; that the

cubic space of dormitories, cubicles, class-rooms, and studies, will scarcely bear investigation, and rarely commendation; and that children are left too much to follow the devices and desires of own hearts before their force of character has been sufficiently cultivated.

The teacher has sometimes a grave problem before him in deciding between *weariness* and *laziness*: the one term meaning *getting tired*: the other, *unwillingness to stir*. Professor Michael Foster has shown that weariness of muscle arises in part from too rapid expenditure, and in part from the accumulation in the muscle of the products of the muscle's own activity. The material changes on which the activity of the nervous system depends are analogous, the weariness depending upon the expenditure of capital disproportionate to the accumulation, and on the other hand on the clogging of the machinery with the products of activity.

Not only are children overworked, but I have noticed many teachers and pupil-teachers in the primary schools, and teachers in private families, utterly broken down, from causes due in the one case to payment by results, in the other to sheer hard work in having too many pupils to superintend.

The Effects
of Overwork
on the
Teacher.

So that if overwork exist amongst the taught, it also extends to the teacher. Let a teacher try to bear the strain of work for a year without the long holidays. If he cannot, his work is unreasonably excessive. And if severe upon him, whose tissues have attained their maturity, how much more so upon the immature brain of his pupils!

Perhaps the strongest argument I can use to influence the abandonment of the present course is this: that an overworked teacher cannot teach with the intelligence, spirit, and evenness of temper that are absolutely essential

in dealing with the formation of character in the young. Excessive toil entails apathy, and touchiness of temper ; brings out the teacher's weak points, and keeps him on the borderland of ill health, where, should illness supervene, the interval between recovery and death is approximately insignificant.

I have not, however, the same sympathy with the overworked teacher that I have with the taught, for the former can usually lighten his labour ; and, in addition, he has completed his growth and development, so that the brain, like the difference between the matured oak and sapling, is more capable of bearing strain.

I must add, however, that some of the saddest cases I have had to deal with, in the course of my professional career, have been those of breakdown from overwork in teachers, male and female ; especially amongst pupil-teachers, who have to toil all day long with their children, and far into the night for themselves in preparing for their own examinations.

Of the teachers in *primary* schools, Sir Edwin Chadwick says, that it has been found by statistics that the death-rate is twenty per cent., whilst in the army it is six per cent., in the navy four and a half per cent., and in prisons not more than three per cent.

In respect of teachers who, being strong and healthy, fail to appreciate the value of good health as many do, who are negligent about taking regular exercise, and who continue work into the small hours of the morning, night after night, it only requires a slight acquaintance with their general state of health to predict, with almost mathematical certainty, when the breakdown will occur, preceded as a rule by a period of indifferent health, or a series of trivial ailments which are either disregarded, or assigned to other causes. And what is still more certain is, that work is never resumed with the same taste, care, and enthusiasm again.

And, further, the schoolmistress will succumb long before the schoolmaster is affected by the unwise mode of life.

There are some parents who say—I have heard them myself—"I don't want my boy to work; and I don't care if he never does a stroke of work more than is necessary to enable him to remain at the school: I only want him to get the *tone* of the place." I need scarcely say that, in a large proportion of cases, a boy so situated is nearly sure to acquire the bad tone of the school, and miss all that is of greater value; and such a boy, while gaining no good for himself, soon becomes a source of harm to others. For, having learnt the art of doing a minimum of work, with the least possible trouble, he ends by losing self-respect and straightforwardness of character.

The *arrangement of work* is little less important than its quantity, if the greatest amount of good work is to be obtained, with benefit, instead of detriment, to the boy. An hour or an hour and a half at a time is ample; for the younger boys, three-quarters of an hour at a stretch would be preferable; and more is never easily endured; even a few moments' respite will enable another hour's work to be satisfactorily accomplished.

Arrange-
ment of
Work.

In private schools, where the boys mostly range from nine to fourteen years of age—and in most public schools which are conducted as day-schools—the long school hours—9 a.m. to 1 p.m., and 2.30 p.m. to 5 p.m., and then "preparation" of work at home in the evening—are still adopted. No system could be more unwise and injurious; it is not only harmful alike to masters and boys, but forms a severe trial to their temper and patience.

Even an adult is over-strained who sits at work for

three hours at a time without rest; how much more unreasonable is it to expect a young active boy or girl to undergo the same trial, as is so often required.

I append here a "time-table" of the daily occupation at one of the best private schools in existence in this country (Table A, p. 333). I think the hours too long, but the master, a wise and experienced man, states that the work required for examinations cannot be completed in less time. His arrangements otherwise require no alteration; the times for cessation of work and for play, and the sanitary arrangements, leave absolutely nothing to be desired; he is, compared with most other schools, greatly in advance of his time.

An hour in and out of school alternately is an excellent plan—and is in force in many of our public schools—especially if every other day be one of work all day, alternating with a half day of work and a half day of freedom; this custom is better than a diminution of work each day with a slight daily increase of leisure. Nothing is so salutary as the half day of freedom every other day, with hard work on the intervening day; for all young people—except, perhaps, very young boys, who cannot amuse themselves long together—require an ample time of freedom.

I append here a "time-table" of the work and play in public schools; with some minor alterations, the daily work in these schools is roughly represented by the table (Table B, p. 234).

I also append a "time-table" of the work as it is arranged in "*Public Day-Schools*" (Table C, p. 235).

Preparation
of Work.

As the evening preparation of lessons is at present the rule at nearly all schools, with a few excellent exceptions (such as the one whose time-table I have exhibited at p. 233), I purpose discussing the whole question of

TABLE A.]

TIME-TABLE OF A PRIVATE SCHOOL.

[Ages 9-14.

[Ages 9-14.]																														
TABLE OF PRIVATE SCHOOL.																														
Day.	7.0	7.30	7.45	8.15	8.50	9.45	9.50	10.50	11.5	12.0	12.5	12.35	1.5	1.20	2.0	4.0	4.15	4.45	4.45	5.45	5.50	6.10	6.15	6.45	7.0	7.30	8.15	8.30	7.0	
Monday.	Out of bed.	Prayers.	Breakfast.	Play.	School.	Play.	School.	Play and Lunch of Bread-and-butter.	School.	School.	Play.	School.	Play and Wash.	Dinner.	Play.	Bread-and-butter and Milk.	School.	School.	School.	Play.	School.	Play and Wash.	Tea.	Play.	Prayers.	Bed.				
Tu.	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
Wed.	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
Th.	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
Fri.	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
Sat.	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
Sunday.	Out of bed.	Prayers.	Breakfast.	Free-dom.	Start for Church.	Dinner.	Free-dom.	Lecture.	Hymn Practice.	Tea.	Reading.	Evening Service.	Bed.	Half-holiday.																
	7.30	8.15	8.25	9.0	10.15	1.40	2.15	4.0	5.0	6.0	6.30	7.30	8.30	2.0	8.15															

[AGES 14-19.]

TIME-TABLE OF PUBLIC SCHOOLS.

TABLE B.]

Day.	6.30	7.0	7.15	8.15	8.45	9.15	10.15	11.15	12.15	1.15	1.30	2.15	3.0	4.0	5.0	6.0	6.30	7.30	9.0	9.30	9.45
Monday. Wednesday.		Chapel.	School 1st Lesson.	Breakfast.	Preparation 2nd Lesson.	School 2nd Lesson.	Preparation 3rd Lesson.	School 3rd Lesson.	Play, or Preparation 4th Lesson.	Wash.	Dinner.	Drawing, Music, or Play.	Play, or Preparation 4th Lesson.	School 4th Lesson.	School Prepared [Never Work].	Tea.	Freedom.	Preparation. 1st Lesson.	Freedom.	Prayers.	Bed.
Tuesday. Thursday. Saturday.									Play.	Wash.	Dinner.	Play.									
Sunday.	8.0	8.30	9.0	10.30 11.15	11.30 12.30	1.0 1.30	1.30 4.0	4.0 5.0	5.15 5.45	5.45 7.30	Lecture in Winter. 8.0	8.0 9.30	9.30	9.45 6.30							
	Out of bed.	Litany.	Breakfast.	Bible Lesson.	Chapel.	Dinner.	Freedom.	Chapel with Sermon.	Tea.	Freedom.	Lecture in Winter.	Freedom.	Prayers.	Bed.							

The scope of this arrangement of work provides an hour's preparation for an hour's work ; and this varies every hour, every day, and in every form. The average work is from 24 to 28 hours per week, and every other day is a half-holiday.

The scheme might be greatly improved by having Prayers at 9 p.m., and Bed at 9.15 p.m.

TABLE C.]

TIME-TABLE OF PUBLIC DAY-SCHOOLS.

[AGES 13-19.]

Day.	9.30 to 11.15	11.15 11.30	11.30 1.0	1.0 2.0	2 to 4 or 3 to 5	Evening.
Monday. Tuesday. Wednesday. Thursday. Friday.	1st Lesson.	Freedom for Play.	2nd Lesson.	Time for Lunch and Play.	3rd Lesson.	Home Lessons take from 2 to 4 hours to prepare.
Saturday.	Whole Holiday.					
Sunday.	No School.					

It will be seen that the "Home Lessons," the hardest work of all, occupy from 2 to 4 hours in the evening, when the pupil is most unfit to learn.

It will also be noticed that when the time for "Travelling" to and fro is deducted, the balance left for "School Games" is most insufficient.

Were the whole holiday on Saturday abolished, and the period from 2 to 4 p.m. allotted every day to games, when the whole school is assembled, a distinct advantage would be gained.

preparation of work first, and will then adduce *objections* to this large amount of work being required to be prepared in the evening after school hours.

I hold very strongly that the preparation of all school-work, except among the elder boys, should take place under the personal superintendence of a master, instead of the method of preparation being practically left exclusively to the decision of the boy. By this means alone will the abolition of "cribs" be secured. At present they are freely used, and the existing system of preparation of work prevents their abandonment. This dishonesty in work, mostly undetected, tends to undermine the character of a boy, with lasting general effects. The punishment of an occasional detected instance is not the way to eradicate the evil. The practice must be prevented; and this can only be done by an alteration of the existing system. Many a dull boy in a form who will not use the "crib" is thus left behind by school-fellows who are not so scrupulous. Not long ago I heard of a boy who was twenty-sixth in his form work; but at "unseen" lessons mounted to the third place. This was strong evidence to my mind, that he honestly prepared his work without "cribs," but was beaten "in form" by his school-fellows who freely used them.

I know that it is all but impossible, however earnest the master may be upon the subject, to abrogate the use of "cribs" altogether. But parents themselves can effectively aid in this reform if they will only impress upon their sons, that it is better to be at the bottom of the form by honest, than at the top by dishonest, work. It should be remembered that genuine work at school, by engendering a conscientious habit, tends to ensure honest work through life, while the contrary course is equally likely to produce the opposite result.

The reasons why "cribs" are used are many and

various. A boy is too lazy to devote sufficient time and attention to the preparation of his work; or the task prescribed is excessive and oppressive; and the dread of "superannuation" may thus unfortunately almost compel the use of these adventitious aids in the case of a boy who is not clever at classics, especially if he be very sensitive.

Another reason exists to a degree not sufficiently estimated, namely, that where the house-master is a mathematical or modern-language master, and the boy, in obscure passages, may find difficulty in appealing to his form and classical master, as too much time, or too much trouble, may be involved in searching for him, the only easy way out of the difficulty is the "crib." This could easily be obviated by such work being prepared in the daytime, as well as in the evening, in the common-room, with the tutor present and superintending, but helping as little as possible—a hint or a question being often sufficient. By this means the existing and fair arrangement, which is in force in most public schools, might be continued of senior masters, whether for classics, mathematics, modern languages, or science, taking the houses that become vacant, in rotation according to seniority. It would even be wise for mathematical and modern-language masters to insist on some alteration, even though the one I have suggested should not be adopted. The preceding remarks apply to the *day* preparation of work.

For *evening* preparation, it is customary in private schools that the boys should work together, under the superintendence of the master, in their class-rooms. These boys are usually young, and require gentle handling. My convictions about "*Preparation*" for young boys are so well expressed by a friend in a note to me upon the subject, that I quote his words. He writes:—"I do not find it good to put the hardest work (the

preparation of 'new work') at the end of the day, when boys are tired; nor do I think it good to let boys go to bed straight from exhausting or exciting work. We have no evening work after 6.45 p.m. In summer they go out-of-doors until 8.45 or 9 p.m.; in winter, the last hour is devoted to reading, writing letters, small carpentering, cutting out, or games, which, from bagatelle to boxes of bricks, are provided in the dining-hall, kept for that purpose. I don't remember a single case of disturbed night's rest or sleep-walking since we did away with evening preparation." This is the statement of a most successful master of a large private school, which is a model from a sanitary point of view, and is morally all that can be desired.

In public day-schools, the large amount of work to be prepared at home in the evening (see Table C, p. 235) often compels a parent to provide a private tutor—who thus does the work of teaching which really appertains to the masters in school.

In public schools the best plan is that senior boys should prepare their work in their own studies: the younger boys should not be allowed this liberty, but should assemble together for work in the evening in a common room under the superintendence and judicious help of a master. Where this plan has been tried it has worked admirably, and should become general. It produces more and superior work from the boy, gives him plenty of fresh air during evening working hours in a large room in place of the vitiated air of a small study, and allows the elders the necessary quiet for their work. It is a great gain to the boys at the expense of a small portion of the freedom of the masters.

This question of the preparation of work in the evening demands immediate and adequate attention from masters and governing bodies. Sir Crichton Browne has

truly said:—"The most arduous mental work required of a child ought to be imposed on it when its mind and body are in their prime vigour, between 9 a.m. and noon, and nothing but the lightest work should devolve upon it after 5 p.m. To the medical eye, 'preparation' seems to be peculiarly the work which should be carried on in school, with the constant assistance of the master, whose special mission it is to explain difficulties, to remove obstacles, evoke interest, and stimulate endeavour. It is, perhaps, because some masters do not take this view of their office, but fancy that their duty is performed when they prescribe tasks, listen to the repetition of them, scatter over them a few critical remarks, and diffuse around them that magnificent moral influence—which is not, after all, a good substitute for hard work—that tutors and evening governesses have so often to help boys and girls with their preparation, and that parents have to take upon themselves the real drudgery of teaching." This distinct flaw in our school system was never more completely or more justly described. He adds:—"Is any argument required to prove that that part of the day's work which involves most brain effort and brain exhaustion should not fall on these evening hours, when the nervous system is already fatigued, and when by the laws of its constitution it is least capable of exertion? This question is now ripe for alteration, and it is to be hoped, especially in our public day-schools, that the solution of it may be forthcoming."

The subject of examinations at school is a wide one, and can only be briefly discussed in this treatise, and only so far, indeed, as it affects the mental and physical health of the scholars. At present it is beyond question too frequently true, that whatever does not mean success in examinations is not regarded as education. In

School
Examina-
tions.

fact, examination is becoming, if it has not already become, the master of education instead of its handmaid and test. The attainment of knowledge, and the education of faculties and of character, often occupy a secondary place, the primary position being assigned to success in examinations. And in pursuing this course injury to health and bodily vigour is ignored. Moreover, the overpressure to which I have called attention arises mainly from examinations, rather than from ordinary study.

The element of examinations is a very important item in the school curriculum, and is not counted in estimating the amount of work at school. Yet it is largely to the influence of internal and external examinations that overwork is due. Examinations not only impose additional labour upon the regular school course, but also increase the standard of the normal school work. Examinations have various objects in view; and while necessary, and excellent in their aim, they require constant scrutiny so that their tendency may not err on the side of excess. Where the hours of regular school routine are justly prescribed, the extra application involved is incapable of harm; in fact, allowance for it is implied. But where this additional toil seriously tells is, when the regular routine is so hard, and the hours so long, that the pupils are always on the borderland of overwork, so that the entire strength of the growing child is fruitlessly consumed, and either impaired health, or a complete breakdown, ensues.

No one will contest the propriety of testing, from time to time, the solidity and progress of the individual at school; since this process reveals not only the ability and advance of the pupil, but no less the capacity of the teacher.

School examinations are of two kinds—*test examinations*, and *competitive examinations*. These may be kept

distinct, but the former too frequently merge into the latter.

The knowledge of a child requires "testing" when he enters school, in order to ascertain the nature and extent of the education he has already received. In this way the teacher is enabled to place him with school-fellows of equal attainments, and in a suitable class where the lessons will be accordant with his capacity.

Entrance
Examina-
tions.

In a school which is "popular" with parents, the entrance test-examination may prove a severe competitive examination, if the applications greatly exceed the vacancies; and this keen contest of able pupils with their equals, who have only attained their position by application which necessitated strain, continues at the examination at the end of every term throughout the school, and tends to a continual raising of the standard in every class. If this tendency be not watched by an able head-master, all the pupils may be unwittingly pushed at work in advance of their years and ability, and the strain may cause permanent damage to the immature brain-tissue.

It is necessary that an examination should be held at the end of "term," in order to gauge the periodical progress of each pupil. The teacher is thus enabled to estimate the expediency of advancing the pupil to a higher form, or keeping him where he is. Such an examination both engenders a wholesome spirit of emulation in the class, and facilitates the teacher's work.

Term
Examina-
tions.

Some approximate equality of attainment must be preserved between boys of the same "form," and these examinations indicate removal to a higher "form," or retention in the lower. The boys are periodically enabled to compare their abilities and progress with those of the same age, and doing the same work as themselves.

Without this stimulus, many boys would be content with a dead level of mediocrity, and even able boys might be satisfied with the mere reputation of superiority, while, unconsciously, they were working below their powers.

The progress of a student, however, should not be judged entirely by the result of such an examination; the quality of the work and the industry displayed during the whole term should also enter into the judgment. Otherwise, a brilliant but lazy boy may, by "*cram*," obtain an unfair advantage over a less able school-fellow, who has worked harder, and obtained a more real scholarship.

It is an advantage of school examinations, when wisely arranged, that they prevent overwork by classifying pupils according to ability, rather than mere age or size. They also disclose the progress of the pupil, and teach him to do his best in the examination room, so that they fit him, not only for examinations which may hereafter determine his career in life, but also for using his knowledge at any time in the most effective way.

Competitive
Examina-
tions.

Wisely conducted competitive examinations—when the regular school work has not attained its limit, when they are unaccompanied by excessive mental anxiety and worry, and when the examiners are not too young—are no more injurious than reasonable competition in games. For individual to compete with individual, and school with school, in games, has no other than a salutary effect, provided the competitors are well trained and in vigorous health. But where insufficient and irregular exercise has preceded, an attempt at any feat of strength is dangerous. For a pupil, again, who has worked steadily through a term, or through his school-life, to compete with his equals at the end, stimulates ambition, as I have remarked, and produces other results of a beneficial character. If, however, the pupil has been idle during a

term, or during school-life, and attempts, in this undisciplined state, to make up lost time by dint of sitting up at night, and doubling his hours of work, the result must be injurious to mind and body, and, if frequently repeated, permanently disastrous. Unused brain-tissue becomes as limp as unused muscles.

Where a pupil has not sufficient ability to compete, and his tutor, failing to recognize the fact, enters him for the examination; or where a parent, in his ambition, greed, or penury, urges an incompetent child to this mental trial, a necessarily harmful issue can readily be foretold.

To demand, again, hard mental labour of a starved brain—a starvation arising from overgrowth, no less than from actual deficiency of food—is cruelty to children, and fraught with permanent damage to the nervous system.

In speaking of the harm resulting from the excess of *competitive* examinations, Smiles, in his work on "Life and Labour; or, Characteristics of Men of Industry, Culture, and Genius," remarks: "The waste of life, health, and sanity involved by the blood and brain tax of competitive examinations is terrible to contemplate. Instead of education fortifying the mind and body for the world's work, strengthening the character by habit and discipline, filling the mind with useful and practical knowledge, developing courage, patience, tenacity of purpose, and physical endurance as the foundation of the practical exercise of these great moral qualities, education, as now conducted, seems rather to be cramming, and forcing into the mind of certain descriptions of knowledge, calculated merely to enable one to 'pass' in a competitive examination, but of comparatively little use in the business of actual life."

The questions set for school examinations should Examiners

obviously be appropriate to the age and ability of the pupil. I have seen, however, questions placed before *children* to which, I feel confident, many examiners themselves could not have given adequate answers. This is not an encouragement to the pupil, as examinations should be; and many an intelligent, industrious, and sensitive child, galled at his incapacity to answer well, is thus rendered miserable, downhearted, and sick of work. The examination, instead of realizing its true function as a healthy stimulus to faculty, is thus converted into a moral scourge to character. Let it be realized by teachers that school troubles leave an indelible impression for life, and that a judicious ability to examine is as essential as the capacity to teach! It is not the men, but the system, that is in fault. Too often examiners are young men, who are not acquainted with the peculiar difficulties and wants of the student.

Examiners should be men of experience in *teaching*, who, recognizing what a pupil ought to know, set real and serviceable questions, and not intellectual puzzles. The teacher, and the examiner, should remember that some of the dullest boys develop into the ablest men. Isaac Newton and Charles Darwin were both dull boys at school!

The Harm
occasioned
by Examina-
tions.

There can be no possibility of doubt that examinations sometimes occasion grave harm at school. This arises in most cases—

1. Where a pupil is urged beyond his capacity.
2. Where a boy is pushed on for examinations when he has outgrown his physical strength, and has really no surplus brain-power with which to work. The period of greatest growth in the boy is from thirteen to sixteen, but especially during the sixteenth year. This remark is doubly true in the case of the girl, whose growth—

with consequent immaturity of brain-tissue and diminished bodily strength—is far in excess of the boy's growth during the school age. The girl's growth is largest during the years from eleven to thirteen, but mainly during the thirteenth year.

3. An ambitious, but not a clever boy, or one who is poor, and to whom a scholarship, or exhibition, is imperative for the continuance of his studies, works beyond his strength: the worry lest he should fail, the entailed sleeplessness at night, the prolonged toil during the day, and the frequent excess of the work beyond capacity, cause a complete, and in some cases a final, breakdown.

4. The excellent rule of "superannuation," so essential in the wise conduct of our schools, may be too rigidly enforced, and the examination of each "form" at the end of a term may then become a veritable competitive examination; since it means that the pupil who is not progressing up the school, form by form, according to age, is compelled to leave.

Mr. Pridgin Teale* has so well expressed himself on this point that I cannot resist the temptation to quote:—"Every term the boy's position depends greatly upon the examination, and every boy is struggling hard to secure his 'remove,' with the fear of 'superannuation' staring him in the face. 'Superannuation,' as now carried out in many of our public schools, is a very serious, and is likely to become a very injurious and unjust, factor in education. When first introduced its object was good. It was intended to weed out boys hopelessly backward, who as big elder boys among younger ones were doing no good to themselves, and harm to their

* "The Effects of Modern Systems of Compulsory Education and Competitive Examinations on the Mental and Physical Health of the Community." By Pridgin Teale, M.B., M.A., Oxon.

class-fellows. The effect, however, is insidious and progressive. At first none but idle and exceptionally dull boys fall under the rule; then, boys dull but not idle; and when all the exceptionally idle and dull boys have been cleared out, the rule still goes on closing in upon industrious and average boys, like an elastic band, ever acting, ever tightening, ever eating more deeply. Such a rule, when once it reaches industrious boys of good character, becomes unjustifiable and a positive wrong. Boys are dismissed from the lower forms of public schools, not for any fault of their own, but because other boys more clever, or more skilfully coached, or less honest than themselves, manage to win more marks, and secure a 'remove.' Boys of sixteen are turned adrift, after going through the trials and drudgery of their freshmen's years, just as they reach the happiest, the most profitable period of public-school life, and being too old to be admitted into another public school, have to run the terrible risks of a private tutor's small community. This is cruel to the boys, cruel to the parents, and unjust to the school, which loses many of the steady though not brilliant boys; such boys are the backbone of the school and of the nation, and turn out some of the best workers in after-life, often, like the tortoise in the fable, proving winners in the long run. But the effect is far-reaching. It induces a constantly increasing competition in the lower forms of the school itself, and it compels more early pressure in the preparatory school in order to secure a boy against the dreaded 'superannuation.' The immense popularity of our public schools at the present time is not an unmixed good for the community, as it compels them to make a selection from their too numerous applicants, tempts them to resort to competition as an easy means of selection, and enables them by means of 'superannuation' to ride roughshod over the interests

of dull and backward boys, who, above all, have need of the careful teaching and training for which such schools exist. Surely, in so doing, our great schools repudiate some of their most solemn obligations as national educational institutions, and whilst scrambling for the hares reject as worthless the not less valuable tortoises."

So closely connected with school examinations—of which, indeed, they form, or ought to form, a part—are the examinations from schools to the "Universities," the "professions," and "public government appointments," that I am unable to pass them over in silence. I would insist that it is both just and wise, that, after school examinations have terminated, the knowledge of the young should still be tested by examinations, not only for "degrees," but also for the "government services." It would be simply insufferable to resort to the days of nepotism, and bestow these offices by patronage rather than by merit. For there can be no reasonable doubt that competitive examinations do, on the whole, bring the ablest, the most intelligent, the most industrious, and, as a rule, the strongest and healthiest to the top. Macaulay, in a speech which Sir George Trevelyan * declares to be the most masterly vindication of the principle of *Appointment by Competition* that was ever left unanswered, urged, "that men who distinguished themselves in their youth above their contemporaries, almost always keep to the end of their lives the start which they have gained."

The purpose of examinations, however, should be the discovery of a boy's knowledge, and not the extent of his ignorance. Yet examiners too often merely strive to show the examinee how little he knows, by setting him catch questions, or intellectual conundrums. If examiners would simply set sound straightforward

* "Life and Letters of Lord Macaulay," by Trevelyan, p. 341.

Examina-
tions for the
Universities,
Professions,
and Services.

questions, so as to ascertain the real knowledge and attainments of the candidates, the whole race of crammers, so necessary at the present time, would be exterminated, greatly to the mental, moral, and physical welfare of the nation; and boys would be enabled to pass the examinations, far more than is now the case, for the public services direct from school, and without this undesirable assistance of a new, and highly specialized, professional class. In one word, it is most important for a youth who has been educated at a school, or university, that, by means of an appropriate examination, his brain material should be assayed and stamped with a recognized die to show that it is a genuine article of a certain calibre.

SCHOOL DISCIPLINE.

The subject of *Discipline* stands first in importance in the welfare of a school. If discipline be maintained efficiently, the school will be happy and healthy throughout; if the discipline be lax, neither mental, moral, nor physical health is possible. School discipline is not synonymous with severity. The highest state of discipline is compatible with the greatest gentleness. It means only that wrong-doing, and right-doing, will uniformly receive their appropriate reward; and that rules for guidance must be implicitly complied with for the sake of the whole community. It means, too, that might shall not overrule right, and thus protects the weak from the strong.

Bullying. Under the head of the evening preparation of work I have described the excellence of the plan, for all but the elder boys, that work should be prepared under a master's eye, as an aid, amongst other things, towards

maintaining school discipline. This course provides for the care of the younger boys during the evenings, and prevents much of that rowdyism and *bullying* which is most rife during the long winter evenings, and which, I suppose, will always exist to some extent; but a salutary object will be gained when a master can by any means reduce it, whether his mode be by occupying every spare moment of the boys' time, by his own personal influence and kindness of heart, or by showing his contempt for the bully. The forward insolent boy is not hurt by bullying, sometimes he is even benefited; while many a gentle and retiring boy, during the time he remains at school, is made seriously ill in consequence; his growth is arrested, his health undermined, and his spirit often crushed for the rest of his life. It is this boy who needs the protection of his master and of his elder school-fellows.

It is said that bullying is all but extinct. In fact, I am told repeatedly that there is no such thing as bullying in our schools nowadays. I will state, without fear of contradiction, that there is no such bullying anywhere as still exists in boys' schools, and even in girls' schools also. Perhaps those who possess an unenviable ignorance of human nature believe the flattering tale. But they must have forgotten the revelations brought to light a few years ago, where a little boy was killed by the blows he received on his back from "*the big boys belonging to the upper form*," the blows causing concussion of the spine and death.

It is said that "*boys will be boys*;" but I say that *boys ought to be boys*, and not brutes.

I would the tale were true. Probably those who know least about it are often the masters themselves, as it is most carefully concealed from them. The case of bullying at a day-school where the unfortunate victim lost his

life is not an isolated one. The same bullying had continued at that school probably for years, and had it not been for the boy's death the baneful practice would have proceeded unchecked because unknown, masters often believing that they have fulfilled all that was required of them with the termination of their class. I have heard of equally flagrant cases, fortunately not resulting in death, where the præpostors were neither flogged nor dismissed from school. Bullying of all kinds is unhappily still exceedingly rife in all schools, and must remain so until masters take more care of boys out of school, and until the præpostor system is remodelled.

As to the actual treatment of the bully there is nothing to compare with corporal punishment. The boy who is brute and coward enough to inflict pain on a smaller school-fellow, is only sensible to such a punishment from some one bigger or stronger than himself.

Præpostors. This leads me to refer to the subject of *præpostors* and *fagging*, in so far as they affect the health of individuals or schools. That the health—indeed, the whole life—of a boy is thus affected is beyond question; and the subject therefore is one for very grave consideration. I am aware of the danger of saying a word about old institutions—and this prefectorial system has endured for upwards of five hundred years—but the question should be resolutely faced, in order that the maximum of good of which the system is capable may be secured with the minimum of evil.

There can be no shadow of doubt that "sixth power" is an excellent element for good in a school when held by the right boy, with the right master over him. It is really a protection of the little boy from the bully (who is often one about his own size), over whom no one but the sixth-form boy has any authority or power. It

teaches the owner of the power manliness, self-reliance, responsibility, kindness of heart, and that mercy which "blesseth him that gives and him that takes." But when this power is possessed by a bad boy—and is there a master who has not had at one time or another such a sixth-form bully in his house?—it is a great power of evil, and can be, I believe, one of the worst instruments of oppression that can be devised.

The power, if it exist—as *I think it should*—ought to be the reward of *character* rather than of ability and strength, and not of ability or place alone. In this way the muscular brute would not only be prevented from exercising his tyranny over physically weaker school-fellow, thus marring the happiness of his school-life, but would also be hindered from creating the misery and ill-health which the depression of spirits resulting from tyranny inevitably produces.

I trust that the present system of "sixth power" may soon be abolished, and that a power so great for good or evil may only be given to "sixth fellows" whose character and ability deserve it. We should then also get rid of the *weak* sixth fellows, who are often worse than *bad* fellows, since they become simply the tools of bad boys, and are often made to do what the bad boys would not venture to do themselves, or are compelled to "wink at" evil deeds through fear.

At present the prefectorial system, or "sixth form power," includes:—

1. Boys who use their power simply for their own comfort and convenience, who do no good, and comparatively little direct, though a large amount of indirect, harm.
2. Boys who, while trying to do good, yet in their administration are unreasonable and tyrannical.
3. Boys who possess no qualification but brute strength

and their position in the school, and are the terror of all boys less strong than themselves.

4. Boys who on account of high character are a real guarantee for resistance to immorality, disorder, and tyranny, and who are thoughtful for others.

Many will ask why should præpostors' power exist at all? Præpostors are appointed to keep order when masters are not present, and where the scheme is properly organized they constitute the surest guarantee for the good government of a school. For there are times when masters must be absent from the boys; and it is during these hours, when masters know literally nothing of what transpires, that the worst offences are committed and the greatest bullying prevails.

Where the elder boys support the masters, and the masters support the elder boys, this evil is minimized. But under the present system these benefits are not fully secured. It should be an axiom, that school government, like all other governments, should defend the weak against the strong, and exalt *right* above *might*. But until the existing system is reorganized this principle will not be reduced to practice, but will remain inoperative. There is another valid reason why the institution of præpostors' power is excellent, not only in relation to the good of the school, but also in respect of the individual who is selected to exercise it. For he is called upon to wield power while still under the guidance and control of others, and this is an invaluable lesson to learn while young. A great schoolmaster has said:—"Præpostors are appointed not only for keeping order amongst the smaller boys, but to promote manliness, thoughtfulness, and a sense of responsibility among the elder." Arnold thought that the system would benefit the rulers even more than the ruled. And this happy effect would be produced were the system properly organized and the

grant of the power determined by the character of the recipient.

No doubt, the reason why "sixth power" is not taken from a boy who is unfit to wield it is that the stamp inflicted upon the boy would be so serious that it would practically necessitate his removal from the school, and this is a penalty too invidious to be enforced; but this is where the essence of the evil lies. "Sixth power," as the reward for being in the sixth, should not exist—the rule is wrong in principle, and is occasionally the cause of untold evil where it is in force—but the prefect or præpostor system should be substituted, and the power should be the reward of character in the first place, and of ability as a secondary consideration. The position should be tenable only from term to term, or during efficiency and good behaviour. At the end of each term the boy should give an account of his stewardship. If he has shown himself weak, incapable, or unfit, his tenure of office should naturally terminate, without the invidiousness of dismissal; whereas, if he has done his duty, the office would be again conferred next term.

Such a prefectorial system would render the power a really beneficial influence, and prove an incalculable blessing to a school, by putting the right boys only in authority; the reward, too, would be as great as well-deserved, and would produce splendid fellows.

It is said by some very able masters that the present system of all the "sixth" being præpostors is the best, on the ground that so few men are sufficient judges of character, or are so unbiased as to select only the most competent fellows—out of the sixth only—as præpostors; and that to select them on account of fitness for the post would be to return to the old days when choice of candidates held the place of competitive examinations, and with great abuse. In answer I would say, Let a council be formed

each term, consisting of the head-master and house-masters, for the purpose of selecting the præpostors for the *term*, and let no master select the præpostors in his own house. Let the council be judge and jury, and let the house-master be the barrister who pleads for those of his own boys whom he thinks entitled to the post. Let him state their good points, and let every one in the council press the objections which show that they are unfit either from vice, or weakness of character. This plan would avoid the possibility of favouritism. Further, let no boy have præpostor's power unless he be in the "sixth form," but add the condition that he is really capable of wielding it for good. If his fitness be doubtful, let him be placed on trial for a term, and if he prove a failure, let his re-election fail. By this means some of the muscular Christians, who are heads of "elevens," or of "fifteens," or of "the boats," would strive to become intellectual Christians as well. At the present time præpostor's power is too cheap to be adequately valued.

Circumstances, however, may arise in which it may be prudent to give præpostor's power to one or more senior boys who have a high character, and have also sufficient physical strength, in order to prevent immorality and bullying, or to maintain the high tone of the boarding-house or school during a term when the "sixth form" are insufficient in number, in character, or in strength.

While the present system of "sixth power" is in force, I think an additional protection to the boy should be instituted. For example, where an offence against the properly constituted authority of one of the sixth occurs, instead of the præpostor having the power to punish the offender forthwith, there should be a consultation with his colleagues in his house, not only to investigate the misdemeanour, but to punish it, and "minute" the

punishment, and thus avoid the possibility of personal spleen and petty tyranny.

I would recommend to the perusal of every lover of schools and scholars the "Life of Sir Rowland Hill." There, or in their work on "Public Education," * will be found a record of the work done by the Hill family for their school, and for education generally. Then followed Dr. Arnold, always regarded as the pioneer of the "sixth system:" as he was indeed really, but not literally. This system, however, though ably organized, instead of undergoing progressive development, is fifty per cent. less efficacious than it was when left in embryo by him half a century ago.

At the present time the work of *fagging* is more Fagging. nominal than real. The old days of boot-cleaning and other menial services are over; and fagging chiefly consists now in running errands, fetching articles from the "tuck-shop," toasting, carrying hot water, cleaning out the study, and fagging at games, especially cricket. I look upon it as a wholesome system, as at present practised, for it teaches well-to-do little boys, who are often upstarts, to be subservient to others, and may make them more considerate to those beneath them in position. It also prevents little boys being at the mercy of every boy taller or stronger than himself, since no one has a right to fag him but a præpostor.

There is one point in which fagging may be simply intolerable, and a cause of ill-health. This occurs when the fag is kept employed at meal-times—for example, at breakfast, toasting—and thus is either prevented from obtaining his own breakfast, or is obliged to bolt it, on account of the allotted time for the meal having almost

* Published by Whittaker, 1822.

elapsed. The supervision of the master should guard against this evil.

Punish-
ments.

It is a fundamental law of Nature that wrong-doing of whatever kind is followed by punishment; sometimes immediately, sometimes remotely, but always certainly and appropriately. Yet masters too often assign punishments which are the easiest for themselves to bestow, instead of endeavouring so to adjust the punishment to the offence as to exercise a benign influence on the character of the boy. Arbitrary punishments degrade rather than elevate; render the boy sullen, and create feelings of resentment; and irritate rather than make the transgressor admit their righteousness.

Punishments at school are a serious item, and as at present administered certainly do not improve the mind or character. On the contrary, they frequently cause distinct harm to the body by depriving the delinquent of fresh air and exercise, and are, therefore, unless judiciously adapted, a hindrance to the legitimate work of school. It seems to be forgotten that the troublesome and lazy pupil requires as much fresh air and exercise as the tractable and industrious one, and the deprivation simply renders him still more unfit for his duties.

The proper education of the young for their position in the world is a serious matter; but I would state with all the force of which I am capable, that the appropriate punishments for their offences form an equally serious consideration; for by the right exercise of punishment a whole character may be made or marred. Further, I would urge, that to allow a wrong, especially the first wrong, to go unpunished at the moment is often both unwise and unkind to the wrong-doer.

It is true that if we "train up a child in the way he should go, when he is old he will not depart from it;"

it is also true that if we "spare the rod we spoil the child." Not that it is always necessary to *use* the rod, provided the child knows that it *will be* used on the occurrence of wrong conduct. It has been well said, that it is the *certainty* of punishment which alone produces a wholesome influence. And here it is that the qualities of the teacher come into play. For in no case is the character of a school exhibited more clearly than in its system of levying impositions. The greatest nicety of adjustment, perfect patience, judgment, and knowledge of a pupil are necessary in according his just penalty. The strong and capable head-master knows that when the majority of the pupils abide by school rules and lead upright lives, he can afford to be less severe, than he otherwise would be, towards the few who transgress. The rise of a nation in culture and refinement is essentially accompanied by a mitigation of its punishments. The same law is true of schools, where a teacher can so elevate the general tone, that personal influence and persuasion will supersede most forms of punishment, and render the wholesale employment of such crude discipline as line-writing unnecessary.

In those schools where "discipline is (said to be) maintained without fear of punishment," I am at a loss to conceive the system by which it is secured; if there be not open wrong-doing, there must, I fear, be secret wrong-doing to a great extent. No boy should be sent to such a school.

That the brutal, indiscriminate, and incessant caning of former years—the expression rather of the master's spleen than the measure of the boy's deserts—has practically ceased is beyond question; it was exercised without any regard to the disposition of the boy or to his intellectual capacity, and was unseasoned by mercy. It engendered terror and hatred in the sensitive boy, the

"don't care" spirit in the average boy, and a dogged determination to do nothing in the bad boy; while at the same time it gave exercise to his love of revenge, excluded all sympathy between the pupil and the teacher, and tended to degrade the character of both.

The Hills said, "Severity produces fear; an habitual state of fear becomes cowardice; and a coward is a liar."

On the other hand, I do not believe that boys can be controlled without occasional punishment. I do not think it well that boys who need punishment should have a large proportion of their play-time abstracted for the purpose of writing (and spoiling their handwriting), or learning lines, when they should be out-of-doors getting exercise, and thus seeking and retaining health.

School impositions are of various kinds; but the one that concerns us most, because the one chiefly in vogue, is that senseless plan, unworthy of teachers, of writing *lines*. It does not improve the mind or elevate the character. It certainly spoils the handwriting; and is physically harmful to the body, in that it deprives the culprit of requisite fresh air and mental rest. I earnestly trust that some punishment will be devised more worthy of the intelligent and noble scholastic profession, and more in harmony with common sense. The regular school routine is already, by its frequent excess, detrimental to the brain, without this senseless addition, which has no redeeming feature except its ease of application.

School punishments are necessary; but the taught have a right to claim that the already overworked brain should not have its power of application injured in this fashion. Would it not be beneficial if the penalty assumed the form of some distasteful exercise in the open air, and thus replace the more genial recreation of games?

In this way the delinquents would not be deprived of the air and exercise necessary for work, and this adventitious work would not then interfere with the performance of the regular routine essential to education. The one plan would improve the health, and therefore the work; while the other entails ill-health, impedes growth, and prevents efficient work. I would, further, point out that it is not always the pupil who is at fault; it is sometimes the teacher. How else shall we account for the fact that some can teach, and maintain discipline, without punishments; while others can neither teach, nor keep order, without continual resort to this pernicious support of incompetence? Why is it, again, that the same pupil with one teacher will work well without punishment, while with another his imposition never fails? Is the pupil or the teacher at fault? Is it a question of tact, sympathy, and affection? Is it compatibility or incompatibility of temperament? I do not hesitate to say that the teacher is sometimes more at fault than the taught. And it seems to me to be the duty of a head-master or mistress, however inconvenient it may be, to remove a pupil from such an influence wherever it exists, and thus obviate a great wrong.

The very facility of giving "lines" encourages the practice. It would be interesting to analyze the hours when these "lines" are most frequently set. I have not a doubt that they are administered chiefly in that hungry hour before breakfast, and during that still more hungry hour before dinner, when reflection is in abeyance.

I am so convinced of the evils of this system of accessory work, that I would suggest that no "lines" should be set without a "minute" being entered in a public punishment-book, with the name of the teacher, the name of the pupil, the number of lines assigned, the day and hour on which

they are to be shown, and the reason for their imposition. And, further, that no pupil should be called upon to write his "lines" until the entry had been made. How strange some of these reasons would subsequently appear when deliberately expressed in writing! In this way the teacher who is always punishing would be known; the pupil who is frequently in disgrace would be detected, and perhaps some other means might be devised for obtaining the desired end. It might be found, for instance, that if a name were reasonably entered more than three times in a term, a little corporal punishment, which would not entail extra mental work, or forfeit exercise, would have a salutary effect. And if this corporal punishment were suitably administered, by a teacher who was neither angry nor hungry, the maintenance of school discipline would be aided.

Not long since I heard of a master who set 4000 lines to his pupils before his breakfast! I also know of a case where a boy had lines given to write which occupied every moment of his play-time for ten days. I will admit that this boy richly deserved a severe punishment; but I am sure every one will also admit that, in bestowing this form and extent of punishment, the punisher was worse than the offender, and showed himself unfit to be an educator of the young.

It is never wise to punish young boys for *restlessness and fidgeting* in school; but when they become so restless that work cannot be done, a few moments' run in the open air is the remedy. This condition usually arises from the nervous temperament of the boy, who, while undergoing the restraint of school hours, coupled with the impure air of class-rooms, becomes the more restless the more needful it is for him to fix his attention.

I would also urge that it is unwise and impolitic to give a boy, already usually overworked, extra work at all

as a punishment; whereas now such work is, as a rule, so prescribed that he really learns nothing from it whatever, and it only tends to spoil his handwriting.

The present mode of setting "lines" is pure senseless drudgery. It is just as sensible as putting prisoners on the treadmill instead of making them work at some useful and profitable occupation. No one can gainsay that such a form of punishment, co-extensive, I fear, with all our English schools, is utterly unworthy of the able men who resort to it as an aid to school discipline.

If play-hours are really regarded as too long for necessary recreation, let them be legitimately curtailed by extra legitimate work, and not abridged by unreasonable punishments.

But if "lines" must still be written, then I recommend that, instead of the present mode of setting 300 lines of Latin or Greek, which are written as hastily, and, consequently, as badly, as can possibly be done, boys should be made to write copies in copy-books like "The Public-School Series of Copy Books." Thus:—

This would improve handwriting

By way of further improving the handwriting, which is often notoriously bad, I would suggest that the quantity might be reduced in proportion to the quality of the writing—*e.g.*, if a boy had ten copies to write, and did them badly, he should write the whole; if moderately well, half might be excused; while if they were carefully finished so as to resemble the copperplate, one copy might suffice. They would thus learn the maxim, and have it impressed by the punishment, that quality of work is better than quantity in all the affairs of life.

Sometimes, I think, a good *birching*, when really

necessary, would do far more good than "lines" to a little boy, while it would allow him legitimate time to take exercise, have his freedom from restraint, and keep himself healthy; for it must be remembered that the naughty boy needs time for recreation just as much as the good boy, if health and strength are to be preserved.

A boy, too, often continues troublesome from day to day, simply because exercise has been debarred him, so that he is really out of health. To obviate this, and yet provide a plan of punishment other than the birch, Mr. C. E. Paget says:—"It follows, moreover, on these grounds that the plan of 'keeping in' boys for breaches of school discipline is objectionable, and that it is infinitely better to require some loss of recreation-time in more healthy ways. In large schools where the drill-sergeant is an institution there will probably be found no more efficacious mode of dealing with forgetfulness and petty turbulences than by calling in the aid of this functionary; and if experience goes for anything, there is nothing in the whole course of school-life more horrible, destestable, or heartrending, than the having to give up engagements in school sports, social pursuits, or other school delights, to be, for the period of one hour, in the tender and merciful hands of the sergeant for the purposes of drill. He is the *bête noire* of unruly school-boys' half holidays, and especially so when he parades his squad in full view of the, so far, virtuous brethren of the school; but in spite of the mental regrets of his recruits, he at least exercises a wholesome influence over them, and inflicts untold punishments for the infraction of school discipline without impairing their physical condition in any way, while at the same time lending 'tone' to their bodily exercises."

The days of punishing pupils with the cane for ignorance of their lessons are, I trust, gone for ever. If

lessons are not learnt at the proper time, it is the master's duty to patiently see that they are learnt, even if they have to be done under his own supervision. Surely no one will maintain that the writing of a hundred lines, as at present practised, is a suitable punishment for a boy who does not know his lesson ; it seems almost ludicrous to have to say that it is an appropriate punishment that he should be made to learn it, or even be *taught* it. The boy who plays when he should work must be made to work when he ought to play. When he thoroughly realizes that his lesson must be learnt sooner or later, he will generally prefer "sooner" rather than "later;" he is far too shrewd to attempt to play a losing game, although acute enough to attempt it when there is a doubt upon the subject. Since I wrote the above, I have read the following words of that able teacher, Dr. Farrar:—"I would say that, in ordinary teaching, the more you punish in any way the worse master you are; that he is the best master who needs to punish least; and that, if such a thing should exist as a perfect master, it is probable that, so far as mere teaching is concerned, he would never have to punish at all. 'Impositions,' 'lessons to write out,' 'lines,' 'abstracts,' whatever they are called, are, in the essence of them, confessions of weakness. They are in many respects injurious; there is very little to be said for them. 'Write me out five hundred lines of Homer, with all the accents.' I have known masters say that, perhaps in a moment of anger, perhaps for no moral fault; but what a bad punishment! Scarcely ever will the good master have to resort to such a method. When a form sees that he is in earnest, that lessons *must* be learnt, that if they are neglected from idleness they will have to be said again; where the master is endowed with such gifts that he can encourage, help, sympathize, inspire, he will either find punishments all but extinct,

or he will measure by their frequency his own incapacity and his own failure."

Punishments are unquestionably required in the management of schools for misbehaviour of all kinds. But it is essential that they should be appropriate; be adjusted to the fault; be judiciously administered; and that they should affect the offender only, without falling on his school-fellows or his parents. The sense of equity in boys is wounded by unjust punishments.

If masters could realize how an injudicious, unwise, and needless punishment, administered in the heat of the moment, weakens their authority, and lowers them in the estimation of pupils, punishments would be at once reduced by at least one half, and made more reasonable in their imposition.

Mr. Sidgwick has well said,* "It has always seemed to me that the most important principle of school discipline is to keep wholly apart, in two quite distinct classes, what I may call *school offences*, and moral offences. Inattention, talking in school, unpunctuality, and even idleness in work, and, I may add, smoking and bound-breaking, on the one hand; and cheating, lying, dishonesty of any kind—whether in the work or otherwise—objectionable language, drunkenness, or vice of any kind, on the other. The boy should see without possibility of mistake—both by the kind of punishments, the loss of his master's respect, and even the man's tone and manner and look in dealing with the offenders—the vast difference between the two. From experience, I should say that there is a real danger of even a good master making too much of small things, and so blurring this distinction; and note that, if he does so, he not merely demoralizes the average boy by lessening his respect for the school law, but he also lays a heavy burden on the

* "General Aims of the Teacher."

conscientious boy, and tends to make him either morbid or a prig. It is a common mistake for writers, and private individuals who cannot write, to make—namely, to imply that there are no such things as highly conscientious boys. It is not true. You will be sure to find in a form of thirty boys, now and again, the fine-natured boy, with a high standard and an acute sensibility to blame, or, better still, to blameworthiness—a boy to whom not only lying or fraud or vice would be as impossible as stealing or murder, but who feels no temptation to idleness or deliberate law-breaking of any sort, but yet who, from constitution, may be unpunctual; from high spirits, may be talkative or inattentive; from accident, may neglect his lessons. Such a boy, if the master is pedantic or solemn about minor offences, will follow his bad lead only too surely, will lose the sense of proportion and become morbid. Therefore, I say, for all sakes, keep strongly before you the common-sense distinction. About the minor things be careful to make no fuss; even be cheerful and friendly in dealing with them. Don't act the stern lawgiver, but rather the companionable policeman—or, to use a better metaphor, the reluctant instrument of a law of nature."

The plan of quietly sending a boy away from school for some indiscretion, or even for various indiscretions, often wrongs his parents, and injures the boy for life, when he has, perhaps, only shown a boy's waywardness and wilfulness, and should simply and more effectively have been admonished by a severe whipping with a birch. For grave evils, however—such as would, away from school, fall under the jurisdiction of the law—it may be necessary to hand a boy summarily back to his parents, as being beyond the scope of school punishment to deal with. But expulsion, and the request to the parent to remove his boy, are too frequently resorted to, when the

appropriate punishment, as I have said, would have been the employment of the *birch*.

The public investigation of a recent case where a boy was taxed with a serious crime, and where insufficient evidence was forthcoming to bear the sifting of a formal trial, must have made it clear to all school authorities that a moral certainty is an inadequate reason for action. A boy should not be condemned and expelled because in the mere *opinion* of his masters he is guilty. He must be proved guilty beyond reasonable doubt, or school management is impossible, and serious and permanent wrong is perpetrated.

The plan, again, of putting a boy down from a higher to a lower form punishes his school-fellows more than the offender. It disgraces the form into which he is placed, and is bad for the boy himself, because it makes him lazy, owing to the easier work, and thus affords him time and opportunity for exerting a bad influence on the boys among whom he is placed. Moreover, it is only an occasional sensitive boy who feels the punishment at all.

When a big boy cannot accomplish his work and cannot be managed without constant punishing, some gross fault somewhere exists ; and if a change of masters cannot produce a better state of affairs, the boy should be removed from school for the sake of others.

I would further urge, that when the whip or spur is continually required in teaching, there is either something wrong with the system of teaching, or the master has not the power to interest his pupil, or the boy is being taught what he has not, at his present stage, the power to grasp ; whereas, if another system, or another master, be tried, or fresh work be given, there are few pupils who would not reward the master by necessitating the use of the curb rather than of the whip or spur. Is

not the constant complaint one hears about the "modern side" of our public schools being a refuge for the idle boys, owing rather to the incapacity of the masters than to any other cause? Is any trouble taken to really interest them?

But though I advise the use of the *birch* as the most suitable mode of punishment for some school offences, I would impress the importance of its being inflicted with great judgment and long-suffering, so that in its exercise wrong may not be permanently inflicted on a boy who may be really unaccountable. I can call to mind a boy at school, who, generally, was a fairly good boy, did his work, and gave little trouble; but every now and then a period of insubordination would intervene: he would irritate, annoy, and commit every act of irregularity that he could conceive; this would last for days, until something prompted him to "let off" the steam by a long ride on his bicycle, or other energetic means, when he would return at once to his former good habits. During his morbid intervals, the question of whipping him more than once arose—and he richly deserved it, apparently—but I felt it my duty, knowing his freaks, to use my influence to prevent it, since at those periods he was quite unaccountable for his acts; and I maintained that he should be either removed from school as unmanageable amongst a number, or be handed over to my care at the sick-house, to be treated as a diseased, instead of a naughty, boy. For several days he would remain with me, doing everything that was irrational, when he would return to school in his right mind and go through his duty as usual. To thrash such a boy would be utterly wrong. This, no doubt, is an extreme case, but minor cases occur of a similar character, in which great discrimination should be exercised, and conscientious judgment brought to bear before using such

punishments, lest a great wrong, never to be obliterated, may be committed. It is *sometimes* wrong so to punish : *often* wrong to withhold the punishment when deserved.

And to ensure such conscientious treatment I would ask, ought not the major school offences to be dealt with by a head-master and some of his senior colleagues, and not by the head-master alone? And ought not a code of rules, such as the Hill brothers devised, to be in force in schools, in order that parents might be protected, and boys know that they will be justly and uniformly dealt with for each offence, so that all possibility of momentary temper or caprice may be removed? Further, ought not every offence, and every punishment, to be entered in a "minute" book kept by the head-master? We should not then hear of the same offence, committed by different individuals, being punished in diametrically opposite and irrational modes.

In punishing boys at schools it must not be forgotten that the issues at stake are great. They are the keenest critics in the world; and a whole life may be, and is frequently, blighted by an unjust sentence at school—to say nothing of the wrong inflicted on parents and friends.

I repeat that in the question of offences and punishments at school, a far greater wrong may be committed in the punishment of an offence by unwise and unjust handling than is entailed by the offence itself. And I maintain that punishments should be appropriate to the offences committed; and if not appropriate, they may be, and often are, grossly unjust to all concerned.

But while I have thus insisted on the importance of retaining the birch in the punishment of the offences of the young, I think it should be used with circumspection and discrimination, and not be employed " wholesale." Further, I think every delinquent should know clearly beforehand for what offence he is to receive this

corporal punishment. Yet this has not always been the case; for it is on record that a head-master once read out a list of boys who were to "stay down" to be whipped. When it came to the turn of one of them, he remonstrated, as he was unacquainted with the wrong for which he was about to be punished. The answer he received was, "Yes, he must be whipped as his name was down on the list." After undergoing the ordeal, the boy still pressed to know the reason of his punishment. It eventually transpired, on investigation, that the head-master had picked up the wrong list from his study-table; the list of boys whom he whipped was a list of names furnished to him of boys who wished to be "confirmed." What a preparation for confirmation! What mingled feelings of hatred and malice must have been mixed up with the religious tuition those boys underwent at that important epoch in their lives!

There is another system of controlling boys, involving neither corporal punishment, nor writing and learning lines. I refer to the use of wholesome "*chaff*" by the master, which, when exercised with judgment and true sympathy, is of untold value in keeping them under control. It must, however, be borne in mind that it is the fault which should be ridiculed, and not the boy who has committed it. At the same time, it cannot be too carefully remembered, that in unskilful or unsympathetic hands even this method may become an instrument of torture. It should, therefore, never be used unless the master who employs it is quite sure that he is entirely in sympathy with his boys, and has also the power of making them appreciate this fact. It is capable of proving so sharp a weapon that it should be carefully and tenderly employed: with the remembrance that, as a boy cannot retaliate, a tendency to simply cringe under it may be generated, with a resulting feeling of hatred.

One of the best school disciplinarians I ever knew, who loved boys and was beloved, could keep them under control almost by this means alone. Where a master is honoured and respected by his boys, who feel that his sympathies are with them, they will strive to do right rather than arouse his indignation by wrong-doing.

It may, perhaps, not be amiss to append what I consider to be a rational scale of punishment for schools:—

1. *Public expulsion* when the nature of the offence is such as to come within the law of the land rather than within the scope of school-rules.

2. *Private removal* when the boy gains no good for himself, and proves a source of evil to others; sometimes it may even be necessary to remove a "set" of boys to prevent insubordination.

3. *Birching* for the graver school misdemeanours. This plan should be tried, if possible, even before removal, and thus allow the boy every chance of redeeming his character and remaining.

4. *The drill-sergeant* for the lesser misdemeanours, varying the time according to the degree of the evil.

5. *Copper-plate copies* for minor offences, such as unpunctuality, and manifest laziness. Where lessons, however, are not known, the boy should be compelled to learn them until he has succeeded, and this should be the only punishment.

6. *Wholesome chaff*, which is often effective as a preventive.

As I have recommended the proper use of "corporal punishment," I should like to state more explicitly the scope of my approval and disapproval in this respect.

1. *I approve* of the use of this punishment rather than expulsion, for some of the graver school offences; and for the continual repetition of lesser offences, which other punishments have failed to control.

I approve of the use of the "*birch*" only, for it simply temporarily stings, and neither damages the skin nor the subjacent structures. It should be administered only on the place provided by Nature; and thus applied I continue to advocate it, as one of the kindest and least injurious punishments.

2. *I entirely disapprove* of the use of the *cane*, for it can be used as an instrument of torture, severely bruising the skin and subjacent tissues for days and weeks. Moreover, a vindictive cut with the cane on the hand can be too easily given in the moment of exasperation, and this could not occur where the birch was employed; the use of the birch, too, allows the temper to subside before its application.

I altogether disapprove of corporal punishment for elder boys, except for the "bully." The knowledge that the birch is always ready to be used would be quite sufficient to act as a deterrent, and would render its employment seldom necessary. The use of the "cat" was only required a very few times to put an end to "garrotting." The brutal bully, whether man or boy, is always a coward, and dreads nothing so much as the personal application of the treatment he himself employs.

The ears should never be boxed. This vicious practice—entailing inflammation of the ear, meningitis, and sometimes death—is still, I regret to observe, in force at some of the best schools. The back should never be thumped, nor should a child be held by the shoulders and shaken—a very common practice, and one which I have known to cause spine disease and death. I need scarcely add that rulers and sticks should never be used.

I have written strongly about corporal punishment, not because I desire to see it frequently repeated, nor because I think it necessary to be constantly resorted to,

but because I hear continually of far greater wrongs being inflicted, and mostly in those schools where corporal punishment has practically disappeared. To illustrate my position:—a boy commits a grave fault, and a good whipping would probably have a permanently beneficial effect; instead of this he is quietly removed from school; no other school will receive him: he is sent to a private tutor to live with many other delinquents like himself; all his happy boyhood is crushed, his life blighted, and his parents disgraced. What I urge is, that a sound whipping would have been the appropriate punishment, and would morally have benefited the boy; whereas his removal from school has simply done harm to himself and his friends, with no beneficial result whatever. In fact, the punishment was out of proportion to the offence, and inappropriate in the highest degree; for it failed to effect the desired end which all punishment should, at least, aim at securing.

It must not be thought that schools are mainly to blame for the infliction of unmerited punishment: the practice is almost entirely owing to the popular outcry against corporal punishment in any form. It is well known that no government or body of men, in any department of life, can long withstand a popular demand, whatever it may be. In years gone by popular feeling was in favour of corporal punishment to wrongful excess; it now favours, and with the implication of evil consequences, its total abolition.

In advocating the right and proper use of corporal punishment in schools, I am aware that opposition has been expressed by some of the best schoolmasters. Amongst them I would name Mr. Maurice Hime, of Foyle College, Londonderry, who has said:—

“Persuasion, my experience more and more assures me, ought to be the grand art cultivated by the school-

master. To be able to convince his pupils that truth, and purity, and industry, and chivalrous tenderness towards the young, and manliness, are better, far, far better than impurity, and untruth, and indolence, and bullying, and unmanliness, and cowardliness—this is the great business of a schoolmaster's life. To perform this business satisfactorily is really not a particularly arduous task. The boys who frequent our schools (I include all schools except reformatories) are, generally speaking, desirous individually to be good, not bad. It is the schoolmaster's province to see that his boys, as a collective body, have a similar desire. To succeed in establishing amongst them a love of right and a hatred of wrong can, I am convinced, only be effected by convincing them, through their reason, that wrong ought to be hated on account of its own evil nature and evil consequences, and that right ought to be loved on account of its amiable nature, and the endless good that flows from it. Corporal punishment, I am satisfied, will never convince a boy of these things."

If boys can be thus restrained from evil, corporal punishment should of course be banished. To inflict it for idleness, inattention, unpunctuality, and general troublesomeness, is, I believe, wrong. But to employ it for gross immoralities, including thieving and lying, for repeated bullying and brutality, for smoking and drinking, and for settled insubordination to rules, is, I still urge, a most wholesome and fitting practice, instead of resorting to the boy's removal from school and the consequent cancelling of his chance of reformation of character.

So heartily do I agree with what Dr. E. A. Abbott, of the City of London School, has said concerning punishments, that I cannot resist the temptation of extracting from his little book on "Home Teaching." If his pre-

cepts were applied, personal home training of young children would all but obviate the necessity of punishment at school, since it is neglect of home-training during childhood that leads to much vice at school, and in the world. He says:—"In the reaction against arbitrary or unapt punishments some people have been led to the conclusion that, as an invariable rule, all punishment should be natural, that is, should follow naturally as the result of the offence. If, for example, a child tells a lie, he is to be punished (so it is maintained) by the distrust which naturally awaits his future statements, till he has regained a character for truthfulness.

"But it seems clear that this rule cannot be always adopted, either with physical or moral errors. If a child plays with fire, a natural and convenient punishment would no doubt be that he should burn his fingers in moderation. But Nature in such cases is not moderate, and may punish the child once for all by leaving no child to punish a second time; or by grievous and permanent crippling or disfigurement. In the same way with moral offences, if a boy who has told a lie is to be treated for a length of time as a liar, his self-respect may be permanently lowered or destroyed, and so he may become a moral cripple.

"The best rule seems to be that parents and teachers, in punishing, should avoid all appearance of vindictiveness, punishing not because *they* are injured or inconvenienced, but because a wrong has been done and right demands correction and amendment. Provided the child feels that the punisher has no pleasure in punishing, it will not always be necessary that he should recognize exactly that the punishment springs by a natural sequence out of the offence. . . . Flogging does not spring naturally out of lying; but in spite of any philosophic dicta to the contrary, there is more hope of curing

a boy of lying by flogging him, than by distrusting him for days together, as a liar. . . . Further, let it be remembered that punishment, if fit, is effective in proportion as it is certain and speedy. It ought not, therefore, to be delayed, by one who is conscious of being wholly free from personal irritation, any longer than is necessary to investigate the truth of the charge and select the fittest penalty."

A head-master who is constantly requesting parents to remove their boys on account of offences, instead of looking upon the boys, together with their faults, as "necessaries," should be regarded as a failure, entailing more harm even than the misconduct of his boys. Boys are sent to school to be educated *completely*; not simply to be *mentally* taught so many hours a day, and then left to themselves for at least eighteen hours a day, with the punishment of dismissal on the occasion of (frequently venial) wrong-doing.

Head-masters are needed who know how to strike hard at boys' offences and yet retain their hearts' respect and love.

There is no doubt that a time of trial, of one kind or another, occurs to all boys at school. Happy the boy who has his first great trial early in life, while he is still pliable, and before he ventures into the world. With some boys the trial is manfully met and overcome, and increased strength of character results. With others, often those *only weak* in character, the trial is overpowering, and they fall—fall terribly sometimes. I wish I could inscribe deeply in the heart of every master who has boys to educate that it is his office—indeed, his solemn duty—to act the good Samaritan by such a boy, and strive by punishment, by management, and especially by love, to win him back at school, into the right path. It is these uninterested, unmanageable, and morally-

neglected boys who should have a master's chief attention ; whereas these unfortunates are only too often turned away, while the interesting and lovable boys are apt to be petted, pampered, and spoiled. So strongly do I feel the power for good that a really capable, conscientious master possesses over a boy under his care, that I would scarcely lose hope of even the worst boy, if such a master would honestly strive to gain the boy's heart, and let him feel that, in spite of his unlovable nature and his personal unworthiness, he still possessed his master's sympathy and care.

It must not be forgotten that our great Public Schools belong to the nation. They are administered by a governing body for the nation's benefit: the governing body appointing a head-master to execute the necessary detail for their appropriate working. Now, it seems to me, that as they are the schools of the nation, no member of a school should be removed—except under that most salutary rule of “superannuation,” which, exercised with prudence and equity, should be compulsory in all public schools—without the previous sanction of the governing body, or at all events without the parent's right of appeal to that body before the decree is put into force. Were this legitimate right conceded to parents, school questions would not so frequently be submitted to the bar of public opinion in the *Times* newspaper; but would be equitably and finally settled by the governing body of the school. Moreover, such a rule is simply just, for a public-school boy can only enter a public school by bringing a good character, and if he lose his character at school, he should possess the opportunity of redeeming it there.

This rule would do away with all personal spleen in the dismissal of boys, and would prevent their being quietly removed for trivial, though troublesome, offences ;

it would also cause the school authorities themselves to endeavour at least to deal with them, as should be the case, in the first instance. Moreover, did this rule exist it would probably never require to be put in *force*; the very fact of its existence would render its exercise unnecessary, as it would completely extinguish the arbitrary exercise of sole power, which so few are capable of employing with justice, or with judgment.

Above all punishments required in the management of a large number of boys, I would urge the plan of rewarding good conduct, rather than the converse—of punishing bad conduct. Rewards.

Both plans are required, and answer; but rewarding good conduct is, I think, the more salutary, and tends, where it can be carried out, to promote the health and well-being of boys, and the happiness of masters. A kind word or a kind act, seasonably bestowed, will often win a boy and urge him to strive to do right, when no punishment will produce any good effect, and will make him feel that his master is not a slave-driver, but a kind and sympathizing friend. Most boys—but not all, by any means—are like young animals: treat them kindly in breaking them in, and they become amenable to guidance; reverse the system, and their share of obstinacy and carefully-planned waywardness is at once revealed.

It should be borne in mind that by rewarding good conduct the commission of evil is prevented; and this is an enormous gain, since it establishes right-doing as a *habit*, which after a time is not easily violated. On the other hand, punishing bad conduct has the great defect that it can only be put in action after the evil has been committed; and thus the habit of wrong-doing is formed, while the perpetrator, even before the evil is committed, will sink into the debased habit of weighing in his mind

the amount and kind of punishment that is likely to be inflicted.

In our prisons, the system of giving good marks daily for good conduct is of great value, for it establishes a habit of endeavouring to act rightfully, which probably has never been promoted before, and tends to become of permanent benefit to the prisoner.

In concluding this most important subject of school discipline, I cannot but express the feeling of scorn which arises when I hear of a boy unwisely punished for some fault; this feeling, however, is soon followed by the sorrow of contemplating the ill effect it produces on the recipient, when an equitable punishment would have excited a beneficent result. No boy resents a just punishment; but an inexpressible sense of wrong fills his heart when he is unjustly or wrongly punished. On the other hand, a boy feels contempt for a master when he fails to receive a punishment which he has richly deserved. There are some few masters, however, sufficiently strong and magnanimous to withhold a well-merited punishment on an offender who has thoroughly and penitently realized the evil he has perpetrated. Such magnanimity may sometimes be suitably bestowed, and will exercise far more effect on the boy than the most severe punishment, and thus possibly prove a turning-point in his life.

The Code of
Honour of
School-boys.

There is no subject in the whole of this treatise, which I feel so diffident in attempting to handle as *the code of honour amongst boys at school*, for it is fraught with momentous consequences, which demand, for its complete treatment, an abler pen than mine.

I am convinced that no subject is involved in the whole course of school-boy life, on which moral health, and moral disease, so largely depend as that of the code

of honour. It determines the entire *tone* of a school. The *moral character* of masters will influence the tone greatly: the *code of honour* amongst boys themselves, *much more*. High principle amongst masters, *especially in the smallest affairs of life*, which boys keenly notice, *may* influence the *few*: the code of honour of the boys *will* affect the *many*.

So acute are boys in their observation of the characters and dispositions of masters, that a boy, only twelve years of age, said, in speaking of his form-master of whom he was afraid, "I am sure Mr. X—— has really a kind heart, because he is so fond of his kitten."

If masters can only influence for good the few right-minded boys, these will impress the weight of their character upon the many; and thus the code of honour of the entire school may ultimately be raised to the highest attainable level.

This code varies greatly in different schools, and in the same school at different times, depending largely upon the circumstance of the masters endeavouring to influence the characters of their pupils; or simply teaching their class a certain number of hours, and then dismissing them from their supervision.

The code of honour amongst boys is unique: nothing else exactly resembles it in the world. It rises to the highest summit of virtue: it descends to almost the deeps of degradation. So exacting is this code, that, on the occurrence of a wrong, an innocent boy who is accused, and on whom suspicion rests, will suffer any punishment which a master may inflict, without a murmur, rather than bring, by a word, the fault home to the guilty.

On the other hand, the code may ensure that the sinner will permit the innocent to suffer, rather than manfully admit his guilt, undergo the penalty, clear his conscience, and exonerate his fellow. Worse still, the

boys' sense of honour is often at so low an ebb, that other school-fellows will be cognizant of the guilty one, endorse his despicable conduct, and abstain from bringing the force of school *public opinion* to bear upon him, and compel him to acknowledgment. Not for a moment would I counsel, or even countenance, that a school-fellow should quietly and privately "sneak" upon the wrong-doer. But the public opinion of the school ought always to be on the side of justice; and the honour of a school is at stake when one of its members has not only disgraced himself by misconduct, but is doubly stained by allowing an innocent school-fellow to suffer in his stead. In such a case, the whole school should insist upon the culprit himself admitting his guilt. Failing this, one of the leading boys should publicly announce his intention of saving the honour of the school by impeaching the offender.

Sometimes a "set" of boys will undermine the character of a whole school; and, although their evil deeds are well known throughout the school, no boy is courageous and honourable enough to acquaint the master, and thus prevent others being led astray. Such conduct on the part of a boy would not be *sneaking*, but true manliness.

Some boys, again, will commit a silly indiscretion—what is frequently called a "boy's trick"—and annoy a master, who, in the interests of discipline, demands the name of the defaulter. The whole "form," or the whole school, remains silent. Consequently the form, or school, is punished in a body, and the offender is mean enough tacitly to concur. The offender should obviously and honourably admit his error and manfully face the penalty. It has been well said: "The courage wanted to-day is not the courage to face the cannon's mouth—there is plenty of that in England's make-up—but the

courage that dares to be true. The men who are wanted are men who believe it is right to tell the truth : men to stand erect, without the crook in the back that leads often to success, but not to virtue—that is, manliness, which is more than opposition to vice.”

But if the offender is not prepared to acknowledge his error bravely, the whole form, or school, should bring the weight of its influence to bear, and chivalrously aid the master, since his efforts are obviously directed to the maintenance of the school's honour, and therefore of the honour of each boy. Why is the boys' code of honour so frequently of this inferior type ?

Further, one boy will sometimes *steal* from a school-fellow : another will *lie* to his master : another, *immoral* himself, will endeavour to degrade the standard of purity : others will *smoke*, and *drink* : others, dishonestly prepare their work with *cribs*, and thus gain an undue advantage over more honourable competitors. The master will naturally use every effort to detect the wrong-doers. Yet this code of so-called honour permits them to use arts for screening a culprit ; and they thwart the master in every conceivable way, even to throwing him on the wrong scent, instead of seeking to clear the honour of the school. This nobler course, too, would arrest the guilty early in his downward career, for

“ facilis descensus Averno ;
Noctes atque dies patet atri janua Ditis :
Sed revocare gradum, superasque evadere ad auras,
Hoc opus, hic labor est.” *

In justice to boys, however, I am bound to add that, in my opinion, this course could be more easily effected were the scale of punishment more just and equitable, and unaffected by caprice or momentary temper.

* Virgil, *Æn.* vi. 126.

Into the details of the acts which testify to the absence of fine feeling, and of the sense of rectitude, I need not enter. They include the obnoxious treatment of new boys; the commission of despicable acts of ill-treatment based solely upon the existence of peculiarities in the character, or manner, of boys; and the cowardly advantage taken of a boy's innocence, or harmlessness, or delicacy, which should rather operate as a shield and protection to him. These acts result in deeper deterioration of the bully's own character; in injury to the health of the sufferers: and, too frequently, in producing a deterioration also in the latter's character by reason of the shifts and evasions which this tyranny tends to create.

The manly and righteous boy, rejoicing in higher position, or larger character, or greater strength, will accept fully the responsibility that he is "his brother's keeper," a responsibility which will only become the deeper with the weakness of his "brother." And the code of honour imperatively demands restoration, by the concurrent efforts of masters and boys, to this higher level.

SUNDAY AT SCHOOL.

Sunday at school is significant to masters and boys, according to the point of view from which the *master* regards that day, whether he recognizes the fact that a day of idleness is a day ill spent; while a day fully occupied may be made one of happiness, or wretchedness, in proportion as the master appreciates the nature of the boy.

To many boys Sunday at school recalls happy reminiscences which have proved of lifelong value, and have greatly helped to mould the character in uprightness, purity, and unselfishness; while to others it brings the remembrance of the most miserable days: days whose

deeds they wish to bury in oblivion, but which are ever too fresh in their memory to die : days on which "*they had nothing to do*," and were thus led to the commission of sins they would fain forget and atone for, simply because the master failed to recognize that a day of idleness is the *Devil's day* : days of wretchedness and terror to the small boys, when they suffered the greatest bullying because the big boys "*had nothing better to do*."

Sunday at school is the day of all others when the master should devote special time to his boys. It is the one day of the week when the best, *and the worst*, friendships are formed between school-fellows, which should be encouraged, or discouraged, by the personal vigilance and influence of the teacher.

By quiet conversations, too, such as a father would hold with his child, causing the boy to forget the master in the friend, and involving a complete absence of the forms and methods of speech attached to the sacerdotal office, a master may, by personal character, mould and remould into any form the character and disposition of the boy.

Sunday is pre-eminently the day on which parents should strive by their letters to *keep touch* with their children as far as possible, and maintain the remembrance of home influence.

The services in the school chapel should be short and impressive, and adapted to interest and instruct boys. These golden opportunities will be appreciated, and will prove of inestimable advantage to those who are so placed during school-life as to reap their benefit. Those who have been long connected with schools are keenly aware of the difference between the head-master who, by ability, and sympathy, can rivet every boy's attention during the sermon, and thus manifestly produce a

beneficial effect during the week in the tone of the school ; and that head-master, or chaplain, who is incompetent to address boys, and consequently unable to gain even their hearing, so that each boy settles himself to sleep, which tells a tale more significantly than any words can depict. Who can measure the incalculable gain to the one boy, and the loss to the other ? But masters cannot be talking to boys all day on Sunday, and there is a limit to the attendance of boys in chapel, *if the services are to produce any good impression*. The interval, therefore, between the services and the meals must be considered. Part of the time may be profitably spent in reading aloud : in private reading of suitable books : in writing home : in visiting friends : in listening to an interesting address : while country walks, the museum, the school library, or an organ recital in the chapel, afford much healthy and profitable *recreation*.

Earnestly would I impress upon school authorities, that the moment Sunday is regarded as *a bore*, the boy will surely endeavour to relieve the weariness, and too frequently by undesirable methods.

VIII.

PLAY.

It is as important for human beings—especially adolescents—to take *exercise*, as to live in good air, eat wholesome food, and obtain sufficient sleep.

We, as a nation, owe our success mainly to our mental and bodily vigour—a vigour which is irrepressible. What other nation would dream of playing football and polo in India and Burmah? Our British energy, as a rule, requires little encouragement or fostering; usually it is naturally exuberant, and simply requires right directing.

The physical education of the young tends to training in perception and judgment, as well as in adroitness and courage. Even yet, however, the influence of physical education on mental and moral growth is not sufficiently regarded; and the law is not yet practically recognized that bodily and mental culture must be concurrent if the highest development is to be attained.

Our world-wide reputation, as well as our universal presence, is mainly owing to the vigorous habits of our sons. The sportsman continually precedes the trader in new countries; and the trader the statesman. These qualities can be developed in our school playing-fields. Let them, therefore, be encouraged in every possible way, so that the honour and fairness which usually attend them may be promoted.

No question in the training of the young is of more general importance than the mode of occupying *out-of-school* hours. Are they as fully and wisely occupied in that time as during the hours of work? If not, moral discipline must be absent. Do the boys take regular and vigorous exercise? If not, no sound health can result. Is their freedom from work a time of cheerful recreation, and constant lively occupation; or, is every hour a time of weariness and idle lounging? If the latter, then no guarantee for conduct exists, and the character and tone of the boys must deteriorate.

I shall now endeavour to set forth the value of physical education to boys and girls, with especial reference to the virtues of well-organized games in which *all* shall join.

EXERCISE.

Advantages of Exercise.

Regular bodily exercise is the greatest preservative of health. Without it no mental, moral, or physical soundness is possible. It is by this means that the natural functions of the body are normally performed, disease prevented, and life prolonged.

In considering the question of recreation, all sound experience shows that adequate exercise is absolutely necessary to produce the highest state of vitality in the body; and the brain, being part of the body, participates in the increased power. It would be most unreasonable to expect a healthy vigorous brain, without a well-constituted body; and the converse is also true. Further, exercise is of the highest value in relation to *character*, as well as to *health*. All boys' games tend to develop good temper, sometimes under very trying circumstances, with self-reliance, self-control, endurance, and courage under difficulties, quick action, and rapid judgment. They

are thus educated in a habit which will help to make them excel in the battle of life.

The whole time during which the boy is not at work, asleep, or feeding, should be spent in recreation of some kind, both for the purposes of health and the expenditure of superfluous force.

Recreation, or *physical education*, is scarcely second in importance to mental development.

Thus, in *physical exercise* all the functions of the body are involved. The *circulation* of the blood is quickened, the necessary blood changes are more effectually carried out, and the increased action of the diaphragm aids the return of the venous blood : congestions are thus obviated, and the heart is not overtaxed in consequence of the increased exertion.

The effect on the circulation is productive of incalculable benefit to those who undergo much brain work ; for all organs in full work have a determination of blood to them, and thus brain work relieves muscular weariness, and muscular exercise produces rest to the brain.

The increase in the circulation of the blood from exercise causes a more rapid destruction of tissue ; more detritus accordingly has to be removed—burnt up ; there results an increase of animal heat, and a slight rise of temperature is found by the thermometer after active exertion, which is again reduced to normal, on the cessation of exertion, by means of the evaporation of sweat taking place from the surface.

The *respiration* in addition is quickened, and if the exercise be taken in the open air, more oxygen is inhaled ; by this means the blood impurities are more rapidly oxygenated and destroyed ; and the blood, being thus depurated, becomes more healthy, and thereby causes increased vigour, greater health, and longer life.

The lungs at *rest*, and the lungs when the body is undergoing *exercise*, are quite different; during the latter period, double the air is inhaled, and thus double the changes are effected.

Dr. Edward Smith has shown the comparative *effect of exercise on the amount of inspired air*, thus:—

Lying position	...	...	...	...	...	1.00
Sitting position	...	...	...	...	...	1.18
Singing	...	...	...	...	...	1.26
Standing	...	...	...	...	...	1.38
Walking one mile per hour	...	...	...	...	...	1.90
„ two miles	„	...	...	...	...	2.76
„ three „	„	...	...	...	...	3.23
„ „ „	„	...	...	...	...	3.50
„ „ „	„	...	...	...	...	3.84
Riding and Trotting	...	...	...	...	...	4.05
Swimming	...	...	...	...	...	4.33
Walking three miles per hour, and carrying 118 lbs.	...	...	...	...	...	4.75
„ four „	...	...	...	...	...	5.00
Treadmill	...	...	...	...	...	5.50
Walking six miles per hour	...	...	...	...	...	7.00

Parkes, expressing these results in another way, has shown that under ordinary circumstances a man breathes 480 cubic inches per minute; while walking four miles per hour he draws in $480 \times 5 = 2400$ cubic inches per minute; and, while walking six miles per hour, he inhales $480 \times 7 = 3360$ cubic inches per minute.

During exercise, too, the secretion of the skin is increased; and the muscles become hard and strong. There is also greater appetite, especially for meat and fat. The brain is more eager for active mental exercise; and exercise tends to diminish the erotic desires in the young, and is on this account also of inestimable value.

Supposed
Ill Effects
of School
Games.

But there is always more or less of a popular outcry against games at school. Even where the sentiment is

not apparent, it exists as an under-current, and causes much trouble to school authorities. I trust that those who read this book will cease to regard school games as a waste of time, and will realize their importance in securing the well-being of the individual and the welfare of the schools themselves.

The attitude taken up by many *parents* with reference to games at school is simply intolerable, and if their boys become vicious, the management and masters are blamed, while it is this attitude of the parents which is frequently the sole cause.

When the question of *school games* is under discussion, the parent frequently urges the objection that the boy is too delicate to take part. But when the same boy is examined for "*Life Assurance*," a marvellous "bill of health" is presented, with the absence of every hereditary taint.

In our well-to-do private and public boarding-schools for boys the claims of school games are, to a large extent, recognized and enforced, but, to my mind, not sufficiently so, for there are still many of the younger boys for whom games are not arranged, or for whom there is not room for daily play, and who are consequently too often allowed to excuse themselves from games altogether.

I am not surprised at small boys shuffling out of games where they have to take part with boys much older and bigger than themselves: for example, what can a small boy do in a game of football, except spoil the game and get unnecessarily knocked about, where half the players are twice his size and weight; and how can a small boy enjoy, or even play at, cricket, where the bowler is practically a grown man, who bowls swiftly, and the batsman hits with the force attained by skill?

Boys should
be sized for
Games.

It is requisite to separate these small players from the big ones—to size them, in fact—if they are to play with enjoyment, with credit, and without risk. It must also be remembered that if big boys are to excel in games, more attention in this respect must be devoted to the little boys when they first enter school. No boy can excel in games if they are not organized and enforced until he becomes a big boy; it is then too late, and yet this is too often the rule. I would, therefore, urge that it is the games of the small boys which should be most carefully arranged by the school authorities, for the moment they have mastered the drudgery and begin to excel, they are keen to play; whereas, if they are allowed to shirk games during their early school days, they will never take the trouble to surmount the drudgery and learn the game, and in this way loafers are bred.

In order to arrange adequately this sizing of boys for games, it is imperative that they should join in them as members of the *school*, rather than as members of a *house*; and this would tend to generate, what is so much to be desired, a wholesome *school feeling*, which in many schools is so manifestly deficient.

Loafers. I regret to say that my profession is accountable for the loafing of a goodly number of boys who are, without sufficient reason, forbidden to play. Parents are able to find too many doctors ready to acquiesce in their wishes, the doctors little realizing the vast amount of harm thus entailed upon the individual boy, and the extent to which they afflict the school to which these unfortunate specimens of English boyhood are sent. Moreover, this course is wholly unnecessary, for, by a little tact on the part of the doctor, the mother's prejudice could be overcome to the infinite gain of her son.

If boys are to be happy at school, they must play as well as work. It is necessary for their health, their growth, their characters, and the well-being of the school. It may be taken for granted that a loafer is an undesirable individual; bad himself, he corrupts others, for no boy is satisfied with being vicious alone. I would, therefore, suggest for the earnest consideration of school authorities the advisability of handling this question firmly but considerately, and insist:—

1. That, as a general rule, no boy shall be admitted into a public school who cannot take his part in the school games, as such boys are unsuited for school life.

2. That no certificate of exemption from games will be accepted by the school authorities except that of their own medical adviser, who knows the capacity of boys, and the nature of the games in which they are expected to participate. The parents, of course, should have the right to claim a consultation between their own and the school medical adviser.

3. That for the few boys who should not, for medical or surgical reasons, be permitted to join in games, well organized exercise should be arranged, as I shall presently describe.

4. That in the event of school authorities still consenting to admit all comers, those who do not join in the games should be handed over to the drill-sergeant for necessary daily exercise. The drill-sergeant should be the *bête noire* of every boy who is lazy at work or play. If there is one remedy which more than another would exterminate the loafer from schools, it is the daily routine carried out by the drill-sergeant. If this plan be objected to, I think the loafers should be sent out for a walk, two and two, with some attendant.

Why parents desire to send a boy to a public school,

and then, by their own whim and the aid of their doctor, forbid him to take part in what is one of the main virtues of public-school life, I cannot understand. The proper place for the education of such a boy is "The Seminary for Young Gentlemen." These boys are the curse of schools; and I grieve to say they are foisted upon schools too often by the aid of my professional brethren, who little know the evil that their too easily obtained certificate inflicts, not only on the boy for life, but also on his unfortunate school-fellows.

The advantages of School Games.

It should be borne in mind that boys' games are not only essential for the healthy action of mind and body, but also for the development of character. Observe the young boy who is keen in games, and compare his physical condition with that of him who does not take adequate exercise. Notice his healthy complexion, good wind, the elastic gait, splendid muscles, increased stature, fine physique, and sure development into vigorous manhood.

But this is only one side of the picture, for the results are far wider. Consider how boys' games tend to develop a well-balanced mind and character; how they instil into his nature, as nothing else can, glowing spirits, from the robustness of his health; quick response to calls of duty, instead of lethargic habits; good temper, often under trying circumstances; love of justice and fair-play which lasts with life; self-reliance; endurance; confidence in comrades; desire to excel, which ultimately becomes a noble ambition; quick judgment; aptness to act with others for the good of all, and not from selfishness; courage under difficulties; self-control; and last, but not least, the check on morbid desires and sensations, by the expenditure of superfluous energy, which ensures purity of life. In short, these games produce true

manliness of character, with a just ambition to excel in every phase of the battle of life.

It seems, then, scarcely to be believed that parents are to be found who are so unwise as to seek by their own whim to prevent their sons attaining these features of school life, being content with the mere rudiments of languages, mathematics, and science, and casting aside as worthless the development of the body and the character. Fortunately, these parents are few, but these few should not be permitted to affect prejudicially the school life of others simply to please themselves.

Our great schools render far more service in the education they afford than this: for they are capable of influencing for good or bad the whole character of a boy by means of the comradeship of his school-fellows and the salutary influence of his masters in out-of-school hours. Whether this influence shall be good or bad depends largely upon school games. He is wanting in discretion who will attempt to conduct a school of several hundred highly-fed, well-bred boys, at the time of life when their animal instinct is strongest, without insisting that they shall one and all take vigorous daily exercise.

One of the reasons why some parents object to their sons joining in school games is the "funk" of the boy himself, which every parent should strive to eradicate by compelling participation in games. Parents' objections to School Games.

Another objection against school games is, that so many accidents attend them: this is really incorrect. Boys are always naturally more or less subject to accidents. But, quite as many, if not more, accidents arise from "sky-larking" and by-play, than from really well-organized games. The retort will be, Will you venture to assert that there are not numerous, and even severe accidents, Accidents at Games.

resulting from football? If nearly twenty-three years' experience at the very birthplace of this much-abused game, played three and four times every week in winter—and very warm games sometimes, owing to the rivalry between *houses* for the glory of being “cock house”—counts for anything, it ought to make parents and doctors consider the matter more thoughtfully. I have never yet had one serious accident from football—no accident more severe than I have had from cricket, house runs, steeplechases, swimming bath, gymnasium, and, above all, by-play. If the game were always played by *boys* the outcry against football must cease. I am not now upholding it as a *man's* game; it is here that the severe accidents arise. I will even go further, and say that, *counting the number playing* at football at any one time, the percentage of accidents (at *schools*, I mean) would be little, if any, higher than those occurring during any other game with an *equal* number playing at the time, or during “boshing” and “scrummaging” amongst a similar number of boys.

It must be borne in mind that accidents will occur whenever boys are congregated together, and even when they are alone.

Sickness
arising from
Games.

Then, again, “*cold-catching*” is the cause of another outcry against boys' games: true, but why?

1. It arises largely from the unsuitability of the clothing for games, which should be remedied without delay.

2. It results from not “*dressing*” for all games. The remedy is always to “dress” for games.

3. It is produced by changing into insufficient and inappropriate clothing too long a time before the game commences; and by standing about after playing, while perspiring freely. The remedies are, not to “change” until the game is about to commence, and to have a warm

dry coat, or "sweater," always ready to put on as soon as the game is finished; or, to go home at once, have a bath, and change everything, including socks.

4. But the greatest sufferers in this respect are the non-players or spectators, who stand in the rain, or in a cold wind, or on wet grass, watching football, athletics, or a rowing match; or who lie down on the damp grass to watch a cricket match. The remedy for this is, well-organized games for ALL, and no spectators.

But while I have spoken thus strongly on the subject of all boys, with few exceptions, joining in school games, I hold equally forcibly that every child on entrance to a public school should be as carefully and as thoroughly examined as though for life assurance. He is mentally examined to ascertain what he is capable of in work: and I maintain that he should be equally carefully examined physically, so that his physical education may be thoughtfully organized and regulated, and, I would further add, enforced, since his physical education is of equal importance to his mental education.

Physical
Examination
of all Boys
on entrance
to School.

I fully recognize that, if this be not carefully carried out, children may suffer in consequence; though I am bound to add that, in my experience, the cases where harm has resulted from even indiscriminate, unregulated, and unwise exercise are exceedingly rare; I would insist, however, that such cases should never be permitted to occur.

Where harm has resulted, it has arisen in almost all cases, not in the delicate, but in the strong, from imprudent and severe exercise being suddenly taken after a period of comparative idleness, and without prior training, in forgetfulness that all exercise should be gradual in its increase. When not in constant daily use, the muscles become flabby and wanting in vigour, the

heart included. The lungs also lose their elasticity. If overtried suddenly, something must "give" somewhere; unused muscles cannot bear sudden spurts. Occasionally I have seen the deleterious effects of exercise being undertaken by those who were physically unfit; were all boys medically examined on their entrance to school, this result could not have happened.

It is certain that if this medical examination were efficiently carried out, there would be found a certain number of boys—few, I admit—who should not be permitted to join in all the school games as at present constituted. For instance, boys with a phthisical history; those who have recently had a severe or prolonged illness; those who have grown beyond their strength; those with a physical defect or deformity; and, last, but not least, those who have mitral disease, and who require care. Without this care, while the heart is growing, its cavities are certain to dilate to excess, with all its attendant discomforts and dangers, instead of being permitted to develop that compensating hypertrophy of its walls which is essential in valvular disease. On the other hand, I know of a case of well-marked mitral disease in a boy who would not be restrained in his exercise, and who was one of the greatest athletes, winning at school and at the university a large number of the highest prizes.

Suitable
Exercise
should be
arranged for
delicate
Boys.

For the few boys, therefore, who would join in school games if they could, but who, from inherent delicacy, disease, or deformity, should not be permitted, a systematic school organization of suitable exercise should be arranged, such as gardening, carpentry, gymnastic exercises, drilling, music, art, drawing, and field excursions in botany, natural history, and geology. There never can be any excuse for lounging and idleness. These boys need their

exercise as much as—nay, more than—the strongest and most robust. If such a scheme were more effectively carried out they would have a better chance of developing into a strong and healthy manhood. They should not be excused exercise appropriate to their capacity. I would therefore urge the following points in connection with the limitations of exercise:—

1. The careful physical examination of all children when they first enter school. In this way only can the healthy be safely compelled to play.

2. The proper apportionment of exercise consequent on this examination, in order that the physically weak, diseased, or deformed may only take that exercise which is suitable. In this way only should the unfit be excused from the ordinary school games.

3. The medical control of all severe exercise, so that the boy who is physically fit to undertake the exercise shall not be permitted to do so *without prior and suitable training* for his prolonged exertion. It is these cases where, in my experience, the greatest harm results, and opprobrium is produced. Boys who think that because they have won a race by rowing or running in one season they can do the same in the next without fresh training are sure to overstrain and injure themselves.

I do not uphold the general adoption of the various "systems"—such as the Swedish, for example—at present in vogue for the physical education of the young, however excellent they may be in themselves, for they necessarily savour too much of the nature of a "set lesson," and boys already, and girls still more so, have more than sufficient of these prescribed tasks. For special cases, under exceptional circumstances, they are of great value, where ordinary boys' games are unavailable or unsuitable, as in the case of very delicate or deformed boys.

Games
versus
Drill.

But for ordinary exercise, it would be as reasonable to expect *adults* to take exercise and recreation in the form of one of the "systems." Let adults still indulge in exercise by hunting, shooting, boating, and mountaineering; and let boys continue to play their games of football, cricket, and boating. They all afford a mental rest and recreation, whereas the "systems" partake too much of a school task, and do not provide the required mental change and rest.

Inasmuch, therefore, as exercise is imperative for the young, masters should see that games are properly organized by the boys themselves, subject always to the approval of the school authorities, by whom they should also be enforced.

It must, as I have said, be granted as an axiom that regular adequate exercise is absolutely necessary to produce the highest state of vitality of the body, and the brain (being part of the body) participates in the increased power. Exercise, therefore, is the necessary handmaid in education.

OVER-EXERCISE.

The clamour often popularly raised against exercise should be limited to *over-exercise*, or to ordinary exercise imprudently taken. It is excess of exercise which is deleterious to growing boys: it wears out and stunts, and is apt to entail permanent damage to the body; while exercise in proper measure produces health and strength.

Exercise should be gradual in its increase; the highest exercise being attained in the same way as a man climbs a ladder, step by step, or as a trainer "trains" his horse.

If we do not wish to hear of the "evils" of rowing, of

running, of football, and of the "lawn-tennis arm and leg," the muscles necessary to the exercise must be trained by degrees. All muscles may be educated to any strain within reason; but unused muscles are unable to bear sudden efforts. I shall more fully describe the symptoms of over-exercise under the head of *running*.

Severe brain work precludes much bodily labour; and severe bodily labour prevents great mental strain: both cannot be borne together, and it is intemperate to try; but the best amount of work is done with a reasonable proportion of each.

It must, therefore, be remembered that if these English "school games"—the glory of our country—are to be enjoyed without injury, the exercise must be regular, and if it has been omitted, as at the various seasons, it must be resumed by degrees; no boy must imagine that he can at once take up the thread where he dropped it months before. Most accidents, in consequence of a neglect of this caution, happen at the beginning of each season.

Syncope, or fainting, in boys is usually attributed to over-exercise; but my experience has shown that, while it may in some cases be occasioned by the physiological condition of the heart and vascular system at puberty,* or be due to a temporarily dilated heart† resulting from active physical exertion in an unfit state of body, it is nearly always toxæmic—the blood being poisoned by the imperfect action of the excreting organs.

COMPULSORY GAMES.

We now come naturally to discuss the first law for all schools, especially public schools, where the boys are

* *Lancet*, May, 1886.

† *British Medical Journal*, March, 1873.

older, and more liberty exists—that school games, which are the physical education of the boy, should be *compulsory*, so that he may be compelled to join in some games, while choice of other occupation during his remaining leisure hours should be left to himself.

It is said that compulsory games are bad because they prevent a boy following his own bent. It would be just as reasonable to assert that a boy should follow only his own bent in *mental education*, which would mean in many cases simply “novel” reading. The same argument would apply to a boy’s eating and drinking: the assertion that he should not be required to eat meat and potatoes and drink milk, but should be permitted to follow his inclination, would simply mean living upon the pastry-cook’s delicacies. And this is unfortunately the training in too many homes.

Compulsory games are a necessity in physical education; and even when they are systematically carried out, and faithfully played, there remains still ample time for every boy to fulfil the devices and desires of his own heart in his recreation.

The boy is an active animal, and unless he be kept employed at an innocent and healthy occupation during play-time, which will allow the expenditure of his superfluous spirits and strength, he will not be idle—he is too restless for that—but will occupy himself with something that is probably not innocent or healthy, and will become neither a credit to himself nor his school, but an evil-doer, and a teacher and example of evil-doing to others.

The importance of the question of school games is not sufficiently recognized by parents and teachers: I doubt very much whether one-third of the boys in all our schools would be found taking part in them at any given time. Not only should parents and masters see that boys join in the school games; but to enable them to do so.

schools must provide space in which all *can* play, and few schools, unfortunately, have ever arranged for this need. It is so frequently forgotten that every idle hour to the boy is a "bore;" and that every idle boy tends to become a vicious boy, and, morally and physically, an unhealthy one.

The bane of every school is the "idle boy"—the boy who won't play: he is a constant worry to his master, being never out of mischief; a source of misery to himself, and very often a bully, having nothing better to do. Until parents recognize this fact the constant outcry against compulsory games will continue; whereas, this compulsion is one of the chief sources of a healthy tone in schools, especially public schools. When this rule is abolished our schools will become largely a source of evil. Moreover, school games always furnish a topic for healthy conversation, which is an inestimable boon.

If all boys were encouraged to be manly, energetic, and enthusiastic at their games, they would be trained to become healthy and ingenuous throughout their whole school life; failing this course, there will arise an unmanly precocity in self-indulgence, betting, smoking, and drinking; boys will naturally develop into premature "men of the world," and schools become tainted with an atmosphere of "society," which no master can purify.

What can be better than the healthy rivalry of sides at games, and of various houses, or schools, pitted one against another, every boy joining in the contest? The healthy and innocent ambition which makes one boy strive to be at the head of his form, and to excel at his work, makes the same boy, or another, seek to be at the head of one or of all his sports, whether football, cricket, or boating.

Some excel in work, others in play; both should join

in both, and be made to play as well as work. What is distasteful in work is not excused to the boy: it is considered part of his education to do the work that is placed before him. The same rule should exist in his physical education, and then what was distasteful originally may become a pleasure when it has been learnt and practised well.

The boy who does not join in games, but swaggers and lounges about, should, after failing to *make* him take part in them, be got rid of, before he has an opportunity of corrupting others through his idleness and the evil it engenders: the only ground on which a boy should be exempted from joining in the games should be physical incapacity or illness.

It is a fact beyond dispute, that a boy who is forbidden by parents to join in school games, and who, at the same time, as is usually the case, is supplied with plenty of pocket-money, must be, in a short space of time, inevitably ruined in character, and become a source of detriment to the school.

But many will ask, Is there no way by which this "loafer" can be cured, and yet retained at school, without disadvantage to himself or his school-fellows? Yes, I believe there is, and that he could be absolutely cured of his bad habit. To effect this, a rule should be put in force, that any boy who does not regularly join in the school games, whether from his own or his parents' desire, should, as I have already urged, be handed over to the drill-sergeant for two hours' exercise a day. By this means the loafer would obtain the amount of outdoor exercise which is necessary for health. His round back, flat chest, and slouching gait with hands in his trousers' pockets, would be rectified, and the loafer would henceforth be known by his military bearing, to his great gain. The loafer's pocket-money should also be

used to pay the drill-sergeant for his trouble; he would then have less money to spend at the tuck-shops, and Disraeli's description in "Coningsby" of the boy with "the pallid countenance, the lack-lustre eye, the hoarse voice clogged with accumulated phlegm, indicated too surely the irreclaimable and hopeless votary of lollypop, the opium-eater of school-boys," would soon have no survivor.

Occupations for play-time, again, should be provided for all weathers, so that the wet, as well as the fine, day may supply its physical education, play, and pleasure. What a vast amount of mischief wet half-holidays at school are accountable for! School authorities might, more completely than they do, keep their pupils at work on the wet regular half-holidays, and restore these abstracted half-holidays on fine days. This course would, no doubt, entail much inconvenience, but this would be more than counterbalanced by its beneficial effect in preventing evil—such as smoking, drinking, and billiards.

The burden of my argument relative to compulsory games is, that it is the duty of all school authorities to provide a physical education—and in using the word physical education I desire it to be understood, that I mean not exercise only, but an exercise that involves *recreation*—as carefully arranged and systematized, and as impartially applied to all, as is moral and intellectual training; and further, that this physical training should be in the hands of the authorities, and not solely in those of the boys themselves.

Moreover, physical education requires as much forethought, method, and application as mental; whereas, at present, too much routine is involved in both.

At private schools, where the younger boys are educated as a rule, it should be the duty of one of the

masters to play with the boys, and he should himself see that the head of each *eleven*, or *fifteen*, arranges that all his team should play; at present the senior boys in the school usually arrange their own game, and all the rest are idle for want of some one to set them going. This would be obviated if a master always started them in the game; and, still better, if he played with them.

CLOTHING FOR GAMES.

In many of our oldest and largest public schools regulations exist prescribing the clothing that should be worn by the boys both during school and play hours. With reference to the clothing for school hours I have nothing to add beyond my previous statement as to the proper provision for the boy on entering school, except the remark that no boys should be allowed pockets in their trousers, and that all boys in a school should, as far as possible, be dressed alike—a simple school uniform would undoubtedly be the best means of evicting the competition in dress and high collars, which form one of the characteristics of a “loafer.” At all events, parents should always strive that their sons should on no account be *peculiar* in their outer or under garments. Nor should they allow their sons to be *shabby*, and thus be subject to teasing, if not bullying, with the result first of making others look down upon them, and then of making the victims look down upon themselves.

I have, however, much to say upon the proper clothing for games, since this is a main source of health or ill-health, according as it is suitable or unsuitable. Boys should have special clothing for all their games entailing exertion, not only that they may save their cloth clothes, but also that they may be clothed appropriately

for playing, and may then have their dry clothing to put on after the exertion; the boy who is too lazy to change, as so many are, should be punished, for serious illness and even death are sometimes occasioned through a boy playing in his ordinary clothes—say, at racquets—perspiring freely, and then, without a change of garments, sitting in school, standing about, watching others play, or lying on the grass.

The clothing for games requiring exertion, in summer and winter alike, should be flannel, and flannel only, and white flannel is the most suitable: it is the best non-conductor, and the greatest absorber of moisture. Flannel clothing should be compulsory for all boys. Unfortunately, many injurious rules or customs in respect of clothing—many of them originating before medical knowledge had deigned to concern itself with such commonplace subjects—still exist in some of our older schools; for example, what can be more reprehensible, in relation to health, than the rule that boys should in winter wear thin cotton jerseys, for football, or running, and in summer appear in white linen, or cotton, shirts at cricket or boating, instead of flannel clothing?

These special flannel garments should be changed immediately after exercise, in order to get rid of the moisture they contain. A neglect of this precaution has cost many a life. A feeling of chilliness after exertion means that the body is cooling too rapidly, and that an extra coat is necessary, or the boy should move about, so as to check its rapidity. The woollen garments should be *dried*, by some thoroughly responsible person, after being worn, and washed at least once a week.

The decision of the proper clothing for games is sometimes left improperly in the hands of boys themselves, who make the most unreasonable rules against the wearing of flannel garments for all exercise. Is it right for

elder boys to regulate conditions which affect the health of their school-fellows? Are they sufficiently conversant with the laws of health to be empowered with such control? The head-master and the house-masters should obviously, under the guidance of the medical adviser, retain this matter in their own hands.

DRESSING-ROOMS.

In order that boys may be induced to "dress" for games, and undress immediately afterwards, dressing-rooms should be handily placed for the purpose. Here boys should have "bath" accommodation, so that a cold bath may be at once available; and there should be hooks on which they can hang their clothes, and seats on which they can sit to change them. The plan of changing clothes, which are generally wet and muddy in winter, in the dormitories or cubicles, should never be allowed; by this practice not only do the floors become covered with mud and ordure, but the boards get saturated with wet, and the rooms are consequently unfit to sleep in at night. The plan is dirty in the extreme, and has no redeeming feature.

TRAINING.

Boys so often undergo *training* for boating and other athletic sports, and every now and then make themselves so ill, that this is my reason for broaching the subject in this treatise, although at first sight it may seem somewhat irrelevant: I am anxious, however, to omit no condition in a boy's school life which tends to improve or impair his health.

And first, it should be an invariable rule that only strong hearty boys should undergo "training." No

delicate boy, not even a sound boy who comes from delicate parentage, should be so allowed: or the delicacy, which might have remained dormant, or missed the individual altogether, may become developed, and thus remove all chance of good health.

The purpose of training is to place a boy in such a condition as to enable him to perform the hardest physical work rapidly, or for a prolonged period; it is, in fact, to produce the highest possible state of health for hard physical work, though sometimes at the expense of good mental work. The essence of training is that the heart and lungs should become accustomed to sustained exertion, and this is effected by degrees. The muscles by graduated practice become hard and strong for their work, and by exertion and perspiration the boy gradually loses his fat, and by proper diet prevents a fresh deposit. Boys, generally, know so little about the conditions required in training for active and prolonged exercise, such as athletics and boating, that they often succeed in making themselves seriously unwell, and are compelled to "give in" before the day of the race, which a little proper guidance would have enabled them to win with honour. The chief points to be regarded are:—

1. *To get rid of superfluous fat.*—To effect this, steady and prolonged exertion should be undertaken. Walking exercise is good to begin with, and more active exertion should be taken as the system gets accustomed to it and eager for it. This exercise should commence quite twenty-eight days before the period of the intended exertion, but it should be performed only every other day at first, the intervening day being devoted not to absolute rest, but to reduced exertion. There are some who assert that boys should never go into training at all: from this I most emphatically dissent. For it is a fact that the boys who "train" are the boys who win:

this reason alone is considerable. But, I would add, as a stronger reason in favour of training, that it is entirely wrong for boys to join in races, whether "athletics" or "boat races," without careful prior training. Yet boys attempt very severe exertion, in one form or another, without any training at all, leading frequently inactive lives for days and weeks beforehand: these are the boys who "come to grief," and give all English sports a bad name with those who are ignorant of the causes.

2. *To prevent fresh deposit of fat.*—Growing boys not only require, but cannot healthily exist without, a diet that contains plenty of carbonaceous or fat-forming material, especially sugar, and of starch which is converted into sugar; fat itself, too, is equally necessary, though in smaller quantities. If an effort be made to dispense with these constituents for a lengthened period the health suffers, and, as a rule, this improper dieting is the cause of the harmful effects of a training *régime*.

It is often stated that *boys* should never vary their diet in training for severe exercise. In opposition I assert that the boys who diet themselves in training are the "winners." And I have received the strongest testimony from boys themselves—those who have gained the highest rewards—that a training diet, with careful avoidance of the "tuck-shop," is essential to success. Moreover, when a boy, who should have succeeded, has failed, it is one of the commonest observations among them, that "he didn't take the trouble to train." Such evidence refutes all theories.

But for *men* undergoing training a much longer time for dieting may be required and endured without risk, as the changes in the system of the adult are less rapid, and the exertion demanded of them may be more severe, as their growth is accomplished.

The *diet* required for boys in training, in order to

prevent the fresh deposit of fat, is appended; but, I would again repeat, fourteen days of it are sufficient:—

THE BOY MAY EAT

Mutton.	Haricots.
Beef.	Spinach.
Veal.	Watercress.
Lamb.	Mustard and Cress
Tongue.	Lettuce.
Kidney.	Asparagus.
Sweetbread.	Celery.
Soups, unthickened.	Radishes.
Beef Tea and Broths.	French Beans.
Poultry.	Green Peas.
Game.	Brussels Sprouts.
Venison.	Cabbage.
Potted Meats.	Cauliflower.
Fish, except Salmon and Eels.	Onion.
Custard.	Broccoli.
Cheese.	Seakale.
Eggs.	Jellies, flavoured but not
Bread, especially Crust, or	sweetened.
Brown Bread, or Toast.	Fresh Fruit in moderation, and
Oatmeal.	without Sugar or Cream.
Lentils.	Pickles.

THE BOY MAY DRINK

Tea.	Light Bitter Beer, but better
Coffee.	without any alcohol at all.
Cocoa, from Nibs.	Apollinaris Water.
Milk, in moderation, especially	Soda Water.
Buttermilk and Skim-milk.	Seltzer Water.

THE BOY MAY NOT EAT

Duck.	Arrowroot.
Goose.	Sago.
Fat Bacon and Ham.	Tapioca.
Fat of Meat.	Macaroni.
Butter.	Vermicelli.
Cream.	Semolina.
Sugar.	Pastry.
Potatoes.	Puddings, all kinds.
Carrots.	Sweet Cakes.
Parsnips.	Condiments, all except Salt.
Turnips.	Marmalade.
Beetroot.	Jam.
Artichokes, Jerusalem.	Sweets.
Rice.	

THE BOY MAY NOT DRINK

Cream.

Porter and Stout.

Sweet Ales.

Beer in any large quantity; and
beer should never be taken by
boys without food.

This diet should not be too rigidly followed. It should not be adopted at all by boys who are naturally thin. The scheme is furnished to show what diet generates fat and prevents good "wind;" and what helps to absorb fat, and to give the greatest strength and the most enduring "wind." But, as I have already said, those who are growing must not be deprived of fat, sugar, and starch for more than a few days consecutively.

In training, to obtain good "wind," it is of the highest importance to avoid all possibility of indigestion, for nothing prevents it more. Food, therefore, should be eaten slowly, and masticated thoroughly. No food or drink should be taken between meals. Sleep should begin by 10 p.m., and early rising is imperative.

There is a most fallacious theory amongst all trainers, be they boys, men, or trainers of horses, that, whilst undergoing training, the smallest quantity of fluid should be allowed; and hence those in training often suffer from actual thirst. It is an undoubted fact, that most people take daily more fluid than is requisite to satisfy thirst; whereas this simple satisfaction is all that the system needs for the healthy performance of its functions.

It should be a rule with every one, in order that the highest condition of health may be attained, to take as little fluid as possible. From two to three pints daily is the amount generally required by an ordinary healthy adult, except in hot weather and under great exertion causing free sweating.

Many will say that they are always so thirsty that they must drink freely to live at all. It will be seen that this is not true: it is a question of habit pure and

simple. It would be just as true for the "drayman" to say that he needs five gallons of beer a day; whereas, the truth is, he has simply indulged in this bad habit until his system, with its wonted adaptability, has learnt to accommodate itself to the inconvenience by degrees.

The habit of drinking more fluid than is required to supply the actual wants of the system gives more work to all the organs to perform. It is, moreover, a frequent source of indigestion; the stomach being required to absorb the excess of fluid before the gastric juice is able to act effectively upon the food which it contains.

The right principle to adopt in training is:—that water should be freely allowed, but in small quantities at a time: always sufficient to satisfy thirst, but the trainer should never allow himself to become actually thirsty. As he perspires an ounce of fluid from his body, another ounce of water should at once be supplied in its place. Dry tissues, and unnaturally thickened thirsty blood, are incapable of the highest exercise of their functions.

On no account should he suffer thirst for minutes or hours, and then, when the exercise is over, take, as many do, an excessive quantity of fluid, which only renders him uncomfortable, takes away his appetite, and causes indigestion and loss of sleep.

It is always wiser to eat before drinking.

3. *The time of exercise for training* should certainly not begin until two hours after a meal; neither should the adolescent continue more than four hours without food, otherwise he will be faint before the exertion is finished, and the exercise will be blamed instead of his own imprudence.

4. *The period of exercise for training* should be carefully regulated. At first, two hours' ordinary walking exercise should be taken every day for a week; then two

hours' very fast walking for several days, and, gradually increasing to running exercise, a short distance rapidly followed by a rest; thus finally accustoming the muscles, heart, and lungs to the more severe exertion for an hour.

5. In this way *the circulation and respiration* become used to rapid exertion, and, instead of being over-done and liable to injury, these functions are made more vigorous and strong. Parkes says:—"The trainer establishes a concordant action between the heart and blood-vessels, so that the strong action of the heart during exercise is met by a more perfect dilatation of the vessels, and there is no blockage of the flow of blood; in the lungs, the blood not only passes more freely, but the amount of oxygen is increased; and the gradual improvement in breathing power is well seen when horses are watched during training."

6. *Under-training*.—I cannot speak too strongly against boys attempting, as is frequently done, very great and prolonged exertion—for instance, hard boating or a run of many miles—without any preliminary training: it is then that great mischief is likely to occur, especially to the heart and lungs; and under-training, I think, is worse than

7. *Over-training*, which means *over-exercise*, either too quick or too fatiguing; or on account of inappropriate or prolonged under-dieting.

8. *Muscular fatigue*.—Those who have much mental work to do—*e.g.*, for prizes, or for position in school—and yet undergo considerable bodily exertion, often lose some hours of mental labour, owing to subsequent muscular weariness; and are thus incapacitated from sustaining the combined exertion of body and mind. This feeling of tired muscles can be avoided by the use of the remedy used by the Peruvians on their hard marches—the *cuca* plant, which removes marvellously all sense of muscular

fatigue. It is chewed by the Peruvians; but is now made into a tincture, half an ounce of which, containing sixty grains, taken during or after the exercise; will, when *occasionally* and *appropriately* used, under the guidance of the medical officer or the house-master, produce the desired effect, without any drawback.

9. *A great fault in training* among boys is to allow the day before the great event to be one of idleness; whereas, without being made one of fatigue, it should be restricted to what is called a "breather." And the day before that should be one of exertion almost, if not quite, as severe as the exertion required on the day of trial.

10. *The daily cold bath* is simply imperative in training.

By some athletes the bath in any form is deprecated, in the belief that it produces languor and disinclination for exertion: it is only the improper use of the bath which has this effect.

It is when the cold bath is taken in the form of the "swimming bath" in summer, that this prolonged immersion—from fifteen to sixty minutes—occurs. This happens chiefly amongst boys and young men, and the beneficial effect of the bath is thereby converted into a harmful one. For the blood is driven from the skin, which contains about two thousand five hundred superficial square inches, and being kept from it for so long a time, its blood-vessels become contracted, owing to the paralysis of the nerves from the cold, and are unable to recover themselves with a rebound when the cold is removed. The blood, which should have occupied this large surface, being driven into the vessels of the internal organs and retained there, over-dilates them, producing congestion, and the various harmful conditions of congestion of the brain ensue with persistent headache, congestion of liver and jaundice, and congested kidneys

with albuminuria. There also arises marked nervous depression, which may remain for days, expressed not only by inertness, but by a torpor of the whole system, mental and physical.

Those who remain too long in the water are undoubtedly liable to experience these sensations; but those who remain only a short time are always invigorated—the bath being really a most important aid to the athlete, engendering muscular vigour, increased nervous power, and preserving health.

By attention to these matters, boys will get through their sports and boat-races more easily, without being made uncomfortable, and without interference with their work and health; training so conducted will, indeed, make them vigorous and manly.

THE PLAYGROUND.

It is as important in schools, for both sexes, to provide plenty of space for play, as to have sufficient cubic area in which to live, work, and sleep. In some schools there is already room for play; in many, even of our best schools, the area is quite inadequate. There are few schools in which more than a third of the boys will be found at play on any given half-holiday—except on days when football and paper-chases are compulsory. What has become of the others? How many masters know what they are doing? and, what is worse, no trouble, generally, is taken to ascertain the fact. Yet play-time is one of the most important elements in school life. In most of our great schools the course pursued is absolutely indefensible. No care whatever is generally taken to see that a boy is legitimately occupied during play-time, but a severe punishment is awarded if he be *caught* doing wrong. Of the two-thirds who are not seen playing, many

are well employed, in a variety of ways, amusing and instructing themselves; while others are occupied in every mischief a boy can think of—including smoking, drinking, playing billiards, and strutting about the streets.

The causes producing this unfortunate result are:—

1. That there is not room for all the boys to play at the same time, even if they wished.

2. That “loafing” is permitted, and not strenuously discountenanced as an enormous evil in every school.

3. That parents obstruct legitimate games, and thus encourage—indirectly it may be—the “loafer,” with his extended power of doing evil himself and influencing others.

No genuine reform will be accomplished until it is realized that it is the serious duty of both parents and masters to co-operate in *preventing* evil occurring during unoccupied hours, rather than attempting to eradicate or *cure* it after it has been committed. It is the paramount duty of the authorities in our great schools—in lesser schools it is already fairly-well recognized—to look after boys during out-of-school hours, as carefully as to educate them in school hours.

I hear already the outcry, from many of our great schools, “Where, then, is their liberty?” But who will venture to gainsay that the liberty of many of our schools should, as at present exercised, rather be named *licence*?

In proof of this I need only appeal to each head-master to furnish a list of the boys he has discovered doing wrong during play-time, and has *silently dismissed* during his term of office—to omit altogether the consideration of those who remained *undetected*. It is still, I regret to say, insufficiently recognized, that it is the imperative duty of schoolmasters to make it “easy to do right, and difficult to do wrong,” in their government of the young.

It is an indisputable fact that when boys go wrong at

school the fault is frequently due to the defective physical conditions under which they are compelled to live, rather than the result of natural vice; the boys should often be more pitied than blamed. Temptation has been allowed too much opportunity before strength of character has had sufficient time to grow: during the development of character, help and guidance are essential. Sydney Smith wrote: "I have always said that the greatest object in education is to accustom the young man gradually to be his own master." Whereas, at present, he is left too much to himself, and becomes his own master long before the appropriate time of responsibility has arrived.

The urgent requirement, consequently, for a playground is, that space should be provided in which all boys *can* play, and means should be adopted to ensure this end.

The tendency, too, is gaining ground, of allowing a few skilled experts to play, while the rest look on. To watch a good game occasionally is beneficial to all; but it is becoming too common, and tends to the loss of vigorous recreation to the majority, and of providing successors capable of playing skilled games in after years.

The desire to "watch a good game" is most frequently an excuse for a taste of *dolce far niente*—a most pleasant sensation, I admit, but not the best for growing boys.

It is necessary, in planning a playground, that the ground should be level, for if there be inclines the tripping up is always dangerous. It should also be well drained, so as to avoid swampy patches, which are most unhealthy.

THE TIME FOR PLAY.

Every spare moment not already occupied by work, meals, or sleep, should be allotted to play.

There is one important point connected with this—that

no *very active* exertion should take place for at least an hour and a half after a full meal, such as dinner. And yet there are schools where long "runs" commence the moment dinner is swallowed.

The time allowed for play varies considerably in different schools.

In the private school arrangements, given in Table A, page 233, it will be seen that two hours are allotted every afternoon, besides odd moments, and a half-holiday every Saturday: this arrangement is excellent.

In Table B, page 234—which, with minor modifications, is the usual arrangement of work in most of our great schools—there is a half-holiday every other day, the intervening day being one of rather full work. This arrangement too is excellent, since it allows of hard work, with plenty of freedom between the hard days. In addition to these half-holidays several "saints' days" are observed in some schools, but it is time that these whole holidays were abolished, as they seriously and most unnecessarily interfere with work.

In Table C, page 235, I have shown an arrangement which is in practice in public day-schools; it practically gives very little daily recreation, but a whole holiday on Saturday. This means that boys at these schools are allowed almost no time for exercise during sunlight, for five days during the week, from November to March. This plan, again, does not provide sufficient rest for boys during the five working days.

In some schools, not only have the boys a half-holiday every other day, and a whole holiday every saint's day, but in the middle of the term an "*exeat*" is allowed, and boys are then permitted to go home for one to three days. In old times, when terms were half-yearly, this was perhaps a natural arrangement; but now that vacations at home occur three times in the year, involving four months'

absence in all, exeats are unnecessary and injurious to the boy and his school. They constitute a most serious interruption to his work; the school, too, is exposed to the possibility of infectious diseases being introduced in the middle of the term; the risk and anxiety in this respect at the beginning of each term is already more than sufficient to be endured. I trust that exeats may soon be abolished at every school, as being absolutely indefensible.

GAMES.

Having now discussed the importance of physical education, its periods, methods, and necessary appliances, during the years of adolescence, we are in a position to speak of the various ways in which physical education should be promoted. I would first insist, that stately walks, two and two, in town, for either boys or girls; and the employment of the Swedish, or Ling's system of gymnastics, and physical drill, so excellent in themselves, especially for the delicate, maimed, and deformed (but not required for boys whose muscles have had free play at games), are not the modes in which exercise and recreation for normally growing boys and girls should be secured. Even the gymnasium, with all its advantages, should never be permitted to take the place of games, but only to supplement them at odd moments; in winter, after dark, and on wet days.

The exercise of the young—if it is to be susceptible of the highest value—must be taken in the open air, in the form of games. It should be recreation, as well as exercise; not a set lesson in the hands of the gymnasium instructor, or the drill-sergeant.

In considering the question of exercise, it is important to remember that an excess of anything satiates and

sickens; change of work, and change of play, are as important as variety in diet. It would be as unreasonable to feed a boy always on plum-cake as it would be to keep him always playing at cricket or always learning Greek. While we are constituted as at present this variety must be provided.

Games should be varied according to age, constitution, and sex. The same game played too frequently not only satiates, but deforms. An infinite variety of exercise is essential for the perfect development of the body as a whole. All games and no work are equally deleterious.

The games and exercises suitable for boys comprise :— Games
suitable for
Boys.

Football.	Wrestling.
Cricket.	Fencing.
Running.	Boxing.
Brook-jumping.	Gymnastics.
High-jumping.	Physical Drill.
Skiping.	Cycling.
Rowing.	Rifle Corps.
Swimming.	Rifle Shooting.
Skating.	Camping out.
Racquets.	Workshops.
Fives.	Natural History excursions.
Lawn Tennis.	Gardening.
La Crosse.	Music.
Golf.	Art.
Hockey.	Drawing.
Base Ball.	

It is beyond my province to discuss the merits of each of these methods of exercise, but I cannot pass them all over in silence. Each boy has his taste for some games, and his aversion from others; within certain limits a boy should be able to exercise his choice in recreation. If exercise be insisted on, as it should be, manly boys at school will be produced, who will develop into *men* in the highest sense of the term. If each boy were to furnish an account of his exercise, it would facilitate its working.

Football. With respect to the much-abused and healthy game of football, the chief outcry, periodically raised, is against the game as played according to "Rugby rules."

That accidents do happen at football, and when played under "Rugby rules," is beyond question. But to whom do they usually happen? Almost invariably to grown men who have excelled in past years, but who have now lost their elasticity, are out of training and flabby, and have increased in weight and lost the old knack of playing. To these players the game may be injurious—that is to say, the good obtained may not counterbalance the risk incurred; though even of this I am not sure. But I trust the time is far distant when football, as a winter game, is to be removed from our schools, unless some equally active and exciting game is substituted.

The outcry against all games, whether football, rowing, riding, or tennis, for example, should not be levelled against the games themselves, but against those who are not in a fit condition to play at the particular moment.

The man who is unwise enough to think that, because he has been the best football player at school, he can always play hard, without previous and prolonged training, is sure to meet with accidents. He who, having once been in his university *eight*, assumes in subsequent years that he may, without fresh training, row hard in a "scratch" race with impunity, is certain to over-try his heart—with a popular clamour against boating, as the result. Those who incur the sprains of the rider and of the lawn tennis player are almost invariably those who ride hard and play hard at the beginning of the seasons, when they are out of training and condition.

I maintain, from nearly twenty-three years' experience, that football, as played at our schools, by young, elastic, light boys, highly trained, and always at it, is—where bear-play and the spleen of the bully are kept down by the

conscientious reporting, without fear or favour, to headquarters, of every infringement of legitimate play—a great gain to schools and attended very rarely by accidents, and those seldom of a serious nature. The way in which accidents most frequently happen when playing football at school is when boys play with men; and thus the “sides” are not of the same size and weight.

My experience does not enable me to recognize either the justice or prudence of parents in raising an outcry against football, as played at our schools. That it has its accidents, like, but not worse than, cricket, boating, jumping, the gymnasium, and every other boys’ game, no one will gainsay; but its benefit to boys far outweighs its evil effects, and all who know anything of it from experience, and not from hearsay, will admit this.

Private schools can organize their games to suit the capacity of the smaller boys; but the public schools, especially our great public schools (and this circumstance constitutes one of the great benefits of large schools), should not only provide football, paper-chases, cricket, and boating, but also racquets, fives, and lawn tennis. There should also be a gymnasium to develop the much-needed straight backs and round chests. Skipping, also, which prevents, and cures, if the skipping be performed on the toes, that most painful affection called flat-foot, should be added.

A *rifle corps* affords excellent training in exercise and skill as well as in discipline, and teaches boys early the difficult but important lesson of acting together under leaders; “camping out,” too, is beneficial in every way when the corps is officered, as it should be, by conscientious masters. I would also urge that the rifle corps should be extended at our schools throughout the country, and that nearly all boys at schools should pass through its ranks. All possible means for its encouragement

should be adopted, not only for the sake of the benefit derived from the drill, the esprit de corps, the rifle shooting, and the camping out, but also for the good of the nation; and engineering in all its branches might be added with advantage to mind and body.

The School Drum and Fife Band attached to the rifle corps also affords occupation and instruction to many boys, and furnishes an excellent training.

The formation of an *Ambulance Corps* would also interest and instruct other boys, and enable them to be expert and helpful in minor accidents. It would also early train them to show sympathy with suffering.

There should be added *workshops* to develop mechanical taste, which is of advantage to all and of great value to many, while they form a capital resource on wet days. In speaking of the education of a gentleman, John Locke, himself a physician, said:—"I would have him learn a *trade*—a manual trade." This would ensure the education of the *hands*, which, at present, is insufficiently regarded.

It might not be amiss, too, if a *billiard table* were provided, where play could be obtained on wet half-holidays. Many of the boys in our great schools have billiard tables at home where they have learnt to play, and enjoy the game. A wet day makes them long for a game, and consequently the public-house is apt to become an insuperable temptation. Why this excellent game can only be played in school-life at the public-house is not easy to understand!

I further suggest the useful and healthy *swimming bath*; a library and art museum; natural history and debating societies; music; drawing; bicycle excursions; and gardening, the last of which could generally be easily carried out and made most enjoyable, especially for the delicate boys. Thus occupation would be provided for

every boy of every conceivable taste, and in all weathers. I need scarcely add that it is most important that the gymnasium, racquet court, and workshops, should be thoroughly ventilated, if they are to prove a source of healthy recreation.

No word is necessary in praise of the virtues of *cricket* Cricket. as a recreation. I would only say that if the *elevens* of our great schools are to attain to the perfection of which they are susceptible, a thorough organization of the game must be effected throughout the whole school, so that the requisite capacity may be elicited early in life, and well developed during youth. At the present time there is too much looking on at the "swells" by the little boys; and, far too frequently, a whole school will be found observing the few elder boys playing, instead of learning cricket themselves.

Cricket, like other games, should be compulsory, at all events on some half-holidays. But, as there are some few boys who have an inherent dislike to cricket, and a total inability to play—boys who can neither bat, bowl, nor field—they should, after a thorough trial, be exempted. For, if compelled to play, they are bowled out during the first "over," and for the remainder of the half-holiday, while their own side is "in wicket," they are loafing about and taking no exercise; or "fielding," and that very badly, for their opponents. Such boys would obtain far more recreation and advantage from some other form of exercise. When thus excused, however, some other occupation should be enforced, and they should not be permitted to make their aversion to cricket a ground for idleness. A distaste, too, is engendered for the game, in consequence of the small boys having to "fag" at the nets too long, and too frequently, for their seniors. Moreover, the boy who never takes any other exercise,

such as walking, running, and swimming, must not assume that he will excel at cricket. The best cricketer needs running and walking exercise to train his wind and legs for a long innings. And he requires fives, racquets, and continual bowling and throwing, in order to bring his arms and chest into the most effective condition.

One of the great obstacles to the game of cricket at a large school is the want of space; for the "pitches" are sometimes so close together that the play is fraught with danger. And on account of this difficulty many boys cannot play, unless the games are perfectly organized for the good *of all*. It would be interesting to count the number playing on any given half-holiday, for every "pitch" accounts for twenty-two boys. What are the others doing? Is any other game planned for them?

Boating. *Boating* is one of the best exercises for boys, and every available piece of water should be utilized for the purpose, since the exertion develops all the muscles about equally, making strong arms and legs, a well-expanded chest, and a straight, strong back. It is also, when carried out with precaution, good for the development of the heart and lungs. But I think it would be an invaluable rule to restrict boating to those who take the trouble to learn to swim first; the pursuit, while necessitating swimming, would thus be safer.

In rowing, it should be particularly borne in mind that frequent periods of rest are necessary, for the tendency here is to prolonged exertion. Those who row should begin gradually, and by degrees increase the distance and force, until a long distance can be traversed without fatigue or harm. It should be remembered that no severe exercise, such as rowing, should be undertaken without previous training, by those who have been leading

a sedentary life, by those recently convalescent from an illness, or by those suffering from colds or coughs.

The following rules should be enforced:—

1. Every boy should *learn to swim* before he is permitted to enter a boat.
2. Every boy should be compelled *to keep on his own side* of the river.
3. Every boy should be taught the *danger of weirs*.
4. Every boy should be taught *never to stand up in a boat*, under any circumstances whatever. If it is necessary to change seats, the boat should be first rowed to the shore.
5. If a boy *falls from a boat into the water*, he should be made to hold on to the boat while it is rowed to shore before he is permitted to enter it again.
6. If a *scull falls into the water*, the greatest care is requisite in recovering it not to upset the boat.

As football played on every half-holiday in winter is too Running. exhausting, if any mental work is to be levied, and since many days in winter are unsuitable for football, some other exercise must be substituted, in order that recreation may be provided for all weathers.

There are many valuable games, mentioned on page 319, which have been allowed to disappear from our schools, and which could be advantageously resuscitated if the junior masters could be induced to organize them, and render them popular; or even if a few of the masters would play themselves with the boys; for the gain to schools would be immense, if *sometimes*, and for some boys *always*, less arduous exercise were available than football and running. These games are capital *pièces de résistance*; but they are too solid for all occasions.

There are few exercises more healthy and enjoyable than *running*. Some of the pleasantest reminiscences of

school-life are the *cross-country* runs; and, also I am bound to add, among the most painful. These runs are as much enjoyed during boyhood, as are runs with the hounds during manhood. And they deserve encouragement.

The running at schools varies from one hundred yards to thirteen miles and upwards. Opinions greatly vary, according to the capacity of the runner, whether the short and quick run, or the long one, is the more arduous. There can be no doubt, however, that the short and quick run is apt to cause immediate damage to the heart from strain, which in all probability soon recovers; while the long running rather tends to cause permanent mischief to the organ from dilatation. I may go a step further and assert that, for *boys* at school who have not finished growing, the short and quick runs are harmless; while the prolonged effort frequently causes much mischief; and to growing boys a three-mile race is often the most exhausting on account of its being run at the *pace* of a mile race. I am unable to enter into detail in proof of this, but the experience of a close observer of nearly twenty-three years, who sees every accident as soon as it occurs, is of some value. I may add that, for full-grown *men*, the short quick race is more harmful, and more trying, than a prolonged run.

Running, as adopted at our great public schools, comprises three kinds:—

1. *Athletics*, where the running varies from one hundred yards to one mile.

2. *House-runs*, where the running varies from three to thirteen miles and more, and is performed mainly along the high roads.

3. *Paper-chases*, which are run across country, and include brook-jumping. These cross-country runs, including *brook-jumping*, are a most exhilarating and enjoyable English pastime, where the distance is not

too long; nor the pace too quick, but plenty of time is allowed for walking; nor the brooks too wide. For brook-jumping necessitates accurate judgment, courage, and staying power. Judgment and discretion are required also in learning to run quietly, so as to save "the wind" between each jump, and thus retain a maximum of "wind" for carrying the jumper over the brook dryshod. It involves judgment and knack in avoiding the loss of time, which are only acquired by practice and experience, in learning to "take off" accurately and quickly, and "land" and pick up the running again on the other side with agility. But—to use a phrase which will most influence boys—the un-English method of brook-jumping, where no attempt is made to jump, but where every brook is waded, and every boy drenched, is so senseless and dangerous a proceeding, that this form of the game should be ostracized by the "scratching" of every boy who does not "come in" dryshod—a certain sign of his having jumped the brooks.

Of all boys' exercises for recreation, there is none that permits of over-exertion so readily as that of *running*—not even rowing. Those who have not finished growing are equal to almost any quick, active, temporary exertion, but are incapable of sustaining prolonged strain without sometimes lifelong harm resulting. As, on the one hand, there is no greater advocate of the art of running than myself—for I regard this exercise as an excellent means of promoting the growth and development of boys and girls, who sit much at lessons—so, on the other hand, I am an unsparing opponent of unwise and unreasonable running, with its frequently serious consequences. These are denied by many who ought to know better; but if the experience of the sufferers (those who *cannot*, or *ought* not to run, but who nevertheless are

compelled, with more force than persuasion) be taken, instead of the opinion of strong athletes, the true state of affairs would be so patent as to necessitate immediate redress. But, with the curious perversity of human nature, every one's view is sought but that of the sufferers.

The subject of *over-exertion* is one of such general concern, that it demands a place in a Book on Health, on account of the permanent consequences it may involve. It is not always easy to provide that exercise shall not degenerate into *over-exercise*, when one has to contend with the enthusiastic impulses of exuberant youth. Still, vigilant care should be used to ensure that no exercise should proceed too near the borderland of over-exercise; for any adverse circumstance, such as slight impairment of health, a warm day, soft ground, mist or fog, or a high wind, may then produce disaster.

In order to obviate this result, every exercise should be appropriate to the age, size, and physique of the young; that which may be most suitable for the age of nineteen, in a robust constitution, is most inappropriate at the age of thirteen, accompanied by a delicate physique. These simple but important points are insufficiently recognized, and it is quite refreshing to find boys voluntarily "sized" for their games, where the game does not render this imperative.

Properly arranged, under a reasonable system, running cannot harm boy or girl. It develops lungs, heart, and limbs; and teaches the importance of graduated exercise, with the object of getting by degrees into training for more arduous exertion.

There are some parents who would still prefer that their boys, like their girls, should take their exercise in walks, two and two, under the superintendence of an usher. A public school is not a suitable place for these young

gentlemen and ladies! I would rather teach girls to avoid stately walks, and take the exercise which will improve their physique, and promote a graceful carriage. But if running were established in a suitable form, no reasonable parent would have any room for objection. I will state what I regard as suitable running, *i.e.* running which will develop, and not damage, the body.

Our large schools comprise, as a rule, a certain number of boarding-houses; but a few, in addition, have a large proportion of the boys housed in a central building, where the plan I am about to suggest can be more readily carried out. I shall describe the scheme in connection with the former arrangement. A boarding-house contains from thirty to fifty boys. These boys consist of *average* boys, by far the larger number; boys *above* the average, and those *below* the average. Of these two latter classes there may, perhaps, be half a dozen in a house.

1. The six boys who are *below the average*, from their size, physique, recent illness, or delicacy of constitution, should form a "run" of their own, united with similar boys from other houses. The "run" should not exceed *three miles* in distance, nor the *pace* surpass three miles an hour. On *warm* days, when fatigue is more easily induced; *foggy* days, when the breathing is less free; on days when the *ground is heavy*; and at the commencement of each running season, more time should be allowed. This practically means that these small boys would, on days when games cannot be played in the school field, be compelled to take a three-mile run across country; and that they should have a spurt of running, then a walk, and so on. For all the young—and rightly so—dislike the solemn, aimless walk. Some, who have not tried it, will inquire how boys can take an hour in *running* what they can easily *walk* in that time. Those

who desire to know for a fact, should endeavour to *run* three miles within an hour. They will find that, after two hundred yards have been run, they will be glad to walk, "to get their wind;" and that when they walk, they only do so at the rate of a mile an hour. When, too, they have covered half the distance, they will be glad to stand and rest a few minutes, and so on. They will thus find that an hour is not too long for the feeble to accomplish the run of three miles.

2. The next set of boys, comprising, perhaps, half the house, who are *up to the average* in respect of age, size, and physique, including also boys much over-grown, would take a run never exceeding five miles, with the rule that no one should be allowed to compass it under the hour. More time should be enforced on unsuitable days.

3. The next set, consisting of the other half of the house, which comprises those who are *up to the average* for their increased age, size, physique, and stamina, might take a run never exceeding seven miles, each to take his own time, and on bad days extra time should be enforced.

4. The six strongest boys in a house, receiving their promotion on account of acquired and well-trained running ability, might be permitted to take a nine-mile run; but this distance should never be exceeded by growing boys. No one should be permitted to enter this set without passing through the lower grades. Each should take his own time, and extra time should be enforced on unsuitable days.

Every "set" should be under the charge of a captain, who should be recognized by means of a distinguishing badge, and who should report any case of incapacity during the run immediately on his return; the case should then be closely investigated. He should further have the power of *compelling* any boy to walk home who showed signs of fatigue. He should responsibly arrange

that the runs should be slower, and shorter, *at the commencement of the running season*. In this way, no boy could run beyond his capacity; his exact capacity would become known to the captain of the run, and the house-master; and no boy would be promoted from one set to another, until he was declared fit.

Some may inquire as to the need of these precautions in a purely boys' recreation? The reply is, that boys do get overdone, and suffer considerably, as men do, from lack of judgment, and want of thought, as well as from ill-arranged and unorganized systems, as I shall proceed to show.

A boy becomes overdone from running from various causes, such as poor physique; running distances beyond his capacity, or at too quick a pace; and, though possessing a good physique, running long distances without previous training. By *training*, I mean that boys should run a few yards, then walk; then run again, and so on. Moreover, the same boy will run the same distance, at the same time, and at the same pace on a *cold* day, and come in fresh; while on a warm, muggy day, with the ground heavy, he will finish *merely fagged*; or he will *faint*, or *vomit*, on the way, and require to lie down on the road; or he will complete his run, but *vomit* all the evening after reaching home; or, if still more over-done, he may become absolutely *insensible* while running, and this state may last for hours; or he may *die* while in the act of running.

The first symptom of distress *while* running, is an *inability to go on breathing* with comfort. It becomes quick and shallow, followed by a gasp and a sigh, with a sense of constriction, probably diaphragmatic, and growing still shallower and more irregular.

Then *bright specks* are seen in the eyes; and the eye-balls throb, the pulsation being seen as well as felt.

Then some *loss of power takes place in the legs*: they will not run straight: the knees give way.

At a further stage, the boy becomes *completely dazed*: he runs mechanically, does not know what he is doing, or where he is going. At the last stage, the boy becomes insensible, falls, and dies. Professor Michael Foster points out that this lamentable fact arises really from blood-poisoning, in consequence of the presence, in excess, of some substances introduced into the blood by the contraction of the muscles. And, further, "that no ordinary physical examination will be able to determine whether a lad is fit to undertake a 'run'—it may, of course, in many ways, show that he is *not*; in the present state of our knowledge, this can only be settled by *trial*. No boy should be allowed exertion beyond a certain limit, who *has not proved by trial his fitness for it*."

It is, therefore, clear that, while running is an excellent pastime, it should be practised as a man climbs a ladder, one rung at a time; that it should be absolutely under control, and adapted to the age, size, and physique of the runner; and, further, that some boys *cannot* run, however sound they may be certified.

Swimming. I lay special stress upon the value of the swimming-bath and bathing. Every school that can possibly manage it should have a place in which the boys can learn and practise swimming. If there be a river, it may be utilized, with advantage, for summer bathing; but it is not so good as a swimming-bath under cover, the water of which can be warmed, and thus used all the year round. Swimming should be taught, if necessary, though, as a rule, nearly every boy will learn by himself or from his school-fellows.

For a certain time during the day the bath should be

closed to all but those who cannot swim, in order that beginners may the better be able to learn unnoticed.

The size of the bath should vary according to the number of boys in the school. The entrance should not be at the end from which the boys dive: the door should open on one side of the building by a porch; then, as the door opens, no one can see the bathers inside, nor can the wind enter with a direct rush. The bath itself should be arranged for all sizes of boys, and two points are essential in its construction:—

First, that the hot water should enter the bath from the boiler at the *shallow* end, where the little fellows in learning to swim paddle so long in the water, so that they may have the benefit of the warmth.

Secondly, that the *cold* water should leave the bath for the boiler from the deep end, and from the surface of the water; and that the *hot* water, as I have said, should enter at the shallow end at the bottom of the bath. Being specifically lighter, it will rise to the surface, and thus, by its upward movement and constant circulation, warm the water throughout. When the hot water enters the bath at the surface, as is sometimes arranged, it simply floats on the top like oil, its heat ascending and heating the building only, while the water below is absolutely cold, often 15° Fahr. lower than that at the surface. There is not only a great waste of power in such heating arrangements, but it is positively injurious to swim in water hot round the neck and cold to the feet: occasioning fainting in the young, and tending to produce apoplexy in the middle-aged.

There is, however, a better plan than that of passing the water from the bath itself through the boiler, by providing a system of hot-water pipes round the bottom of the bath, and circulating hot water or steam through them.

The temperature should never be below 65° Fahr., or above 70° Fahr.; for boys, winter and summer, generally stay too long in the water—which should be discouraged.

1. *Time of bathing.*—If bathing is to be a source of health, and not a cause of mischief, it is necessary to bear in mind certain rules. Those prescribed by the “Royal Humane Society” are so excellent that I cannot improve upon them, except by adding another.

IMPORTANT TO BATHERS.

1. Avoid bathing—within two hours after a meal.
2. Avoid bathing—when exhausted by fatigue or from any other cause.
3. Avoid bathing—when the body is cooling after perspiration.
4. Avoid bathing altogether in the open air if, after having been a short time in the water, there is a sense of chilliness with numbness of the hands and feet; but
5. Bathe when the body is warm, provided no time is lost in getting into the water.
6. Avoid chilling the body by sitting or standing **UNDRESSED** on the banks or in boats after having been in the water.
7. Avoid remaining too long in the water; leave the water immediately there is the slightest feeling of chilliness.
8. The vigorous and strong may bathe early in the morning on an empty stomach.
9. The young, and those who are weak, had better bathe two or three hours after a meal; the best time for such is from two to three hours after breakfast.
10. Those who are subject to attacks of giddiness or faintness, and those who suffer from palpitation and other sense of discomfort at the heart, should not bathe without first consulting their medical adviser.

And I would add—

11. Bathe as many times a day as you like, provided you are not in the water for more than a few moments. In summer, a plunge and out again, several times a day, is not only refreshing but very invigorating.

2. *Time in the water.*—Harm results when boys remain so long in the water that they get thoroughly cold.

The time should be measured by minutes, not by quarters of an hour. Bathing makes the skin more healthy, and gives it tone; *prolonged* bathing, on the contrary, has a depressing action on the skin, and at the same time congests the internal organs, causing serious mischief.

3. *Life Saving by Swimming*.—It seemed to me that so much good could be effected in public schools by teaching the boys (who eventually are scattered all over the world) how to save a drowning person—good not only to themselves, but by their influence and example teaching others also—that in the year 1882 I proposed to start a prize at the school which I have the honour to serve. And, casting about for the best way of carrying out this intention, I asked the Royal Humane Society if they could help me in the matter with an examiner and a medal, provided I reimbursed them, as I thought the prize would be much more valued by the winner, and create more competition, if it came from so estimable an official source. I pointed out to the Society what a vast amount of benefit would be effected if it assisted in making the boys of our great public schools take an interest and excel in *saving life from drowning*. The Royal Humane Society immediately entered into the scheme warmly, and very generously awarded “an annual *silver medal* for each great public school for the best practice in rescuing from drowning;” thus, I hope, there will pass into the world every year hundreds of boys, well-skilled in life-saving by swimming—able themselves, and capable of teaching others.

RULES TO BE OBSERVED BY COMPETITORS FOR THE PRIZE SILVER
MEDAL AWARDED BY THE ROYAL HUMANE SOCIETY FOR
PROFICIENCY IN SWIMMING EXERCISES AT PUBLIC SCHOOLS
WITH REFERENCE TO SAVING LIFE FROM DROWNING.

1. The Medal to be awarded annually to each selected School, and to be presented at such time and place as the Head Master may appoint.

2. The Competition to be open to all Boys of the School, subject to the approval of the Head Master, and to take place in the river or other bathing-place used by the School, and to be carried out under the supervision of the Head Master, or such Umpire as he may appoint.

3. Each boy to have one Trial under the following conditions :—

1st Trial.—A Dummy or Block of Wood, to represent a Body, to be floated at some distance from the place where the Boy has to enter the water. He is to swim to it and bring it back to the starting point.

N.B.—In running water this rule may be modified to such extent as the Head Master may consider necessary.

2nd Trial.—A weighted Dummy or Block of wood with rope handles to be sunk at some distance from the place where the Boy is to enter the water. The Competitor to swim to the spot, dive and bring the dummy to land at a place appointed. The spot where it is sunk may be indicated by a floating cork, not to be attached to the dummy.

3rd Trial.—A Dummy to be sunk in the bath or river, the place not being indicated. The Boy to enter the water at a given point, then dive, find the dummy, and bring it to shore. The weight of the dummy to be proportioned to the ages of the Boys. Where it is impossible to conceal the dummy, this Rule can be modified by the Umpire, only making the trial more difficult than those preceding it.

A certain number of marks to be awarded to every Competitor in each of the above trials, the minimum of time occupied being an important consideration.

4. Competitors to be partially clothed.

5. The Medal, and its accompanying Testimonial inscribed on Vellum, is to be awarded to the Boy who has obtained the greatest number of marks in the above three Trials.

That the teaching of saving life by swimming may be of use, even while at school, I can personally testify, for a nephew of mine, a public-school boy of only fourteen years of age, in 1885 saved the life of a school-fellow who, while bathing, had got into a sluice. He had already sunk twice, when this boy saw him, jumped in

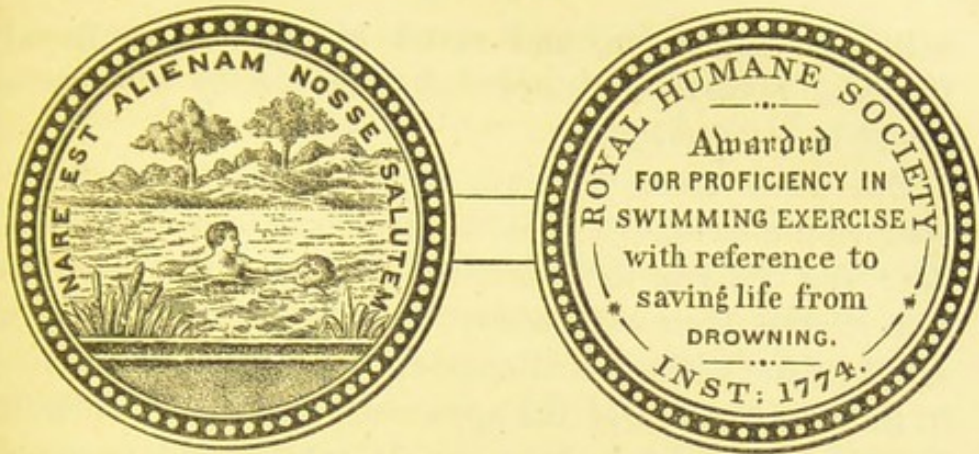


FIG. 21.—THE ROYAL HUMANE SOCIETY PUBLIC SCHOOLS MEDAL.

ROYAL HUMANE SOCIETY.

INSTITUTED 1774.

SUPPORTED BY VOLUNTARY CONTRIBUTIONS.

PATRON,

HER MAJESTY THE QUEEN.

VICE PATRONS,

H.R.H. THE DUKE OF YORK, K.G., &c.

H.R.H. THE DUKE OF CAMBRIDGE, K.G., G.C.M.G.

PRESIDENT,

HIS GRACE THE DUKE OF ARGYLL, K.G., K.T.

This is to Certify that a Silver Medallion for "Proficiency in Swimming Exercises with reference to saving Life from Drowning" has been awarded to

SECRETARY.

4, Trafalgar Square,
London, W.C.

CHAIRMAN.

with his clothes on, and saved his life. The Royal Humane Society has awarded this plucky rescuer a medal in consequence.

But while these "rescues by swimming" restore the poor victim to *land*, I should like to see him restored to *life*; and I have, therefore, supplemented the generous gift of the Humane Society, at my own school, by a small prize (a silver challenge-cup), for the best practice in the "restoration of the apparently drowned," when he has been brought to land, to all intents and purposes dead, unless immediate help be forthcoming.

Restoration
of the
Apparently
Drowned.

This method of "*How to Restore the Apparently Drowned*," is one of paramount importance for boys to know, being not merely a question of health, but of *life*. Every now and then a boy gets nearly drowned from a blow on his head in diving, or cannoning under water, or becoming faint from swimming too long under water, and from other causes.

Now, if life is to be saved at such times, boys must rely on themselves, instead of waiting for the arrival of a medical man; since the first few moments are the most valuable. I am therefore striving to teach boys what to do on these occasions. There are various methods; for instance: *Marshall Hall's*, which is practically out of the question, as it requires two, if not three, boys to carry it out effectually; but where will three ordinary boys be found in a moment able to calmly act in concert? The same objection applies to *Silvester's method*, which requires, to prove of any use, that one person should hold the tongue, while another works the arms in the orthodox fashion. I do not think that one among five hundred boys would be found able to hold the tongue effectually.

I have, therefore, taught *Howard's method*: first,

because one boy can carry it out alone; secondly, on account of its extreme simplicity and efficacy.

Why this method is not advocated and practised generally I cannot conceive; for although "Silvester's method" admits more air into the lungs *when the tongue is properly held*—which it is very difficult to do, especially as the jaws are usually clenched—yet it is nevertheless not a question of the *quantity* of air admitted which is essential, but the fact of water getting out, air taking its place, and one person being able to effect the process. It is thus carried out:—

HOWARD'S METHOD.—HOW TO RESTORE THE DROWNED.

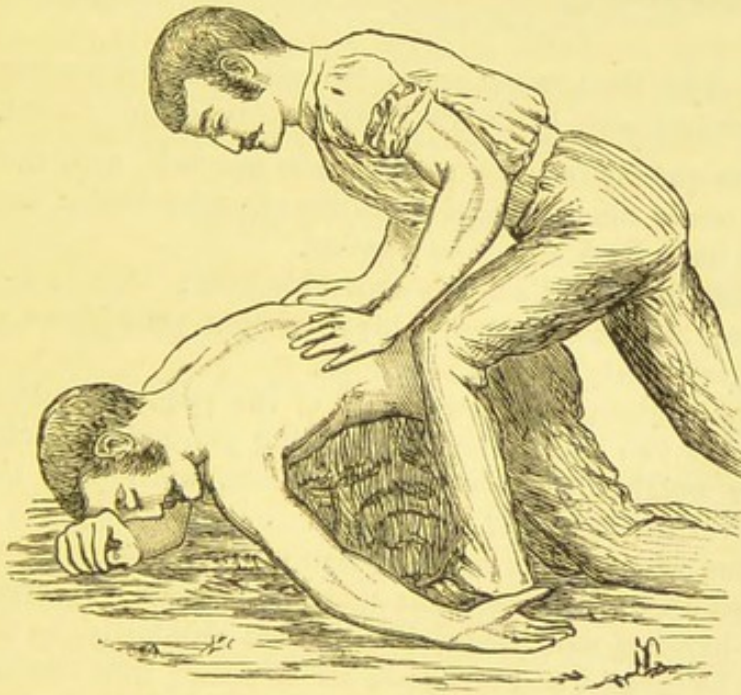


FIG. 22.—PRESSING AND DRAINING WATER FROM LUNGS AND STOMACH.

1. *Instantly* turn the patient downwards, with a large firm roll of clothing placed under the stomach and chest.
2. Place one of his arms under his forehead, so as to keep his mouth off the ground.

3. Press with all your weight two or three times, for four or five seconds each time, upon the patient's back, so that the water may be expelled from the lungs and stomach, and drain freely out of the mouth.

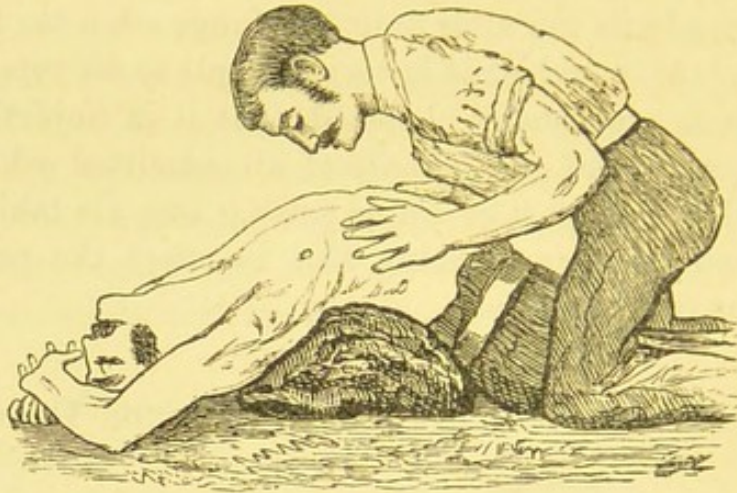


FIG. 23.—THE BELLOWS-BLOWING MOVEMENT, FOR PRESSING FOUL AIR OUT AND DRAWING PURE AIR INTO THE LUNGS.

1. Then *quickly* turn the patient, face upwards, with the roll of clothing under the back just below the shoulder blades, and make the head hang back as low as possible.

2. Place the patient's hands above his head.

3. Kneel with the patient's hips between your knees, and fix your elbows firmly against your hips.

4. Now, grasping the lower part of the patient's naked chest, squeeze his two sides together, pressing *gradually* forward with all your weight, for about three seconds, until your mouth is nearly over the mouth of the patient.

5. Then with a push, *suddenly* jerk yourself back.

6. Rest about three seconds; then begin again, repeating these bellows-blowing movements with perfect regularity, so that foul air may be pressed out, and pure air be drawn into the lungs, for about eight or ten times a minute, and during, at least, one hour, or until the patient breathes naturally.

NOTE.—The above directions must be used on the spot instantly, without a moment's delay, otherwise success may be hopeless.

Prevent crowding around the patient; plenty of fresh air is important. Be careful not to interrupt the first natural breaths; if they be long apart, carefully continue between them the bellows-

blowing movements as before. After breathing is regular, let the patient be rubbed dry, wrapped in warm clothing, take hot spirit and water in small occasional doses, and then be left to rest and sleep.

At one of our universities, in 1885, a life was saved not only through knowing how to carry out the method for restoring life, but owing mainly to indomitable perseverance; for even after the process had been well conducted for some considerable time, without any result, and when all hope of success was extinguished and efforts were being discontinued, a bystander suggested a still longer effort, and this was rewarded with success at last.

The great importance of this matter—of being able to resuscitate a drowning school-fellow, and the benefit that can thus be disseminated by five hundred boys from a public school—must be my apology for dwelling at such length upon the subject in a treatise on “School Health.”

SCHOOL FIRE BRIGADE.

There are naturally diversities of interest in all schools; and it is clear that the greater the number of interests that can be excited the better it is for the boys themselves, and the better for their ultimate work in the world, where educated gentlemen are dispersed to all parts of the globe trained in every technical skill which may prove of service to their fellow-creatures. A training also in the modes of saving life from “Fire,” and in the concerted action necessary for the extinction of fires, is of inestimable practical advantage during school life, by enabling the boys themselves to afford assistance in the case of fire, and preventing panic. Every large school should have its *Fire Brigade*, so that the boys may learn the manipulation of all fire-extinguishing and life-saving appliances. The membership of the brigade will be keenly sought after, and the drill as keenly learnt.

IX.

ILLNESS.

ILLNESS at all times and in all places is the greatest of misfortunes. But illness at school has so much that is distressing attached to it, that we must consider minutely, not only how to prevent it, but also how to care for it when it has occurred, and how health can be regained, without permanent ill-health, or organic defect, remaining.

It is heartrending to the parents, who are often at a distance—both parents sometimes residing in India or in one of our colonies—from their child. For, knowing neither doctor nor nurse, they are naturally apt to think that nothing can be done as it would be done at home under the mother's eye, and with the confidential family medical adviser, well known and faithfully trusted, to look after him.

It is an anxious time for the house-master, too, for he knows how a parent must feel, separated from his child at such a period, and he is consequently often over-anxious that all that skilled science can do should be effected at the right moment, and in the right way, for the sufferer.

It is also a time of anxiety for the conscientious medical officer, who has often to bear alone the entire responsibility of a life. Never are those beautiful words of Hufeland brought more vividly home to a medical adviser than at such a time:—"Thine is a high and holy office; see that thou exercise it purely; not for thine

own advancement, nor for thine own honour, but for the glory of God, and the good of thy fellow-creature: hereafter thou wilt have to give an account of it."

It is anything but a pleasant time, even when the illness is not dangerous, for the boy himself. For, being naturally a lively animal, he feels acutely the necessary discomforts and restraints of illness, and is ever striving to be free. Moreover, he is separated, more or less according to circumstances, from his school-fellows and his games, and this he regards as a "bore."

When convalescent from an illness, he is often still more to be pitied; for, feeling well, he is anxious to be set at liberty, before he is either free from infection, or strong enough to bear the exposure and exertion.

But when a death at school takes place—fortunately so rarely as to amount, in the school I have the honour to serve, to only 7 deaths in 23 years, out of 400 boys always present, or one in 1300, or 0·07 per cent. per annum—the whole school is hushed: every one is appalled.

Mr. E. Chadwick, C.B.,* has stated that the death rate in common schools is from 6·0 to 12·0 per 1000.

It is the aim of this treatise not only to point out how illness and death may be reduced to a minimum in all schools, and under all circumstances, but also to prevent seeds being sown at school, which may develop, after school life has ceased, into vice, disease, and early death.

FEIGNED ILLNESS.

I am obliged first to speak of *feigned illness*—the Malingerer.

All schools possess this creature, but he is found especially at the public schools, where he has increased

* Loc. cit.

opportunities for carrying out his inclinations, and great scope for practising ingenuity.

There are two specimens of this class: the boy who has nothing the matter with him, except that he dislikes work; and the boy who has some slight discomfort, which he exaggerates when work has to be done, but ceases to remember in the intervals of work. These creatures—I cannot call them boys—are only seen on whole-school days; or when the lesson is “unseen,” and this fact should clearly reveal to the master the boy’s peculiar system of preparing his lessons at other times. These boys are rarely to be seen on a half-holiday; though it must be remembered that the “malingerer” of whole-school days very frequently becomes the “loafer” of half-holidays, and strives to shirk any game which is distasteful to him, if play is compulsory.

I need scarcely say that he does incalculable mischief to others, as well as to himself.

This impostor is not a natural production, but a carefully manufactured article, produced at the cost of considerable ingenuity on the part of the malingerer, and considerable denseness on the part of the parents; and being produced at home, solely by parents or their subordinates, is sent to school, to become a source of bad example to others.

The parent commences to manufacture this specimen very early in the life of the boy—almost as soon, indeed, as he can talk: it is a very gradual process, and usually passes through the following stages. The boy has something disagreeable to do at home, which he does not relish, and does with bad grace. By-and-by he dislikes it more and more as its repetition occurs; and at last it becomes so irksome that it worries him, he pulls a long face, and looks the picture of misery. The parent, instead of observing the drift of the case, says, “What is

the matter? Do you not feel well?" No answer. Then leading questions are put, and the chord is struck—the first step in the malingerer's career is made. "Do you feel sick? Have you an ear-ache?" Happy thought! "Yes; my ear is very bad." Then follow sympathetic expressions, and he is let off his disagreeable duty. By-and-by the return of the distasteful duty comes round, and the same dodge is tried and is successful. Similar ruses are practised a few times as they are found to pay, and the confirmed malingerer is produced. He is, in due time, sent to school, and is only to be found when work is on hand, or the weather is cold, wet, or foggy: never when there is a half-holiday, or any pleasurable excitement. He tries to evade the doctor—occasionally with success, and soon learns what description of ailment and what facial expression are required to delude his master. These he practises with indescribable skill, and often is successful, as he knows how to ring the changes sufficiently to gain his purpose. This type of boy is often very trying to patience and temper, and no pains should be deemed too great to judge such an individual accurately in each single instance, so that, on the one hand, he may not feel that he can *do* the doctor or his master; while, on the other hand, he may not be sent to work, or punished, when he is really unwell. It requires much care and caution on the part of the doctor to be sure that he is right, and then no mercy should be shown: shame him if possible, and as soon as possible.

I have spoken at length on this point because the practice ruins a boy's character; and because I want parents to see that it is they who are mainly responsible for the origination of the evil: later on its arrest is difficult, if not impossible.

Sometimes, however, a malingerer is produced by the *bullying* which a boy has to undergo at school. To

extricate himself he feigns illness, and will then resort to every conceivable and inconceivable means to gain his point—so terribly does the bullying affect his mind.

MEDICAL ARRANGEMENTS.

In private schools, with a small number of boys, the medical arrangements are, of course, the same as in a private family. The doctor is sent for when required, and the patient is nursed in the same way as is usual in private houses.

But in our great public schools a complete medical organization should exist—perfect in detail, and capable of coping with any difficulty, small or great, not only for the welfare of the individual boy, but also for the benefit of the whole school.

Medical Officer. One essential must be observed to ensure this: there should be undivided responsibility; consequently, *one medical officer*, and one only; the whole school should be under his daily supervision in medical and sanitary matters.

It is, however, the custom with some of our great schools to have more than one medical adviser. This is unwise; for it entails an injudicious division of responsibility without any compensating gain, while one doctor is quite competent to deal with all the cases of illness that occur; and he should be solely responsible for the conduct of his staff of nurses.

At other schools, one medical officer only is appointed; but he is not allowed to practise his profession outside the school: a more short-sighted policy it is difficult to conceive. Such an arrangement is really disastrous to the welfare of the health of the school: the medical adviser

tends simply to rust and become useless. He literally has not sufficient illness "to keep his hand in;" consequently his power of diagnosis fails, and he becomes unable to diagnose any but a far advanced typical case. Whereas he should be able at any stage of every malady to diagnose early and accurately; for without accurate diagnosis no efficient treatment is possible.

If the reader will kindly refer to my Table of Infectious Illness at Rugby School, on p. 388, he will see at a glance what I mean. For instance, in twenty-three years I have seen, in my school practice, only three cases of diphtheria and four of typhoid fever. There is something wrong with a school in which many of these major illnesses occur; and yet, if the medical officer never sees any but these few cases he cannot be in the highest state of efficiency for dealing with them when they arise. So that it is not only unwise, but becomes hard upon the parent who has a child with a dangerous illness under the care of a doctor whose practice and experience are limited to a school sick-roll—unless, of course, the school is so full of illness as to afford him sufficient practice. For practice is essential to efficiency.

It must surely be evident that it is the duty of the school authorities to appoint the best physician that can be obtained, of superior attainments and known high character, to pay him a suitable salary, and to allow him to obtain all the practice he can get in the neighbourhood, including a hospital appointment where it is possible. By this means he will constantly see all descriptions of illness, arising in every kind of constitution, under every conceivable circumstance, and the school will reap the advantage.

It is manifest that when *typical* examples of the various diseases occur there is not much difficulty in recognizing and treating them; but, inasmuch as typical

cases are the exception, and as all diseases present an infinite variety in their character and course, and require a corresponding variation in treatment, it is obvious that he is the most fitted to deal with such cases who sees the greatest number of these variations appearing in all sorts and conditions of men, instead of in a class of individuals—boys—only.

The appointment of medical officer to a great school is one of importance, as will be seen from a discussion of his various duties; for on their proper discharge much of the health and happiness of the school will depend. The medical officer, while appointed by the head-master, should hold his office by virtue of the will of the governing body of the school, and not at the head-master's decision. For, if the medical officer, in case of threatened dismissal, had the right of appeal to the governing body, he would then be able to accomplish far more good for the school and scholars, without the threat of dismissal hanging over his head at every turn, and at every suggested remedy for abuses.

Since this was written I find Dr. Farquharson, M.P., in his work on "School Hygiene," making the following pertinent remarks:—"In the first place, every school should be provided with a medical attendant, appointed by the head-master, working under his direction, responsible to him, and to him only, but with the right of appeal to the governing body in case of capricious dismissal. It is just possible, although not probable, that, as occasionally happens in private practice, sanitary recommendations may clash with the self-interest of those to whom they are made, or differences of opinion may arise on points of professional ethics, or even on actual practice. Under these circumstances the assumption is not an extravagant one that an attempt may be made to cut the Gordian knot of controversy by the

sacrifice of the opponent, and that the future career of the doctor may be seriously compromised by removal from his post. Such things have occasionally happened within the professional ranks of education, and may at any time happen again ; but, inconvenient although it may be for an assistant-master to lose his appointment, he will seldom fail in obtaining employment elsewhere, and therefore stands on a different basis from the medical man, whose credit must necessarily suffer in the neighbourhood in which he lives, and who loses a considerable and perhaps essential part of his income by dismissal. Without in any way wishing to impair the authority of the head-master, or to insinuate a doubt of the almost invariably kind and sympathetic treatment of those under his charge, we are compelled to admit the occasional infirmity of human nature and the possibility of injustice being done, and it will, therefore, be right to allow the doctor an appeal to the governing body in case of what may appear to him to be unnecessary or insufficiently explained removal from his post."

It would be an additional safeguard to public schools if the medical officers were held responsible in some way to the governing bodies, for it would obviate certain well-known difficulties, reported in the papers from time to time, and would ensure greater trust on the part of the public. I do not think that this responsible relation should take the form of a report on the sanitary and efficient state of the school premises, for that could be better accomplished by an officer not in any way connected with the school. But a report on the sickness of the school might be furnished to the head-master for presentation to his governing body.

The medical officer should, therefore, be responsible Duties.
to the governing body and the head-master for the entire

arrangements in respect of sickness and accidents occurring at school; he should send the sound boys to their work, and prevent the unsound ones being worked when they are unfit. He should regulate and control the entry and return of all boys who have been sick, or who come from houses where sickness has occurred in the vacation; he should also, through the masters, advise parents of any infectious illness that has arisen during the latter end of term, so that precautions may be adopted at home for preventing the infection of the family, and the spread of infectious illness over the country from the schools as a centre.

The *duties* of the school medical adviser are thus four-fold, and of paramount importance. First, to treat accidents and sickness of all kinds; secondly, to have under control all sanitary arrangements in the school, boarding-houses, and sick-houses; thirdly, to prevent infectious illness entering a school, and to minimize it if it occur; fourthly, to protect parents from infectious illness being brought home from school.

Consulta-
tions.

But while, in order to ensure efficiency, I thus advocate undivided responsibility in carrying out the important medical work in large schools, I would also urge that a *consultation* should be obtained without the slightest difficulty whenever it is considered necessary by a master or a parent, with a view to preventing the possibility of arbitrariness.

Daily
attendance.

To carry out his duties properly, a *daily attendance* of the medical officer is necessary. He should visit the whole school every day at a certain hour, fixed at a time when all the boys may be found in their houses; and the earlier in the morning the better, so that cases of illness and infectious disease may be at once removed from each boarding-

house, and all malingerers sent into school. This medical visit should be made most punctually, for boys are boys, and if appearance before the doctor entail the slightest trouble on their part, they will not present themselves; but if they know that the doctor can be found at a certain moment, they may then condescend to show themselves.

It is only thus that the fundamental medical rule for schools can be carried out, namely, "*Report yourself to the matron or doctor on the occurrence of the slightest ailment,*" for by this means alone can serious illness and epidemics be prevented. If the ailment be found to be *nothing*, the boy should be sent into school; if a *slight ailment*, he should be kept indoors, so that he may not become worse; if a *serious illness* be commencing, he should be immediately sent to the sanatorium, and placed under the most favourable circumstances for cure. If the *illness* be an *infectious one*, the matron should at once isolate him until the doctor has seen him, and then, if there be a doubt, he should be *quarantined*, or if a certainty, he should be immediately transferred to the infectious house, and kept clear of the rest of the school. The rule of reporting illness early is absolutely necessary for the efficient medical government of large schools. A great difficulty to be contended against is the careless boy, who, knowing that he is not well, even showing a *rash*, "thought it was nothing," and so fails to report himself, and thereby risks the health and life of his school-fellows. The special importance of at once reporting a *rash* on the skin, however insignificant in character, cannot be too early impressed upon all boys as soon as they enter school, for it saves many an epidemic by means of instant isolation.

All Illness
to be
reported
at once.

School-home
for Delicate
Boys.

There are a certain number of boys in all schools who, though not ill, are not strong enough, for the time being, to bear the ordinary strain and exposure of school life, but need more home comforts and attention than can be well provided where the number of boys is large. As far as I can learn, in no great school is special provision made for these delicate boys, although it could easily be carried out without trespassing on any vested interests, and with very great benefit to the boys themselves.

Class of
Boys for
School-
home.

The class of boys for whom this provision should be made in the shape of a *School-home*, includes young boys who are not naturally strong, but weakly, and who need care for a year or two at the commencement of their school life before they are able to "rough" it amongst a large number; boys from a hot climate, who cannot bear much exposure for a term or two; boys who *have* a constitutional ailment that demands great care; boys who require extra attention during school life in order to *prevent* the development, owing to an unfavourable family history, of a constitutional complaint; boys who have had a recent severe illness, from which they have recovered, but who still need the care of home-life for a term or two, the parents not wishing them to lose ground at school by being kept away until they can dispense with this additional attention.

Officers of
School-
home.

Such provision as I refer to could be carried out by a carefully selected junior married master; or, still more appropriately, I think, by the medical officer to the school, where he is capable of managing boys, and could be induced to take them, as the boys would then be under constant medical supervision.

Constitution
of School-
home.

The sending of boys to this home should be entirely under the control of the head-master, so that parents

should possess no voice in the matter except through him.

In this way every parent would not be under the impression that his own boy was delicate, and needed extra care.

The fees, again, would naturally make the home prohibitive to any except those who *really* required the additional care. The number should be strictly limited, according to the number in the school, and every reasonable modern sanitary improvement should be provided, so that the boy would live in the highest possible state of health.

Every member of the school-home should be provided with 1000 cubic feet of air space in which to live and sleep; and no house for this purpose should be licensed by the head-master without this essential provision.

By this means house-masters would be relieved of much anxiety about such boys; parents would feel that a great boon had been conferred; and the delicate boys would have a better opportunity of losing their delicacy, and growing into strong men.

PROVISION FOR SICKNESS.

Every boarding-house in a large school should have Sick-room, a *sick-room*, where every boy who is not really ill, and yet not well enough to be at work, should be sent, and remain under the constant supervision of the matron, who should exercise full control, and supervise his diet, to be regulated by the medical officer, until he is again able to go into school. There should also be a night sick-room, in which a boy who is not quite well should sleep, in preference to his dormitory; this room should be reserved solely for this specific purpose.

Should, however, a case of *infectious* illness remain in the sick-room for even a short time—for instance, waiting for the doctor—the room should be thoroughly disinfected in some way before another boy is placed there; and this may be effected by sulphur fumigation, or by setting free nitrous fumes from nitric acid and copper filings, or by liberating chlorine from chloride of lime by vinegar—a very easy and effectual process. The bedding, also, on which the infected boy has slept in the dormitory, should be removed and disinfected, together with all his clothes, and the dormitory itself well flushed with a cross draught of fresh air as long as possible; or, better still, be fumigated as above described.

It should not be forgotten that plenty of sun and fresh air are among the most powerful disinfectants which can be employed.

Should a boy be really *ill* at school, he ought never, in my opinion, to be nursed at his boarding-house; for the proper arrangements cannot be provided there for this purpose. There is too much noise and bustle, and no quiet can be obtained; every one is fully occupied with those who are in health; and his school-fellows, by always wanting to visit him, retard recovery.

Besides this, I think that a skilled nurse alone should look after sickness when boys have to be treated away from home. How parents like to treat their children, when ill at home, is one thing; but how schools should look after them, when they are absent from their friends, is another. There the most perfect arrangements should alone be in force, and the best skilled nurses alone employed, so that everything may be done, from first to last, for speedy and effectual cure. This rule cannot be questioned, and is, I believe, mostly, though not entirely, in force in all great schools. For I regret to say that,

even during the last few months, I have heard of cases of infectious illness being treated in boarding-houses: thus, at one of our greatest schools I knew of seventeen cases of "mumps" being treated in the boys' cubicles amongst the other healthy boys. At another great school cases of "diphtheria," one of which died, were treated in a master's boarding-house. At another school there occurred many cases of "typhoid fever," five of which were treated in a dormitory of a master's boarding-house, and four in the school-house. Moreover, there is one of our most ancient schools which has lately been re-built at a distance from its former foundation, where the governing body have not even seen fit to provide any sick-house of any kind, and where, consequently, all cases of illness, however infectious in character, have to be treated in the master's boarding-house. I refrain from comment on such unjustifiable proceedings.

The best skilled nurse that can be obtained should be Matron. appointed as *matron* to the sanatorium. She should be wholly responsible for the superintendence of all the arrangements for the care and treatment of the pupils during illness. She should be exclusively answerable to the medical officer for the carrying out of every detail in the treatment of the sick, and in the management of the sick-houses. If any fault has to be found by those in authority, the complaint should be made to the medical officer only, and not to the matron who carries out his orders. It is absolutely impossible for any matron to discharge her duty faithfully if she be subject to the head-master, the house-masters, and their wives.

She should have under her the necessary number of nurses and servants according to the size of the sanatorium. When many cases of illness occur, or when the illnesses

are so severe as to entail much night-work, extra nurses can be obtained from some of the excellent nursing institutions found in all large towns, for no fagged nurse can do her duty.

The matron must be not only a highly-skilled sick-nurse, but capable also of managing household affairs; she must, further, be a woman of character, so that she may be able to control those under her care, which is not always an easy matter when boys are convalescent after an illness. For some have high spirits, and delight in mischief; while others have the proverbial ill-temper incidental to recovery, both of which call for the exercise of patience and firmness.

Much tact, again, is required in dealing with parents, masters, and their wives, many of whom are apt to think they know more about sick-nursing and the general treatment of illness than those who have taken years to acquire their requisite skill.

While a pupil is ill, therefore, the matron should recognize no authority but that of the medical officer in charge, and respectfully, but clearly, refuse to follow requests—which should properly and solely be made direct to the doctor—by any one else: otherwise reliance cannot be placed on her by the medical officer who is responsible. The first to upbraid her for any ill-result will be the one who induced her, either from thoughtlessness, or often simply from the love of interference, to deviate from her orders.

Sanatorium. A *sanatorium* or sick-house is essential, and should be provided for every great school, where *all* cases of *illness* and *accidents* should be treated. Here, if it be properly constructed, also, may be admitted the *infectious ailments*, such as typhoid fever, diphtheria, measles, epidemic roseola, mumps, chicken-pox, and whooping-

cough, unless the school has already provided two sick-houses (quite irrespective of separate isolation for scarlet fever), the one for accidents and non-infectious illnesses, the other for the slighter infectious ailments. I think one sanatorium is sufficient, provided it be properly constructed, and there be great care and vigilance on the part of both doctor and nurse.

But it is simply ridiculous for schools to incur the serious expense of providing means for the isolation of infectious illnesses, if parents, masters, and their wives are permitted freely to visit those who are infected. If isolation be not absolutely complete it is worthless. It would be preferable to treat openly all infectious illness as though it were non-infectious, than to provide means for perfect isolation, and foolishly allow *outsiders* to visit *patients*.

The *site* of a school sanatorium should be as near to Site. the school as is prudent; for a sanatorium situated at a distance entails much unnecessary suffering and considerable risk; in fact, far greater risk in removing cases of sickness, than is incurred by having a properly managed house of infectious illness contiguous to the school.

It should be a *detached* building, standing in its own grounds, having no trees or buildings near enough to keep off the sun, and prevent the winds having free access in all directions. Its *wards* should, as far as possible, face due south, or south-east and north-west.

There should be sufficient garden-ground attached to Grounds. enable sick and feeble boys to get fresh air and exercise, as well as space adapted for such games as tennis, croquet, cricket, baseball, and others for the stronger convalescents.

Construction. A very few words must suffice for the purpose of indicating some special points only.

The *foundations* should have a concrete floor throughout. By this I intend that the whole surface of the ground under the building should be covered with an impermeable layer of concrete. In this way only can the "ground air" and moisture, which are such common causes of ill-health, be prevented from exerting their baneful influences.

Walls. The *walls* of the rooms should not be less than fourteen inches in thickness, as a slighter thickness will not keep out the cold or damp. The *inside of the walls* should have rounded corners, and should not be papered, but either painted or covered with silica, which will wash with a disinfectant several times; or still better, the walls should be lined with Keen's or Parian cement, which will wash *ad infinitum*, and to which nothing will adhere. A wainscot is undesirable on account of its affording a lodgment for dust.

Floors. The floors of sick-rooms should be stained and varnished; never washed, but wiped with a damp cloth every day when in use, and polished with beeswax and turpentine once or twice a week. Or they may be ironed with hot paraffin, which renders them impervious; or with Archangel tar, thinned with petroleum.

Drains. If it be important in a boarding-house, as I have striven to prove, to have the drains properly constructed, with the soil-pipe thoroughly ventilated, and all house-drains cut off absolutely from the street-sewer, this course is still more essential in the sick-house; for it is a serious matter to send a boy to a sanatorium for some comparatively trivial ailment, and then to subject him to the

contraction, while there, through faulty drains, of a dangerous disease, such as typhoid fever.

In towns, therefore, all soil-pipes from sick-houses should be cut off from the town-sewer, and in the country earth-closets should be used; or, if a cesspool exists, it ought to be far from the sick-house, on a lower level than the well, and should be treated as though it were a sewer, by disconnecting it from the house.

All rooms provided for sick inmates should allow at Cubic Space. least 1000 cubic feet for each non-infectious case, exclusive of the 800 cubic feet required for the nurse in attendance; but for infectious illness 2000 cubic feet are essential, and even more may be required if the case be severe or malignant, since such cases are generally much mitigated by an abundant supply of fresh air.

The *number of beds* required for a school sanatorium must depend upon many and various elements. One of the chief of these is the *age* of the pupils; for the younger the pupils, the more liable are they to be attacked, and the more serious the illness when attacked, by the various exanthemata. Number
of Beds.

The community at large has derived such incalculable benefit from the care and teaching of the medical profession on this question, that very young children, during their *nursery* and *family* life, at which period the mortality from zymotic diseases used to be very serious, are now largely exempt from their advent during those critical years—to such an extent, indeed, that when they reach *school-life* they are unprotected by having previously had them. The consequence is that, when any infectious illness appears in such a virgin soil as a large assemblage of susceptible adolescents, it spreads to an extent that did not occur twenty years ago, notwithstanding the

greatest care and vigilance. It is therefore incumbent upon school authorities to recognize this feature of modern infectious illnesses, and make suitable provision. The *public* have gained enormously by this knowledge, as shown by the fact that the *mortality* from these diseases is greatest between the ages of one and five; but *schools* have in consequence to deal with an increased *number* of cases of infectious illness, though that is far better than parents having to face a heavy mortality. I would urge doctors and parents to continue to endeavour to protect the little ones by increasing attention to these facts; for every year that a zymotic disease can be postponed in a child's life is not only a gain in reduced mortality, but also in a lessened permanent damage to the constitution, with better health and longer life as the result. And this gain far outweighs the inconvenience and expense to schools, serious as that sometimes is.

The *number of boys* in the school will also occasion a variation in the advent of the illness; as a rule, the larger the number the greater the illness is in proportion.

The illness also will depend largely upon the *situation* of the school, and the *sanitary state* of its buildings and surroundings. To give a general idea, however, as to the number of beds required at school for accidents, and sickness of all kinds, I should think that, where boys *under thirteen* years of age are congregated in large numbers, 20 per cent., and where *over thirteen* years of age, 15 per cent. should be arranged for, if school illnesses are to be efficiently provided for. This means that in a large school every boarding-house of thirty-three boys should be answerable for the provision of five beds in the common sanatorium.

In addition to the *bed* accommodation of school sanatoria, it is essential to provide accommodation for

the *feeding* and *sitting* of *convalescents*. A suite of rooms is also requisite for the *matron*.

Ample accommodation is also necessary for the feeding, sitting, and sleeping of the *temporary staff of nurses* required during the occurrence of acute illness or epidemics, allowing one nurse for every eight beds; and one bed more for a *night nurse*. These nurses' quarters should be made as comfortable as possible, for their hours of work are often prolonged, the strain arduous, and the confinement close. Moreover, unless they are comfortable, the work, often so critical, is apt to be slurred from fatigue, or they may even refuse—not at all an uncommon occurrence—to remain at their post. If the sanatorium be built in separate blocks, as it should be, a nurses' room should be attached to each block and floor, for the purposes of isolation.

Further accommodation is necessary for the required staff of servants, one of whom should be the man, or boy, who manages the disinfecting chamber, cleans boots and windows, looks after the garden, and runs errands.

In the construction of a school sanatorium the prime necessity is the provision of ample accommodation for *individual isolation*. The essential fact may therefore be expressed as the necessity of a sufficient number of rooms, as well as the requisite number of beds.

Number
of Beds
in a Room.

The most *convenient size*, for illness, if nothing else were to be considered, is undoubtedly *one-bedded rooms*; for this arrangement furnishes a large number of separate rooms for quarantine purposes, as is described on p. 373. But the isolation, except in acute illness, becomes tedious to many boys, and makes them unhappy for lack of companionship.

Two-bedded rooms are very comfortable, but moral objections exist to this plan. The tendency in some

schools is, in consequence, to build *large rooms* to hold eight or ten beds. They are, I admit, very comfortable and very convenient in many ways, and the boys like them, as they are cheerful. But they are a mistake, and most unsuitable for a school sanatorium, where rooms for isolation are often imperative, if the doctor is to be placed in a condition for doing the best for each individual and for the whole school.

Where these large rooms of eight or ten beds are in vogue it continually happens that one isolated case of infectious illness may occupy the whole of the eight or ten beds, and that usually when the demand for beds is most acute! On the whole, I would advocate that, in a school sanatorium, most of the rooms should contain only *one bed* for isolation purposes, as well as for cases of severe illness where quiet is indispensable; while the others should not contain more than *three beds*. In this way the most efficient work would be obtained from the arrangements of a sanatorium.

A school sanatorium should, therefore, be constructed on the block system. These blocks can be of two or three detached buildings according to the number of beds required, and to the means of isolation desired.

The plans can be so varied and modified as to provide ample accommodation for every case of illness in schools of any number. Such a building may have either three or four *wings*, each having two or three floors, and each of which can be kept practically separate. Each wing may comprise three, or more, *rooms*, each room one to three *beds*, all to be occupied at the same time or not, according to the nature and severity of the illness. In some schools, as I have stated, as many as seven to ten beds in a room are arranged; this is a mistake: it is not only imperfect in working, but the noise from those who are not ill, or who are convalescent from an illness, must

always be a great disturbance to the sick. One delirious boy, too, would disturb the sleep of, and often terrify, the remaining boys. Each *floor* may be distinct and separate by providing no inside staircase, and making one outside staircase for the first floor, and another for the second floor. Or, the ground and first floors may communicate by an inside, as well as an outside, staircase, while the second floor is kept absolutely distinct by the provision of a separate staircase outside the building.

In such a sanatorium the *ground floor* of one or both blocks may be used for accidents, and for all cases of non-infectious illnesses, such as rheumatism, pneumonia, and severe colds. If all these rooms on the ground floor are provided with "French windows," opening into the garden, each can be used as a separate quarantine room by keeping all the doors locked, and admitting and discharging each suspicious case by the window, by which means no doubtful case would enter the building, but would be kept completely isolated during the hours of doubt. The room should be thoroughly disinfected after the discharge of each case that proved itself infectious, before being again used for any purpose.

The *first floor*, by shutting off each wing from a well-ventilated staircase by double doors, will provide separate houses under the control of one matron, but under the charge of a special nurse for each, and also secure isolation for the *minor* zymotic diseases, such as mumps and measles, without the possibility of one illness spreading to another room.

On the *second floor*, the *major* zymotic diseases, such as scarlet fever and diphtheria, can be completely isolated from all other parts of the house, by having an outside staircase to admit the patients, and a small outside lift for passing up food and other requisites.

The school sanatorium which, as far as I am aware,

at present fulfils the requisite conditions to the greatest extent is the Rugby School sanatorium, drawings of which

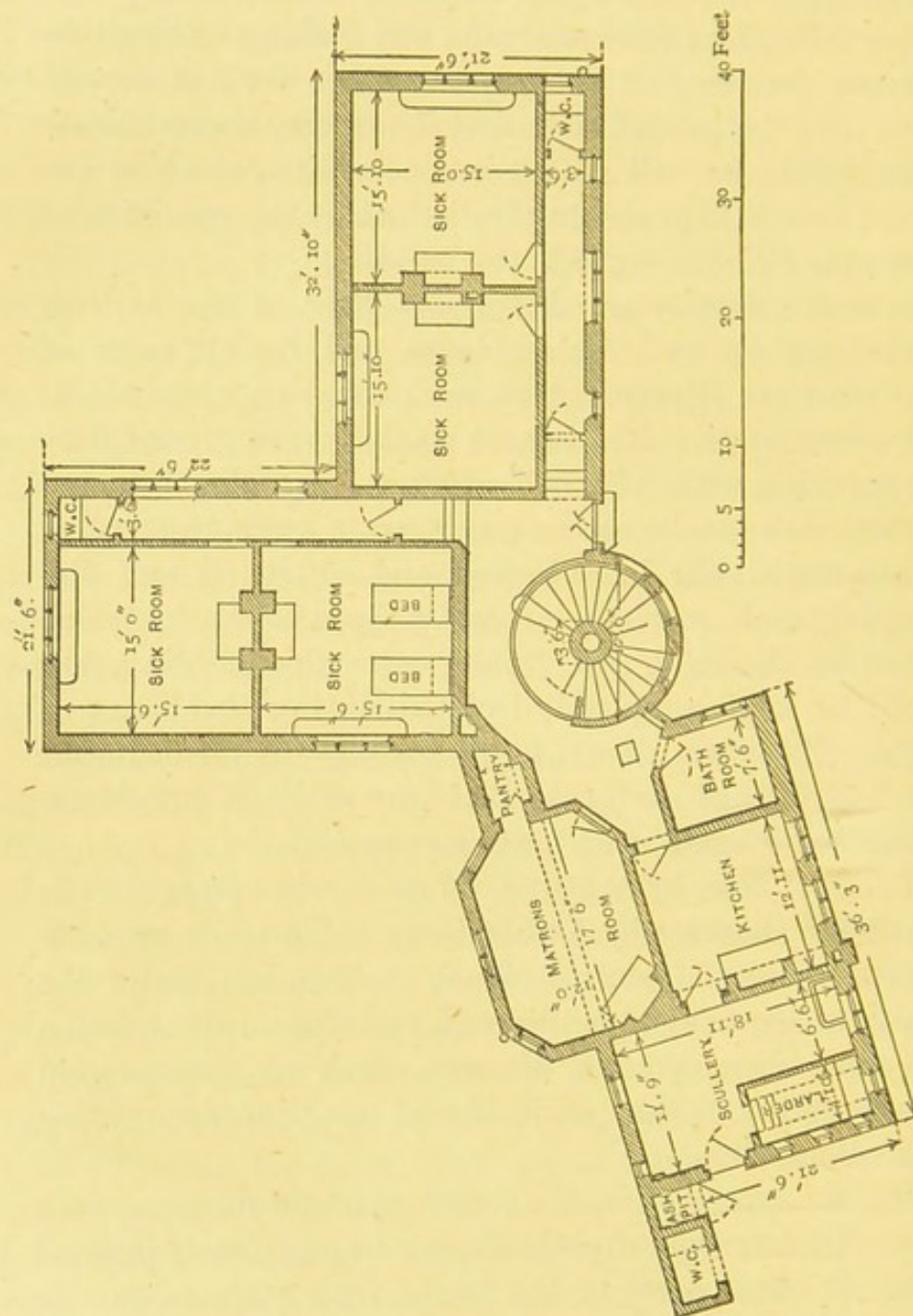


FIG. 24.—THE RUGBY SCHOOL SANATORIUM.* GROUND FLOOR.

* These drawings were kindly lent to me by Mr. Penrose, the architect.

I append. When it is remembered that this was constructed in "the fifties," it reflects great credit upon Rugby and Mr. Penrose, who were greatly in advance of their time.

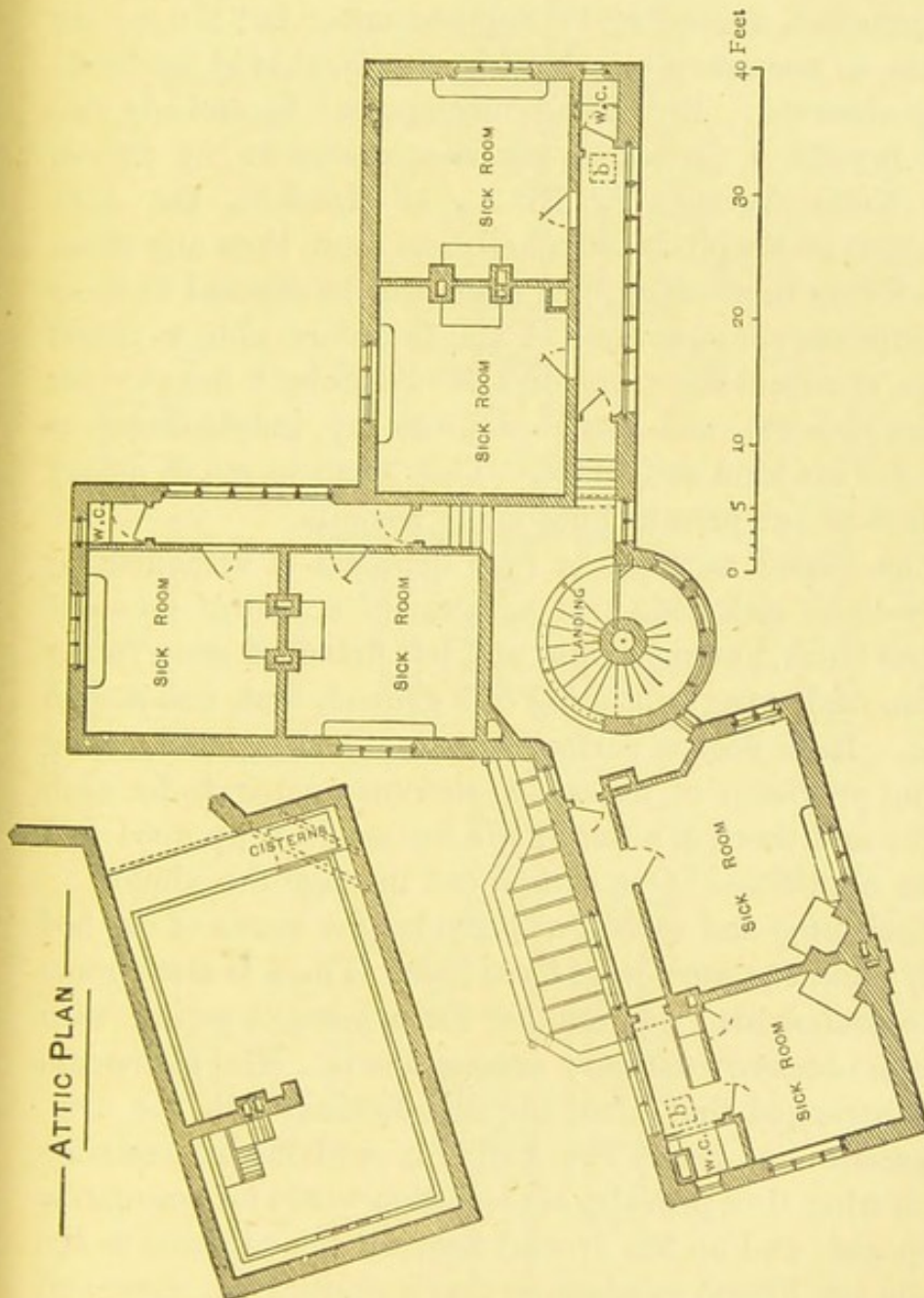


FIG. 25.—THE RUGBY SCHOOL SANATORIUM. FIRST FLOOR.

Size of Rooms = $15.6 \times 15 \times 10.6 = 2441$ c. f., or 1220 c. f. per bed.

But although this is an exceedingly good arrangement, it can be improved to such an extent, with advancing

knowledge, that I have decided to insert some drawings of what I consider to be a *Model Sanatorium* (Fig. 26), so that those about to build may have an appropriate standard. The Model I am presenting can be extended, or curtailed, according to requirements; but the salient points, so necessary to school sanatoria, should be faithfully observed. But, being incompetent to embody this idea myself, I furnished my suggestions to my friend, Mr. Keith Young, F.R.I.B.A., of London, the able architect of hospitals, who has done more than any other man living in showing how much can be effected in their appropriate construction. I am, therefore, able to insert these excellent drawings of a Model School Sanatorium (Figs. 26-28), and would express my indebtedness to him for his kind assistance. They seem to me as nearly perfect as our present knowledge permits.

The model sanatorium now depicted is arranged for forty-eight sick-beds. It consists of a *central administrative* block, having a right and left detached *wing*, facing south, each wing consisting of a ground, first, and second floor. Each *floor* is perfectly distinct and isolated, owing to the provision of an *outside staircase*, separate for each floor; and there is a small *lift* for sending up food and other requisites. One *matron* can manage the whole.

Each *wing* and each *floor* provides *five wards* of *one bed* each; and *one ward* with *three beds*. There is also a room for *convalescents*; and another for a *nurse*, together with all the necessary sanitary arrangements. The bath-room is so arranged that, after the disinfecting bath, the convalescent can leave the building without re-entering. Each wing thus provides six isolation wards for *quarantine* purposes; and on the ground floor all the windows to the wards are *French windows*, so that a suspect can enter and leave a ward without entering the building. Each bed is allotted 2000 cubic feet of air space. The arrangements

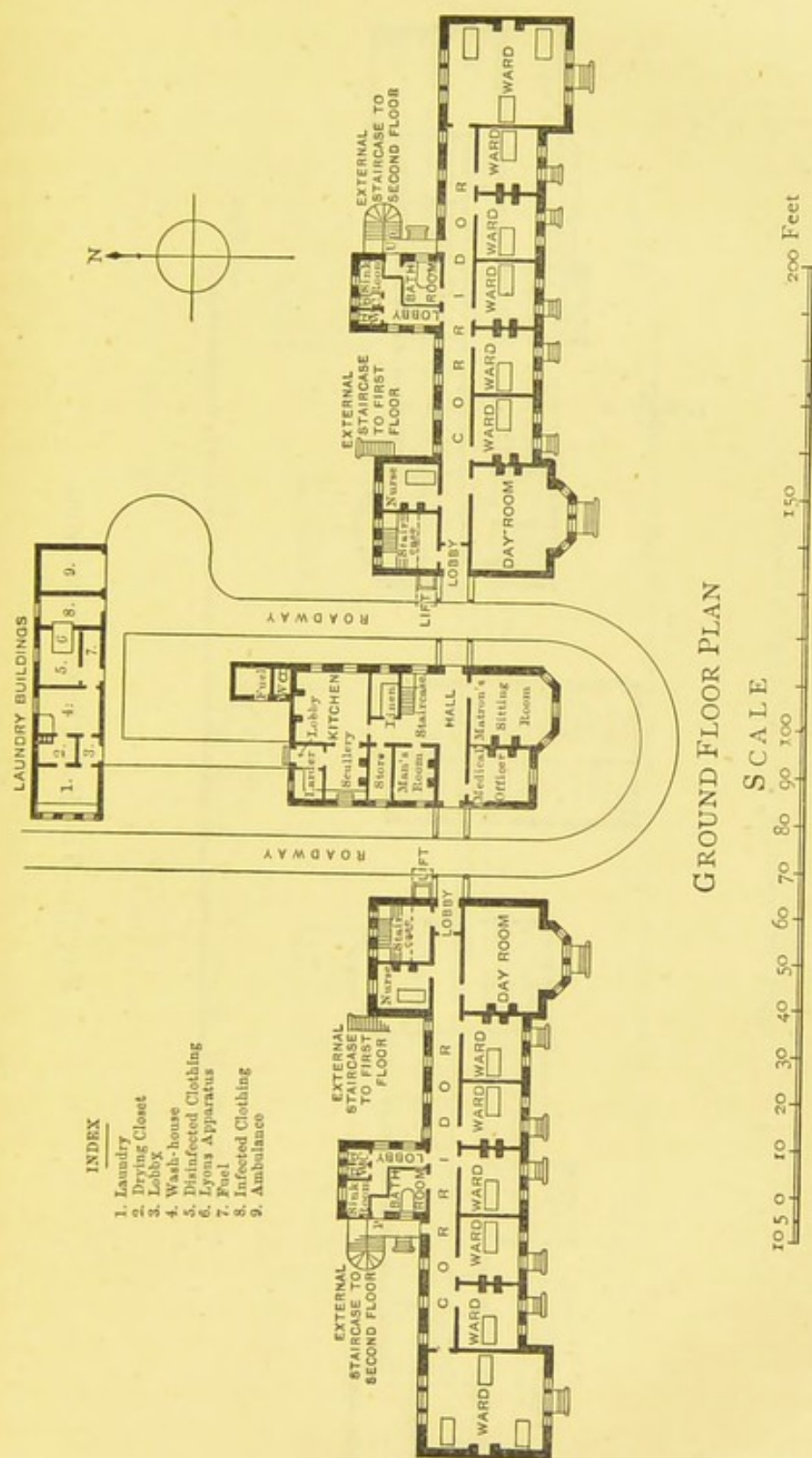


FIG. 26.—The Model School Sanatorium.

SECOND FLOOR PLAN.

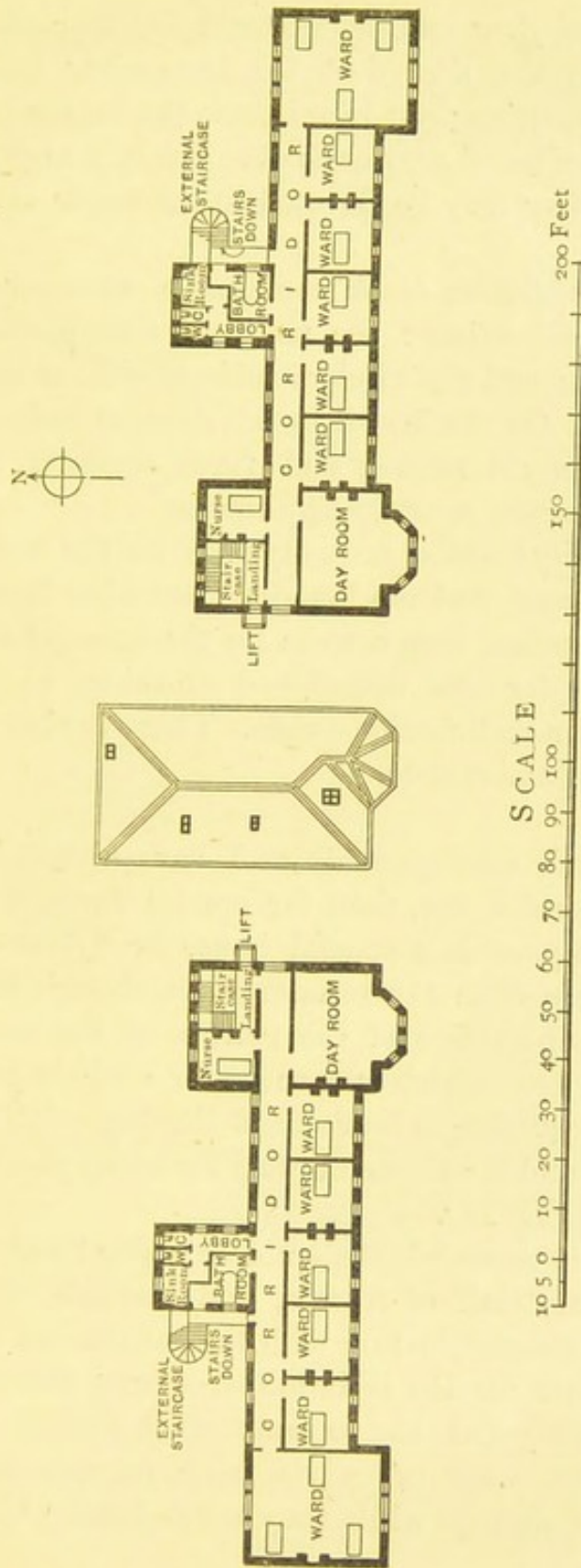


Fig. 28.—The Model School Sanatorium.

on the *ground floor* can be utilized for non-infectious illnesses, and the *first floor* for the *minor* infectious illnesses, such as measles; in this case the bridge between the wings may be of service for the use of a night-nurse. The *second floor* may be devoted to the *major* infectious illnesses.

The *administrative block* contains a consulting-room for the medical officer; the matron's sitting-room; the porter's room; and the kitchen suite, as well as store and linen rooms. On the first floor are situated bedrooms for the matron, night nurses, and three servants, together with the necessary sanitary appliances.

The *Laundry building* not only provides the washhouse, the drying closet, and the laundry; but also Lyon's disinfecting chamber, with a room for the infected clothing, and another for the disinfected clothing, so that no possibility of a re-infection exists. There is also a coach-house for the ambulance.

Fever
Cottage.

Where such arrangements as I have above described cannot be carried out, then for scarlet fever it is safer and wiser to provide a special house or "*fever cottage*," quite separate from the sanatorium, although it may be under the supervision of the matron of the sanatorium when *not* in use—which may occur for a whole year. Our fever cottage at Rugby bears the following relation to the sanatorium, and has answered well for many years without any defect (Fig. 29).

When it is occupied, it should be nursed and managed by a separate staff of nurses, and servants or helpers, holding no communication with the sanatorium staff.

But a house for the isolation of scarlet fever is absolutely useless—and the expense of it should be saved—if masters, masters' wives, and parents are to be allowed to visit boys while they are isolated. Under such

circumstances isolation becomes a pretence, and absolutely valueless. Isolation should either be thorough or disregarded: one weak link, however strong the others may be, renders the chain unserviceable.

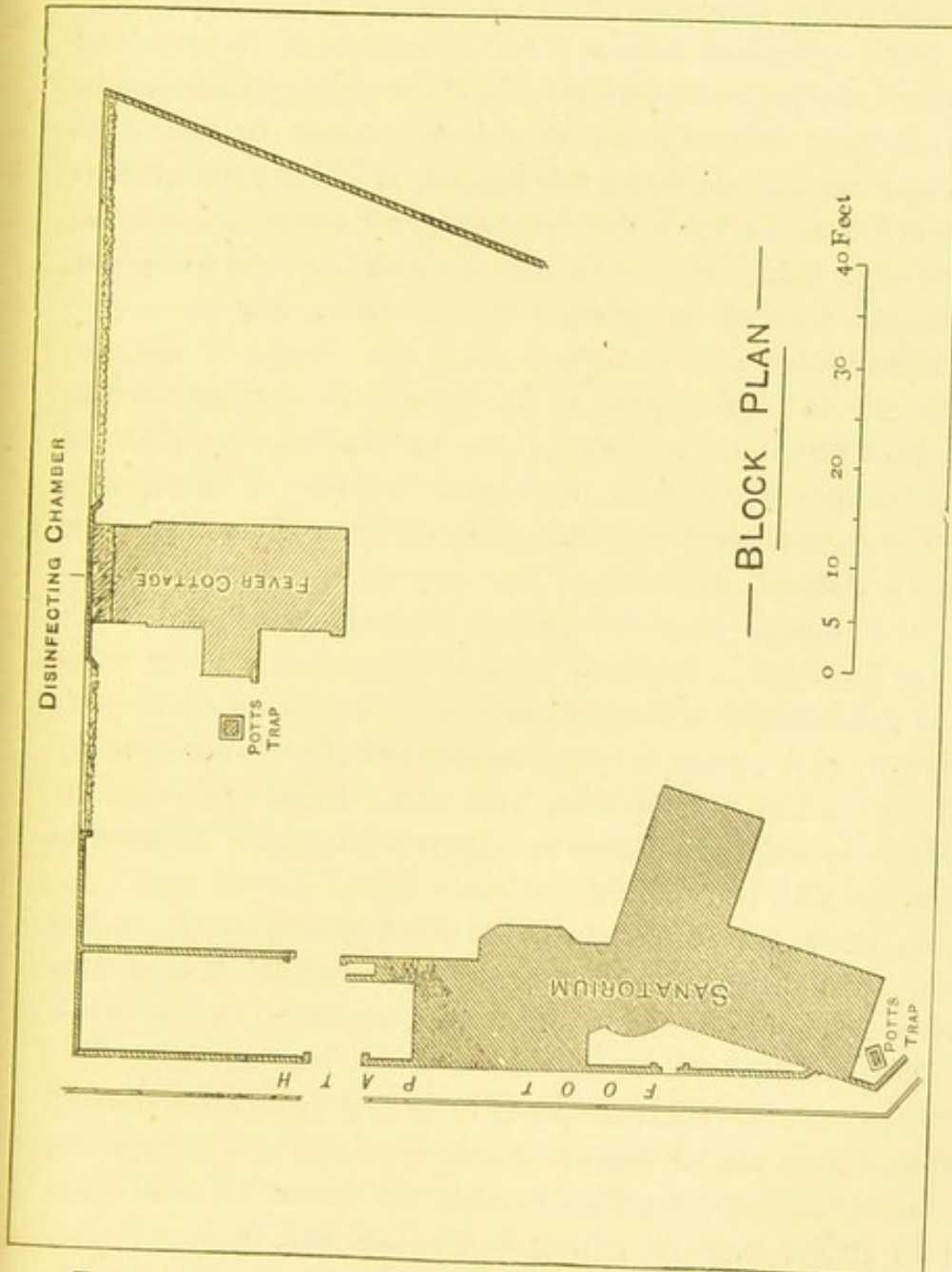


FIG. 29.—FEVER COTTAGE.

In order to enable parents and masters to communicate with their children and pupils who are thus isolated, a

telephone might be established (a speaking-tube would convey infection), the mouthpiece for the use of parents and masters being placed in the matron's room, and under her control; so that it could not be improperly, or unadvisedly, employed.

With reference to the vexed question of the medical officer visiting cases of scarlet fever—and he should be absolutely the only one to do so, unless in a case of dangerous illness, when the parent, or his representative, should remain with the boy, and not come out without thorough disinfection—it may, I think, be safely allowed, without fear of bringing away infection, on these conditions:—

1. Provided the patient be treated in a room having at least 2000 cubic feet of air, and having the door of the room always open night and day into a large, airy, well-lighted, well-warmed, and well-ventilated passage and staircase.

2. Provided also the patient be well greased all over, head included, every day from the fourth day when peeling commences, with carbolic, camphorated, or eucalyptus oil; by this means no desquamated skin is suffered to fly about in the atmosphere, and every fragment is disinfected by the carbolic or eucalyptus oil, which adheres to the bed and body linen.

3. Provided further, all the other secretions from the body are destroyed at once by perchloride of mercury, carbolic acid, chloride of lime, sanitas, creolin, or a mineral acid.

4. Provided all linen, as it is removed, be immediately placed in a pan or bath at the foot of the bed, containing some disinfecting solution, such as corrosive sublimate 1 in 1000; then be wrung out, boiled and washed.

5. Provided the medical officer only see his scarlet-fever cases after he has visited the rest of the school. He

should be careful to touch nothing in the house except with his hands, which should be well washed afterwards in a disinfectant, and the soles of his boots; no other part of his clothes should come in contact with any article in the house. If he prefer a special coat for the purpose, it should be made of brown holland or of mackintosh, and should extend from his neck to his feet, with sleeves close-fitting at the wrist: this coat should not be kept in the building, but out-of-doors under cover, and should be put on before he enters, and taken off out-of-doors.

He should visit only as often as is imperative; and should remain for as short a time as is really necessary for his duty.

After every case of scarlet fever, it is important to disinfect the sanatorium thoroughly—just as though another case would never enter the building—in order that it may not remain a permanent hot-bed of infection.

All these “arrangements for sickness” are not complete—especially for scarlet fever—without ample means being provided for the thorough *quarantine* of doubtful cases; so that, while every case, on the merest suspicion arising, should be at once separated from the school, it may not be transferred to the scarlet-fever wards until all doubt has vanished. I know of no more anxious or arduous duty befalling the physician to a great school than the provision for several doubtful cases of scarlet fever. To leave them in the boarding-house is unwise; to place them in the scarlet-fever wards is wrong; to put them all together in one room is unjustifiable; for if one should prove to be a case of scarlet fever and the others are free, the latter stand the very greatest chance of being infected through exposure. The only proper and safe

Quarantine
Arrange-
ments.

quarantine arrangement accordingly is, to place every doubtful case in a room by itself—using the ordinary sanatorium for this purpose if possible, as I have already explained—for the few hours during which the doubt remains ; then carefully to disinfect every room which has held a true case, and has thus become infected, before introducing another doubtful case.

By this strict isolation, from the beginning, of suspicious cases during their doubtful period, epidemics can be very much reduced, if not actually prevented.

Ambulance
Carriage.

Every public school needs some mode of conveyance for the removal of sick boys, unable, or unfit, to walk, from the boarding-house to the sanatorium ; but especially for infectious cases, for which public conveyances ought never to be used. A properly-constructed ambulance carriage, drawn by a horse, is undoubtedly the best form of conveyance, which can, in the event of necessity, be transferred to the railway, so that a boy can be carried to the door of his home ; inasmuch, however, as it is only seldom required, it may be considered an unnecessary expense. The next best conveyance is a Bath-chair which will shut up, and which can be washed and fumigated inside without damage. A stretcher is also a great convenience for removal in case of accidents.

Games for
Conva-
lescents.

A point not sufficiently considered in schools is the provision of occupation for those who have been ill, and have still to remain in the sick-house. Unless something be done, these boys are sure to get into mischief. Books are always provided ; but boys cannot continue reading all day long, especially when their brains have wasted with their bodies during the illness. Moreover, the books are so inappropriate in their *print*, and in their *contents*, that boys with wasted brains and wasted bodies do not

take an interest in them, on account of the great fatigue involved in understanding them. It seems to be forgotten that those who have been ill have not the same mental power as those who are well and strong; and books are often provided for convalescents which would be exceedingly good for a healthy boy's library, but which are worse than useless for sick boys. For rather than fatigue themselves with reading them, boys provide themselves, or their school-fellows supply them, with light literature and novels, and these often of the worst description—books frequently which no young boy can read without risk of serious damage to his character.

The impressions made upon a boy's imagination, while brain development is in progress, by reading an improper book, are indelible; and the converse is equally true. Hence the importance of only placing appropriate literature in his hands.

What I am anxious to point out is that the fault does not lie with the pupil, whether boy or girl, but with the authorities who do not provide suitable books for those who are, or have been, ill. If this evil is to be avoided, some lighter literature, even children's books, in good large print, must be supplied.

Games of all kinds, both indoor and outdoor, should be arranged for them. Tennis and cricket for fine weather; chess, draughts, backgammon, dominoes, and bagatelle, for bad weather. And if masters' wives—whose kindness and attention I am the first to recognize and appreciate at all times, but especially in sickness—would teach convalescents knitting and netting and crochet, it would make many a weary hour pass more pleasantly, with great benefit to all concerned.

The selfishness of human nature, I regret to say, pervades also the sick-room, and it is not uncommon to see a strong boy occupying the best chair or sofa, leaving the

weak and more sickly school-fellow to shift as best he may.

Sufficient time also must be allowed to convalesce after illness before resuming work.

THE MANAGEMENT OF THE SICK-HOUSES.

The management of the sick-house is a matter of such paramount importance to the welfare of individuals and to the school itself, that it must be very carefully considered in every detail.

All arrangements in this world, of whatever description, when only required occasionally, are apt, unless very great vigilance be exercised, to be out of order just at the very moment when they are wanted for use. School sick-houses—which sometimes are not used at all for several weeks together, especially infectious sick-houses—are a prominent example of this fact. There is only one way of getting over this inconvenience, and that is, to have them in such order that they are always ready.

Warming
and Airing.

To ensure this end, adequate warming and airing are imperative: a certain construction of the *warming apparatus* is necessary; and special arrangements require to be made and rigidly enforced by the constant personal supervision of the medical officer, on whom the undivided responsibility should rest for carrying out every detail of the working. It is useless, and unreasonable, even to expect any servant to keep several fires alight in an unused house every day.

All sick-houses, of whatever description, should be provided with proper means for being constantly kept warmed and aired, with the least possible trouble, either

by hot-water pipes throughout, hot-air flues, or calorogens; besides having open fireplaces in all rooms for fires when they are occupied. The whole house can thus be always aired and warmed by keeping up one good fire when the house is not in use; this fire should be always burning in damp weather, and lighted every other day in fine bright weather, except in summer, when it should be lighted on every day that is damp or without sun. On every suitable day windows should be open throughout the house, so that the whole house may be well-aired and purified. Every now and then the water-closets and sinks should be inspected, and flushed when the house is not in use, though when the house-drains are properly cut off from the sewer, as they should always be, this is not of such paramount importance, as no sewer gas can then enter the house.

I have many beds under my care, and so completely in working order are all arrangements that, from the day the boys return to school to the day they leave for the vacation, I can fill up any and every bed at any given moment without any other preparation than making-up the bed or beds, and setting light to the fire in each room as required. By hot-water pipes throughout both sick-houses, the *rooms* are constantly aired and warmed, and the mattresses, blankets, and pillows are also kept aired by being placed against the hot-water pipes, or by very large hot-water tins being folded within them for twenty-four hours each, in rotation. By thus keeping sick-houses always in perfect working order, they can be used in sickness with impunity, and by no other means can they be safely occupied when sickness, as is generally the case, occurs suddenly.

It is indefensible to place a case of illness or fever in a bed that is not well-aired, or in a room which is unwarmed. Nor is it enough that a fire be lighted, in a

room previously shut up, immediately before the reception of the patient. The result of this is that the warmed air condenses on the cold walls and makes them reek. I do not think it possible to conceive a more deleterious condition for a recent acute fever case to be placed in, than that of cold damp walls or a damp bed. Yet this happened in a well-known case, which was brought to trial, where death had resulted.

I have laid particular stress upon the importance of being thus ready for sickness in schools, which is usually more or less intermittent in character, because, as a rule, sufficient attention is not directed to the question, and frequently preparations are not made, nay, scarcely even thought of, until the illness actually occurs. This, in my opinion, is altogether too late: constant readiness for sickness of all sorts is needed, if our schools are to be kept thoroughly healthy.

Ventilation. Besides this space, thorough ventilation must be given free from draught. As a rule, the windows in the sick-room ought not to be opened during sickness, but the inlet for fresh air—which should be constant—should be through the open door into extensive and well-ventilated passages; by this means the fresh air enters the room indirectly, instead of directly, and the patient is then less liable to draught than would be the case if the window opened directly on to him. Not only does a plentiful supply of fresh air benefit the individual, but in infectious illness too much stress cannot be laid on its importance to the community; the poisonous element by such provision is more rapidly destroyed, and is never in a concentrated form.

Temperature. The temperature of the rooms should neither be cold nor hot; as a rule 60° Fahr. is about the average; though

sometimes a hotter, sometimes a cooler, temperature is beneficial, according to the character of the illness.

Convalescents from any illness always need artificial warmth in cold weather ; and even then the temperature of the body is generally subnormal, varying from 95·5 to 97·5 Fahr.

The furniture in sick-rooms should be restricted to Furniture. what is really necessary for comfort and convenience, and on no account should carpets be allowed ; mats, however, may be used, the best being those made of cork, which will wash and are warm to the feet.

In all infectious illness—especially scarlet fever—if a Succession of cases occur, and the same beds and the of Cases. same rooms have to be used again, *a second case should on no account be put in the same room, or on the same mattress, or between the same blankets, until thorough disinfection has taken place.* It is an infringement of this rule, I think, that accounts for the later cases being often more severe than the earlier ones ; the rule, therefore, ought to be very closely observed, under the personal superintendence of the medical officer.

The washing of the soiled linen of sick-houses should Sick-house Laundry. be carried out on the premises, if possible, so as to avoid the chance of spreading infectious illness. Where this cannot be done, a laundry should be found where no other washing is taken in. On no account should any of the linen from the sick-houses be sent to the laundry where the washing from the boarding-houses is done. Of course, *theoretically*, all the washing of clothes in accidents and non-infectious illnesses could be safely done at the common laundry ; but, *practically*, there will always be the possibility of a mishap at some critical moment, and the infected linen will be sent where it should not

go. The only safe rule, therefore, is a separate washing establishment.

Books. In the sick-house of a school all kinds of infectious cases are received from time to time, and it is manifest that, in the provision of books for sick boys, some arrangement must be enforced to prevent one kind of infectious illness being transferred to the subject of another kind through their agency.

To carry out this important principle, one of two methods must be in force:—

1. Either every book used during an infectious illness must be burnt immediately the illness is over, for it is impossible to disinfect them, unless every page is separately treated; if this be not done the next reader will in all probability catch the complaint. The plan, however, of burning such books is very expensive and unnecessary.

2. Or the sufferers from each infectious illness must be provided with their own books for use only during the illness. This will entail endless trouble, confusion, and mischief, unless a certain plan is in force, and then it becomes simple enough. Hence I advocate the following scheme.

The plan which I myself adopt is to paste a band of coloured paper, two inches wide, round the back and over both the covers, so that it is plainly visible, as the main feature of the outside of the book, whichever way the book lies: thus, scarlet for scarlet fever; yellow for chicken-pox; blue for measles; green for roseola; white for whooping-cough; black for small-pox; brown for mumps, and so on. Then each parcel of books is kept in a large box in a well-ventilated box-room.

The Treat-
ment of the
Sick at
School.

It is imperative that the treatment of the sick at school should be solely under the control of the medical

officer in charge, subject, as I have already said, to consultations whenever they are deemed necessary.

1. *Food*.—During the time a boy is in the sanatorium on account of illness or accident, he should have no food supplied to him except through the medical officer, and nothing but what the doctor orders or sanctions should be given, from whatever source it may be sent.

If it be thought that the medical officer fails to provide a sufficient variety of food, or insufficiently tasty articles for those who are bad feeders during or after illness, the question should be openly discussed with him. He can then explain, if needful, the reason of the course he is pursuing. It seems frequently to be forgotten that it is clearly to the interest of the doctor to cure the illness, and to strengthen the boy for his school-work as quickly as possible, and that he can have no other desire than the patient's welfare, when he does not pay for the food, but only orders it at the expense of others.

I know that parents will often grumble; but this is not surprising to any one who knows anything about the feeding of sick boys, when the unwise articles of food are seen which parents sometimes send.

I know, also, that boys, accustomed to continual self-indulgence in eating and drinking, generally find fault with sick-fare; but this is not to be wondered at. Who does relish sick-fare? or, who likes sickness itself? It is not a question of what boys approve of when ill, but what constitutes the best mode of removing the illness as soon as possible, without permanent ill effects. The young do not realize this, and, naturally, dislike the ordeal. I remember the following amusing incident, which happened to me some years ago. I had several boys ill at the same time with one of the mild infectious ailments, for which they were kept in bed, and allowed a milk and farinaceous diet only, for the first few days.

Amongst these boys was an elder one—a “swell.” He found fault with his fare, much to the amusement, and with the silent sympathy too, I have no doubt, of all the rest. I explained to my patient that it could be no pleasure to me to deny him anything, that I did not pay for his food, that I only withheld some foods from him for his own good and to prevent a greater illness; that, in such illnesses, the doctor is a “pilot,” who, knowing the “sailing,” strives to steer clear of “rocks” and “sandbanks.” He was, however, implacable, and my explanation did not satisfy him. So, as he had arrived at the years of discretion, I promised him that he should have for his dinner anything he liked to order; and I requested the nurse, who was standing at my side, very much amused, to provide him with whatever he pleased: I forget now what he chose. But the next day, and for several days, he was very poorly and miserable, and scarcely able to take even what I desired to give him. He expressed regret that he had been so unwise, and assured me that he felt I had only his welfare at heart when I restricted his diet. His smaller school-fellows, convalescent and enjoying their food many days before he himself was able to do so, quietly enjoyed the fun of seeing the reward of unreasonable discontent.

For a master in superior circumstances to send delicacies to individual boys, when they are ill at the sanatorium, is a doubly injudicious practice. It wrongs all his colleagues: those who conscientiously will not interfere in illness, and those who are not so well off; and it does the recipient no good. However, if masters or parents will send eatables to the sanatorium, even to convalescents, the course to be pursued by the medical officer is perfectly clear—they should be divided amongst all the school-fellows who are in the sanatorium at the time. This is the only way to prevent jealousy arising, owing to one

boy having something to eat different from another who is, or has been, ill with the same illness; an unwholesome rivalry amongst house-masters themselves will thus be avoided which can only lead to invidious distinctions.

2. *Medicine*.—The requisite medicinal treatment of sick boys at school, still more of those in the sanatorium, should be exclusively in the hands of the medical officer. At present this is not the case; and, as far as I can gather, is very far from it: I suppose because the love of amateur doctoring is inherent in human nature. Those who attempt quack doctoring forget, or never realize, that a remedy, when inappropriately given, may not only do no good, but even, as is only too often the case, positive mischief. Beyond and above this, however, the greatest harm is effected through the unfortunate patient being prevented the use of the appropriate remedies of the physician until the amateur fails or becomes frightened, and the disease has had time to develop thoroughly, so that relief and cure are rendered more difficult.

Not long ago I heard of a head-master's wife—with the best intention, no doubt—administering belladonna wholesale to healthy boys every morning as a prophylactic against scarlet fever, which was rife at the time, in the belief, I suppose, that a drug which produces redness of the skin, when taken in poisonous doses, will prevent the advent of a disease, one of whose characteristics is that it is accompanied by a similar redness—a theory the futility of which was proved by the late Dr. Warburton Begbie, after a most careful and thorough investigation.

I have heard of another head-master's wife having prescribed, and sent, a remedy for a boy in a sick-house, while he was already under the treatment of the medical officer. When the medical officer in charge accidentally discovered this he had to return the remedy to the lady.

It seems to me that the time has arrived for the

absolute cessation of this amateur doctoring of other people's children, who are not in a position to object; for it can only occasion needless discomfort and suffering, without compensating gain.

3. *Report of sickness to parent.*—When boys are ill, and lodged in the sick-house—as they should always be—a report should be sent to the parents: and the proper person to forward the report—through the house-master—is the medical officer in charge. Parents would then hear of the illness first-hand, and thus a more accurate account of the illness itself, with the daily condition of the patient, would be furnished, which would instil confidence in the mind of the parent, and obviate needless alarm, whether such alarm had been caused by ignorance of the nature of the malady, or on account of the actual state of the patient in consequence of insufficient information, or through the incapacity of a non-medical authority to convey an accurate idea of the importance, or the trivial nature, of the attack.

Where the medical officer unwisely sends an unintelligible account, the parents can ask their own medical adviser to interpret the nature of the illness and the state of their child.

INFECTIOUS ILLNESS.

The subject of infectious illness at school is of the first importance, especially where the younger boys are being educated.

Infectious diseases cause about one-seventh of the deaths which occur in Great Britain. Nevertheless, they are to a large extent preventible; that is, may be kept at bay by means of appropriate sanitary surroundings; and may be hindered from extending, when actually imported into a community, by measures of isolation and disinfection.

A trivial infectious illness assumes importance in schools in proportion to the number of persons it obtains opportunity for infecting. Such illnesses are always a cause of anxiety, and often entail a serious interruption to work. As a class they are fostered where organic matters, inclusive of animal exhalations, are undergoing decomposition—in fact, these conditions form a fertile soil in which infection can flourish. They vary in amount and in frequency to an enormous extent in different schools. In some they are encouraged, owing to a damp situation causing an absence of vigorous health; in others, by reason of facilities for infection, owing to the schools being situated in towns; in another, again, in consequence of the boys being crowded together in boarding-houses by hundreds instead of by tens; in others on account of their faulty sanitary arrangements; or, by reason of an impure water supply. And when set going in a school, illness of this class is multiplied by imperfect medical arrangements; infected boys are not immediately and completely isolated from the rest; or boys suffering from many of the infectious illnesses are allowed to remain and be treated in the boarding-house, with those who are not infected. Nothing short of a *government inspection* of our high-grade schools will ever make them approximate to an ideal condition; and even this plan will be insufficient without an *annual publication* of all cases of infectious illness occurring at school, so that the public may protect themselves and their children. At the bare suggestion of such an annual return, I seem to see this and that great school attending to its sanitary arrangements long before the first return has to be furnished—rectifying everything that could cause illness, or even deteriorate general health, so as to ensure the highest state of vigour—in order to obtain as clean a bill of health as possible. Obligation to make such return would prevent over-crowding, cure

faulty drains, remove refuse heaps, and provide a good water supply, more effectually than any other scheme that could be devised. For the school that habitually showed a large percentage of infectious illness would soon lose its pupils. It would have either to remedy its defects, or become defunct through inherent unadaptiveness. We should not then hear of schools which number their infectious cases by hundreds, or of another which managed to exhibit diphtheria at the rate of nearly a hundred cases in a year, ending fatally in two cases—a master and a boy.

Schools will never be exempt from infectious illnesses—unless we are able hereafter to prevent them by protective inoculations—but they should be under some effective control. At the present time some schools are, I think, criminally careless in this respect.

What is infection? It is the communication of disease from one person to another, by means of a material poison, capable of reproduction and multiplication in the system. Sir John Simon well expresses it when he said that it depended upon “some rapidly self-multiplying form of alien life.”

Parkes quotes three views of infection or contagion—

1. The particles are of animal origin, born and growing in the body; minute portions of bioplasm or protoplasm, upon which all germination, growth, and multiplication depend. These fomites are independent organisms, possessing power of movement, and growing and dying. Each kind is capable of manifesting only its own specific action—*i.e.* originating its own specific disease, as scarlet fever or measles (Beale).

2. The particles are of a fungoid nature, and grow in the body, after being introduced from without.

3. The particles of contagia are of the nature of the

Schizomycetes—*i.e.* members of the lowest stratum of life at present known in the animate world. They are variously called Bacteria, Bacilli, Microzymes, Vibrios, Spirilla, Monads.

That these particles are *intimately concerned* in some way in many diseases is now beyond dispute. The conclusion that they constitute the *actual cause* of infectious diseases generally is within a measurable distance of being proved an indubitable fact.

Lister showed that such particles are concerned in septicæmia. A bacillus was next discovered for splenic apoplexy. And we are now hearing of microbes special to tuberculosis, enteric fever, scarlatina, diphtheria, tetanus, leprosy, influenza, etc., and in due time we may expect identification of the microbes of small-pox, of measles, of whooping-cough, and others which still remain for demonstration.

The next question is, Can these infectious illnesses in schools be prevented or diminished?

There is no doubt on this point! By residence on a healthy site, by cleanliness in the person and surroundings, by regular daily exercise, by full, but not excessive, mental work, and by abstention from articles of food which disagree, the highest state of health can be secured. In this way the germs of lower life causative of disease—really parasites—are made to find greater difficulty in growth and multiplication in the human body, it being a well-known law that most parasites exert their sway with greatest power on animal and vegetable life whose vitality is diminished. The greater the vigour of the animal or plant, the less the chance for the parasite. To sum up, I would repeat that putrefactive and disease germs, as Sir John Simon states, show little power of active diffusion in dry air, whereas in humid air, and in low-lying ill-ventilated localities, they abound not only

in the atmosphere, but also in the soil and in the ground water.

What can be done in one of our great schools in the prevention of infectious illnesses is shown by the following table.

TABLE OF INFECTIOUS ILLNESS IN RUGBY SCHOOL
FROM APRIL, 1871, TO NOVEMBER, 1893,
WITH AN AVERAGE OF 400 BOARDERS.

Name of illness.	Total number of cases.	Average number of cases per annum.	Per cent. per annum.
Influenza (in 4 years) ...	317	13·8	3·45
Measles	317	13·8	3·45
Epidemic Roseola or Rötheln	275	12·0	3·0
Mumps	196	8·52	2·13
Chicken-pox	71	3·08	0·77
Scarlatina	59	2·56	0·64
Whooping-cough	18	·78	0·19
Ringworm	18	·78	·19
Typhoid fever	4	·17	·04
Diphtheria	3	·13	·03
Erysipelas of face and head	1	·04	·01
Small-pox	0	·00	·00
Total of all cases of Infectious Illness among 400 boys in nearly 23 years	1208	52·52	13·13

This table gives promise that the "infectious diseases" of the young, even when they are congregated together in large numbers, may—by studying their "life history," by the advancement of sanitary science, by adequate provision for the immediate isolation of every case, and by placing in quarantine every suspicious case—be to a large extent held in check. It proves, moreover, that small-pox may cease to be a disease of school life by efficient re-vaccination. It further shows that in this

school "filth diseases," such as typhoid fever, depending mostly upon unsanitary conditions of life, such as impure water, imperfect drains, and decomposing refuse heaps, have been all but exterminated.

It also points to the fact that, with the exception of influenza, "epidemic roseola" is the most infectious disease of all; for, although measles shows an actual larger number of cases, yet if every case of catarrh could be isolated for four days, which is impossible, as no school could then continue working, it could be more readily held in check than epidemic roseola, which, even with instant isolation, spreads extensively whenever it arises.

If a similar record were taken of zymotic diseases occurring amongst an equal number of young people of the same ages, and distributed over an equal number of years, living in families, instead of being congregated in a school, I doubt very much whether as clean a bill of health as this would be found, which has been secured by the excellence of the means of isolation and the completeness of the medical organization.

In a few years I trust that all schools will be less pestered by these internal parasitic diseases, for Pasteur has already shown that by vaccination with *modified* micro-organisms of chicken-cholera, of anthrax, and of rabies, immunity is obtained from the action of *unmodified* micro-organisms.

We are, however, interested in a wider question, and have to inquire whether all infectious diseases are the result of bacteria, and if so, whether such specific preventives can be adopted for them all, as is the case in small-pox, malignant charbon, chicken-cholera, and certain other diseases.

It is impossible to discuss this question here. I would only, in a word or two, remind my readers what

vaccination has done in the case of small-pox: and earnestly hope and believe that the same beneficial results will soon be effected in the case of all other zymotic diseases.

THE CAUSE AND PREVENTION OF INFECTIOUS ILLNESS ARISING WHILE AT SCHOOL.

Infectious Illness at School may arise from various sources, some of which I proceed to enumerate, with their remedy:—

SOURCE.	PREVENTION.
1. From the <i>town</i> and neighbourhood where cases already exist.	1. Liberty, during play hours, is a rule at all public schools; but while there are "out of bounds" districts, the town is generally not forbidden. I would not lightly advise any infringement of this wholesome liberty, so valuable a condition of healthy life. Nevertheless, it is a constant source of infectious illness; and whenever a town epidemic prevailed, it would be sufficient to acquaint the boys with it, as they would keep away without the necessity of putting the town "out of bounds": boys may usually be trusted to avoid a known source of infection.
2. From <i>day scholars</i> often bringing infectious illness into school from infected homes.	2. As the system of day scholars cannot be abolished, school authorities should encourage the greatest openness in such matters from parents, and should be always on the alert, and equally open themselves in return, which is not the case generally at the present time.
3. From infectious illness occurring	3. Such cases of illness in masters' or doctors' families should be most

SOURCE.

among masters' or medical officers' children.

PREVENTION.

strictly isolated; or, better still, sent into the sanatorium or fever cottage, as if they were pupils in the school itself; otherwise infection may be introduced amongst the boys of a house or form. Masters' and doctors' houses should be above suspicion.

- | | |
|---|---|
| <p>4. From the <i>laundry</i>—
a constant source of anxiety and doubt.</p> <p>5. From the <i>dairy</i>.</p> <p>6. From the <i>sewers</i>.</p> <p>7. From <i>cesspools</i>, one of the most fertile sources, and often causing the most dangerous illnesses.</p> <p>8. From <i>impure water</i>, especially when</p> | <p>4. Where possible, schools should have their own laundry, as many have already; this is the only way to prevent infection from this source.</p> <p>5. Every great school should have its own dairy; or be supplied with milk from <i>one</i> reliable source, which should be under the supervision of the medical officer.</p> <p>6. The only security against this source of illness is to cut off the house-drains absolutely from the town-sewer, as I have advised; to ventilate the soil-pipe; and to see that the town-sewer is thoroughly ventilated and flushed periodically. Parents should make these necessary inquiries themselves, and should not leave them to chance.</p> <p>7. Earth-closets should be employed in the place of water-closets draining to cesspools. If cesspools be used at all, there should be no possibility of their overflowing into a well; they should be cut off from the house-drains and themselves well ventilated.</p> <p>8. No well should be used in a town; wells in the country should be so</p> |
|---|---|

SOURCE.	PREVENTION.
contaminated with sewage.	placed and constructed that no water from the surface or from the superficial layer of the soil can enter them. All water should be properly filtered.
9. From <i>railway journeys</i> to neighbouring towns for various purposes.	9. These journeys, as far as possible, should be forbidden, as they are a frequent source of infectious illness in a school: for other school reasons they should be reduced to a minimum, if allowed at all.
10. From "exeats."	10. Exeats should be abolished in all schools, now that "terms" exist instead of "half-years"; not a good word can be said for these relics of the past.

THE PREVENTION OF EPIDEMICS.

Epidemics at all times, and under all circumstances, are of serious moment to communities; but in no communities are they more unfortunate than in schools—unless it be in the case of very young children in the nursery, since their mortality is so much greater. Their injurious effects manifest themselves in schools in various ways:—

Epidemics
cause Injury.

1. Owing to the number of individuals who are unprotected at the school age—larger now than formerly, on account of greater individual family care—zymotic diseases find in schools fitting subjects for attack in large numbers.

2. School epidemics are accountable for much loss of time in school-work, and in play, and thus not only impede education, but also growth and development at a critical age.

The absence from work on account of sickness, too, is sometimes very serious to individuals; even causing the loss of a scholarship, and thus sometimes blighting a university career through failure to gain the money value of the scholarship.

3. Sometimes infectious disease damages a child for life, on account of the severity of the illness, or its sequelæ.

4. Owing to a period of prolonged ill-health, subsequent to the illness, some of these maladies are apt to furnish a fitting soil for the advent of other and more fatal diseases.

5. Occasionally epidemics even cost the sacrifice of life by the severity of the illness, or through the poorness, or peculiarity, of the constitution attacked.

6. The expense involved in the treatment of epidemics must always be heavy, for doctoring, nursing, maintenance, the provision of expensive arrangements for isolation, and for subsequent disinfection.

7. They may make even an old, valued, and well-established school totter to its foundation, if they be severe or frequent.

8. They sever boys from their friends and school-fellows at a critical time of life, by the solitary confinement necessary for their limitation.

It is thus obvious that infectious diseases are most virulent enemies to schools. It is, therefore, incumbent upon all who are interested in schools to assist in their prevention or amelioration.

Infectious diseases are, however, so treacherous in their attack, and so widely disseminated, that they defy the most patient watchfulness, and thus continuously cause endless trouble and anxiety.

In order to assist in their prevention, certain expert knowledge is a *sine quâ non*; knowledge which can, indeed, be supplemented by books containing records of the

experience of other observers; but which must in the main be personally *obtained* from long experience in watching the ways of minute germ-life, and interpreting their results.

Natural
History of
Zymotic
Diseases.

I. *A knowledge of the natural history of zymotic diseases is imperative.* Without acquaintance with the natural history of each disease, and in the absence of accurate interpretation of the facts, no advancement is possible.

For the minute seeds, on which this class of disease depends, possess their own seasons of growth and development exactly as other vegetable seeds. And although individual seeds may grow out of season, and thus keep a disease alive, yet a main crop, in the form of an epidemic, will only develop in its appropriate season of the year, and only then when other exceptional (and not yet fully understood) conditions are favourable, in exactly the same way as the gardener speaks of a good plum year, or a good apple year.

Another fact to be borne in mind is, that each disease has apparently its own seed, producing a result *sui generis*. But it is a curious fact, at present unexplainable, that the growth of some germs in the body seems to provide an alteration in soil, so as to facilitate the immediate fertilization and growth of the germs of other diseases. For example, the concurrence or sequence of measles and whooping-cough, and of scarlet fever and diphtheria is well known; and recently I have observed the marked influence which influenza has had on the concurrent, or subsequent, development of influenza and epidemic roseola, and of influenza and mumps, the latter followed by the frequent occurrence of orchitis—a conjunction I had not seen for years, in fact, not since I discovered that the orchitis of mumps always appeared

on the *eighth day*, and never if the invalid was detained in bed over that day.

In order to show by facts, which speak louder than arguments, that the various zymotic diseases have their own seasons of normal fertilization, I have analyzed the various diseases of this class which have occurred at Rugby School during my tenure of office, and which I have recorded on Table I. (p. 396).

The value of this table lies in the fact that it is a record of the zymotic diseases of 400 young people, varying in age from fourteen to nineteen years, of a most susceptible age, congregated together, and living seemingly under exactly the same conditions year after year. It shows, with complete clearness, that the *minor* zymotic diseases of schools, such as measles and rose-rash, occur almost exclusively in the first seven *months* of the year, and that consequently they are spring and summer diseases. There is one error in my record of scarlet fever, and I have purposely left it standing, which I shall point out presently, and which renders the table still more remarkable.

In Table II. (p. 397) I have analyzed the same zymotic diseases of Rugby School *year by year*, instead of by months. And it shows, as I have already pointed out, on p. 359—although I had not then analyzed the figures—that, notwithstanding the greatest care in instant isolation, and in spite of increased power of diagnosis owing to so many years' experience, infectious diseases in schools are on the increase on account of the much greater knowledge and care expended in the protection of children during their nursery and family life.

Equally remarkable are the following additional records, Charts I. and II. (p. 399), which are of even greater moment to schools by reason of the increased severity of the diseases, which entails an augmented mortality.

I.—TABLE SHOWING THE SEASONS OF THE YEAR IN WHICH INFECTIOUS ILLNESS HAS OCCURRED
AT RUGBY SCHOOL FROM APRIL, 1871, TO NOVEMBER, 1893.

Name of Disease.	Number of cases occurring during the month of												
	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sep.	Oct.	Nov.	Dec.	Total.
Influenza	34	68	42	*	13	55	101	*	*	4	†	†	317
Measles ...	4	119	10	1	47	45	91	—	—	—	—	—	317
Epidemic Roseola	—	8	98	26	30	76	33	—	1	1	—	2	275
Mumps ...	4	29	67	10	7	13	37	—	—	3	15	11	196
Chicken-pox	1	6	19	1	3	2	—	—	—	5	20	14	71
Scarlet Fever	—	10	9	5	5	8	10	—	1	—	3	8	59
Whooping-cough	—	2	2	—	1	5	8	—	—	—	—	—	18
Ringworm	—	4	3	—	2	4	—	—	—	1	2	2	18
Typhoid Fever	—	1	—	—	—	—	—	—	—	1	1	1	4
Diphtheria	—	—	—	—	1	1	—	—	1	—	—	—	3
Erysipelas of face and head	—	—	—	1	—	—	—	—	—	—	—	—	1
Small-pox	—	—	—	—	—	—	—	—	—	—	—	—	0
Totals	43	247	250	44	109	209	280	—	3	15	41	38	1279

* Vacation.

† In 1893 some scattered cases occurred too late for printing.

II.—TABLE SHOWING YEAR BY YEAR THE ATTACKS OF INFECTIOUS ILLNESSES OCCURRING AT RUGBY SCHOOL, FROM APRIL, 1871, TO NOVEMBER, 1893.

Disease.	Number of cases occurring during the year																							
	1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	Total.
Influenza ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	65	89	73	90	317
Measles ...	—	30	—	26	5	—	6	—	—	14	—	71	—	45	—	—	—	69	—	12	47	6	—	317
Epidemic Roseola	1	—	—	7	—	2	59	26	—	—	—	7	30	1	—	—	65	—	—	—	—	54	9	275
Mumps ...	—	26	21	—	30	—	2	11	—	8	—	1	—	11	3	2	—	24	—	—	2	4	51	196
Chicken-pox ...	1	—	—	6	1	—	—	5	—	10	1	1	5	2	—	4	—	3	11	18	—	3	—	71
Scarlet Fever ...	—	1	—	10	2	—	6	—	—	6	17	—	—	5	3	1	1	—	7	—	—	—	—	59
Whooping-cough	—	—	3	—	—	—	—	1	—	—	—	1	—	—	10	—	—	—	—	—	—	3	—	18
Ringworm ...	—	1	—	—	—	1	—	1	4	2	1	1	—	—	—	2	1	—	1	1	1	1	—	18
Typhoid Fever...	1	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	1	—	1	—	—	—	—	4
Diphtheria ...	—	—	—	—	—	—	—	—	—	—	—	—	2	1	—	—	—	—	—	—	—	—	—	3
Erysipelas of face	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
and head ...	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	0
Small-pox ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Totals ...	3	58	24	49	38	4	73	44	4	40	19	83	37	65	16	9	68	96	20	96	139	144	150	1279

It is a well-established fact that all the *major* diseases, which are of an infectious nature, are more prevalent in the autumn and winter, contrary to the incidence of the *minor* diseases which, as I have shown, prevail in the spring and summer. This fact was admirably shown by Dr. Robert Barnes in an excellent paper read before the British Medical Association at Dublin, in 1887. He recorded the deaths from scarlet fever, continued fevers, erysipelas, and puerperal fevers, in a series of tables worked out by Dr. Buchan, and published in the "Royal Meteorological Transactions" for the years 1845 to 1874, and continued by Dr. Barnes from 1875 to 1884, thus extending, therefore, over a period of forty years.

In all these diseases the tables were so nearly identical, that, placed the one over the other, they would almost exactly coincide. I append the charts (p. 399) relating to scarlet fever, as they are of paramount interest to schools.

In analyzing the cases of scarlet fever, 1008 in number, which were admitted into the South Western Fever Hospital, in London, Dr. Caiger records the same facts for the epidemic of 1890; indeed, his chart is almost exactly identical, for this epidemic, with the subjoined charts.

In considering the question of the *prevention* of epidemics, it must be borne in mind that *sporadic* cases of infectious illness are the real test of the healthiness of a school, and of its sanitary surroundings. For, in a school where they are continually arising, and where, when they do occur, they spread from pupil to pupil, it is evident that a serious fault exists. During an epidemic season some of the best situated and the best regulated schools, where the pupils, too, are in the rudest health, will certainly be involved; but the number of cases, and the severity of each, are, under

CHART I.—DR. BUCHAN'S TABLE.
DEATHS FROM SCARLATINA FOR ALL AGES, AND BOTH SEXES, THIRTY YEARS, 1845-74.

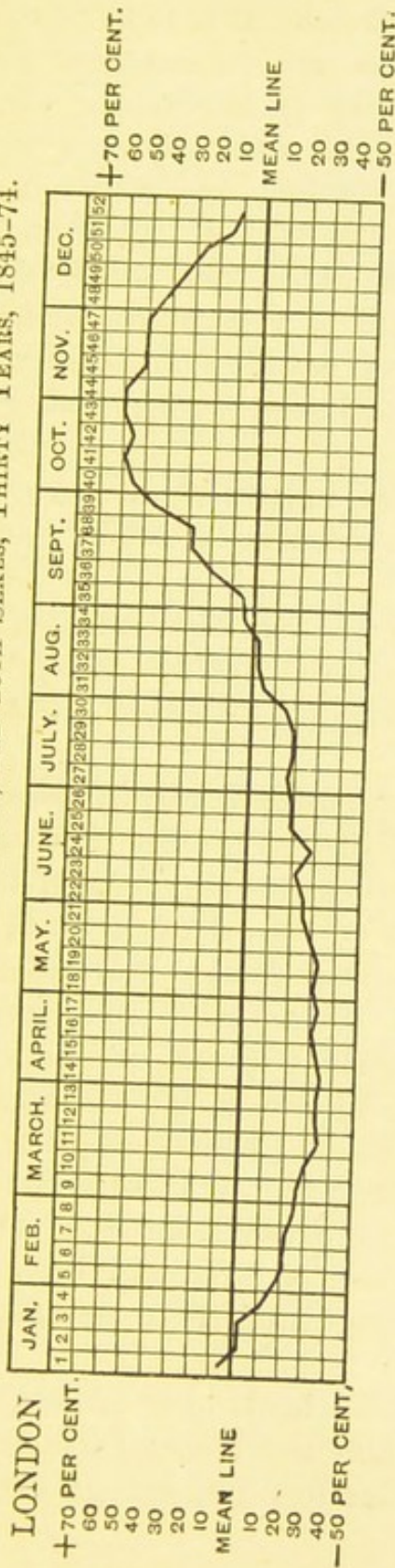
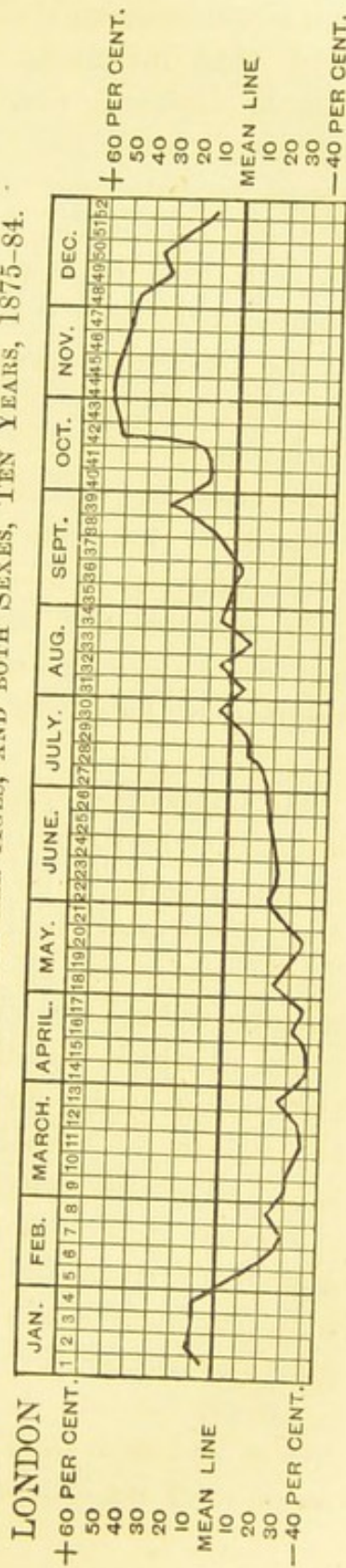


CHART II.—DR. ROBERT BARNES' TABLE.
DEATHS FROM SCARLATINA FOR ALL AGES, AND BOTH SEXES, TEN YEARS, 1875-84.



such circumstances, greatly reduced. It is to be remembered that infectious diseases are unprevented preventible diseases; and that they spread mostly where insanitary conditions exist. If these diseases were always regarded as "filth" diseases, one stage nearer to their eradication would be reached. Dr. Hueppe contends that the specific bacteria, from which these diseases arise, owe their origin to putrefactive bacteria, on the Darwinian principle of modification by descent and that a hygiene of cleanliness is the best prophylactic.

To render, therefore, the existence of germ-life difficult is to make the existence of sound human health easy.

As a necessary corollary to the importance of an accurate knowledge of the natural history of zymotic diseases, we have now to discuss the following points.

Accurate
Diagnosis
necessary.

II. *Capacity of accurate diagnosis is equally essential.* I shall endeavour to show the paramount importance of this condition by advancing the argument of facts. And, to do so, I shall select a class of cases which are the *bête noire* of all physicians, though they specially concern school physicians. These cases have misled many, in which number I include myself, and they are still doing so, to our discredit and to the detriment of the welfare of schools. Yet, on careful analysis, they are as separable as typhus fever from typhoid fever.

I refer to the disease called EPIDEMIC ROSEOLA (termed also Rubeola, Rötheln, German Measles, and Roserash), and the features which distinguish it from measles, and also from scarlet fever.

Of all diseases with which schools have to deal, none has caused such infinite trouble and anxiety, not only on account of its inherent difficulties in diagnosis, but also

by reason of an improper nomenclature entailing endless confusion.

By mistaking epidemic roseola for measles an error is committed sufficiently to be deprecated; but to confuse epidemic roseola with scarlet fever, notwithstanding the difficulties in diagnosis, may involve very serious results.

There are few questions discussed in this book of greater moment than the accurate diagnosis of this simple disease of epidemic roseola. For if the patient be suffering from it, a period of isolation of fourteen days is usually sufficient, notwithstanding the desquamation; while if it be scarlet fever, a period of confinement varying from forty-two to fifty-six days is required. Let us conceive what this difference means in an extensive epidemic!—a difference of twenty-eight to forty-two days for each case of wholly unnecessary confinement, with its attendant discomforts, loss of time, and pecuniary cost entailed for nursing and isolation.

In Tables I. and II., pp. 396, 397, I have faithfully recorded all the cases that were entered in the register as scarlet fever. But, from more extended experience, I have not a doubt *now* that those cases registered in 1881 as scarlet fever were cases of epidemic roseola. The group of cases which I have recorded as scarlet fever in Table II. in 1889 should have been entered as epidemic roseola; for I distinctly remember that one day I reported them to the head-master as scarlet fever, and on the next as epidemic roseola, and this continued for several days, until I definitely judged that they were really epidemic roseola. Meanwhile the matron had entered them on the register as at first diagnosed—namely, scarlet fever, and the mistake was never rectified. For I eventually discharged them on the seventeenth to the nineteenth days, while they were peeling (having unnecessarily detained them for several

days for prudential reasons), without any injurious result to themselves or others. I trust, however, that I have now mastered the problem—perhaps only until the next difficulty supervenes.

If the tables and charts be studied, it will be observed that the natural history of these diseases shows that epidemic roseola is essentially a spring and summer disease, while scarlet fever is an autumn and early winter disease.

Another feature in its history may afford considerable assistance in the fact that, in the same run of cases of epidemic roseola, some may resemble measles, and others scarlet fever; but we *never* find in the same epidemic of *measles* some cases of measles resembling scarlet fever, and the converse.

The question has arisen in my mind, over and over again during the past year, whether the very extensive, but non-fatal, epidemic of scarlet fever which raged throughout the country in the year 1892 and the early part of 1893 was not largely an epidemic of epidemic roseola rather than of scarlet fever. The grounds on which I base this suggestion are—

1. Because it occurred out of its season, and occupied the period during which epidemic roseola is prevalent and scarlet fever is generally absent.

2. Because it was so much less fatal than scarlet fever usually is. But, in saying this, I am quite aware of the popular delusion, expressed even by well-educated people, that a case of illness cannot be scarlet fever on account of its mildness; whereas some of the slightest cases of illness I have ever experienced have been characteristic instances of scarlet fever. But in an epidemic there are usually a number of persons so predisposed to the malady as to bring up the mortality to its normal standard.

3. Because I had some experience of the epidemic in

question by reason of being consulted by the head-masters of two schools at a distance from Rugby. The illness in one school was diagnosed as scarlet fever by one of the most accurate and experienced physicians in London; but it proved to be epidemic roseola. In the other school, with a series of sixteen cases as a basis of judgment, I was able, in all stages of the development, from one day to six weeks, to satisfy myself that they were epidemic roseola, and not scarlet fever. I fear, however, that I caused the head-master an endless amount of trouble by convincing him of the truth; for he had to face the opposite views of my professional brethren at the various homes of the pupils, who were not equally convinced. But the sequel proved the accuracy of my diagnosis.

Among the *reasons* why mistakes occur in the diagnosis of this very erratic disease are:—

Cause of
mistakes
in Diagnosis.

1. The fact that we are all too apt to diagnose this class of ailments too exclusively from the appearance of the eruption, without having sufficient regard to the history, the incubation period, and the presence or absence of other symptoms; whereas these concurrent symptoms should be primarily considered. And, unfortunately, the eruption of epidemic roseola occasionally so much resembles that of measles, or of scarlet fever, that at certain stages, and in certain cases, no one who studies the eruption alone can possibly distinguish them.

2. Because we are too inclined to regard a diffuse red *rash*, followed by desquamation, as unmistakable evidence of scarlet fever, which is very contrary to the fact, as I trust I shall be able to show.

3. There is also the erroneous inference, which I have already mentioned, that because the illness is slight it cannot, therefore, be scarlet fever; and because the

THE DISTINGUISHING FEATURES BETWEEN

Epidemic Roseola, or Roserash.	Morbilli, or Measles.	Scarlatina, or Scarlet Fever.
<p>I. <i>Prenonitory symptoms.</i> Usually none.</p> <p>II. <i>Season.</i> Spring and Summer.</p> <p>III. <i>Incubation period,</i> usually 18 days, but with a range of 9-21 days.</p> <p>IV. <i>Eruption.</i></p> <p>1. In the <i>measles type</i> the eruption is the first noticeable symptom: consisting of minute <i>rosy-red</i> dots, which are apt to enlarge and coalesce.</p> <p>2. The <i>scarlet fever type</i>, the eruption is the first noticeable symptom, and in a few hours will cover the whole body with a <i>rosy-red raised</i> eruption. Before it thus spreads it is always of a patchy character, with defined margins to the several patches.</p>	<p>I. <i>Prenonitory symptoms.</i> Usually malaise, and <i>catarrh</i> for three days, before the appearance of the eruption.</p> <p>II. <i>Season.</i> Spring and Summer.</p> <p>III. <i>Incubation period.</i> Eruption appears usually the fourteenth day from exposure (being preceded by the three days of <i>catarrh</i>), with a range, however, of 7-18 days.</p> <p>IV. The <i>eruption</i> appears after three days of <i>catarrh</i>; is <i>papular</i> in character, and while bright red at first, it soon becomes <i>brick red</i> in colour, and may even show a shade of blue, never a bright <i>rose-red</i>. It first commences behind the ears and on the face.</p>	<p>I. <i>Prenonitory symptoms.</i> Usually malaise, and <i>sore throat</i> for one day before the appearance of the eruption.</p> <p>II. <i>Season.</i> Autumn and Winter.</p> <p>III. <i>Incubation period,</i> usually 2-3 days, with a range, however, of a few hours to seven days.</p> <p>IV. The <i>eruption</i> is a diffuse <i> dusky red</i>, presenting a <i>goose-flesh</i> appearance, but not in isolated dots at any stage, as in epidemic roseola; nor in patches, with defined margins.</p>

V. *Additional symptoms.*

1. *Throat.* Fauces dry looking, having a motley red hue, which bears no relation to the extent of the rash.

2. *Conjunctivæ* : pinkish red.

3. The *lymphatic glands* throughout the body are enlarged, hard, and tender, and feel like peas under the skin, notably the posterior cervical, the axillary, and the inguinal.

4. *Desquamation.*

In the *measles* variety there may be a little branny desquamation; but frequently there is none.

In the *scarlet fever* variety it may be scanty, or as free as it is possible to be, even extending to a general desquamation of the hands and feet. *But the desquamation bears no relation to the intensity of the eruption,* as the fullest eruption may have but a scanty desquamation, and even when it does take place it is over in a week or two. It is always shed in branny scales, and never in sheets.

V. *Additional symptoms.*

1. *Throat.* Fauces normal in most cases; but there may be a diffuse redness.

2. *Conjunctivæ* : very red and watering, with considerable photophobia.

3. The *lymphatic glands* are not usually affected. The posterior cervical rarely so; but the bronchial glands are always enlarged.

4. *Desquamation.* There is frequently a little minute shedding of epidermis, varying according to the intensity of the rash.

V. *Additional symptoms.*

1. *Throat.* Fauces vary from the slightest redness to an intense dark red mottling, with marked swelling, and spots of inspissated secretion; and the severity of the throat affection usually bears a marked relation to the extent of the eruption.

2. *Conjunctivæ* : normal.

3. The *lymphatic glands* of the throat and neck can be scarcely detected during the first few days; though subsequently they may be enlarged *in proportion to the severity of the faucial affection*, but the inguinal and axillary are not involved.

4. *The desquamation varies according to the intensity of the rash.* If there be little rash, little peeling follows, but even then it does not cease for many weeks; if much, the peeling is copious, occurs in pieces or shreds, and lasts from 6-8 weeks or longer. *It invariably commences with a peeling of the tongue on the fourth day.*

THE DISTINGUISHING FEATURES BETWEEN

Epidemic Roseola, or Roserash.	Morbilli, or Measles.	Scarlatina, or Scarlet Fever.
<p>5. The <i>kidneys</i> are rarely affected, and then only a transient trace of albumen appears.</p>	<p>5. The <i>kidneys</i> are never affected.</p>	<p>5. <i>Kidneys</i>: albuminuria is very frequent; and acute nephritis not uncommon.</p>
<p>6. <i>Diarrhœa</i>: unusual.</p> <p>VI. <i>Sensations of illness</i>. With the fullest eruption, the patient only rarely feels ill; nor does he appear to be so.</p>	<p>6. <i>Diarrhœa</i>: frequent.</p> <p>VI. <i>Sensations of illness</i>. I have been told repeatedly by boys that no malady has ever made them <i>feel</i> so ill, and certainly they frequently look ill.</p>	<p>6. <i>Diarrhœa</i>: rarely, if ever.</p> <p>VI. <i>Sensations of illness</i>. In slight cases there is no apparent illness; but I have never seen a case with a severe eruption where the patient did not appear, and feel, ill.</p>
<p>VII. <i>Tongue</i>, clean or slightly furred; <i>never coated with a thick white fur, which peels on the fourth day, leaving a raw red tongue</i>.</p>	<p>VII. <i>Tongue</i>, slightly furred, or even with a dirty brown fur when the illness is severe.</p>	<p>VII. <i>Tongue</i>. If the illness be slight there may be no signs; but in a well-marked case, the <i>tongue is coated with a thick white fur, which peeling off from the tip and edges on the fourth day, gradually leaves a raw red tongue</i>—the characteristic strawberry tongue.</p>
<p>VIII. <i>Pulse</i>, normal, or slightly increased in frequency, <i>bearing a ratio to the temperature</i>.</p>	<p>VIII. <i>Pulse</i>, usually accelerated; may be very feeble and dicrotic; and usually bears a ratio to the temperature.</p>	<p>VIII. <i>Pulse</i>. <i>Even in slight cases it is accelerated out of all proportion to the height of the temperature</i>.</p>

IX. *Temperature* varies from normal to 103° or 104° Fahr. But even with an intense rash the temperature is not necessarily high.

X. *Course of illness.* No illness at all if the eruption be slight; or, if severe, it passes off in a few days. *The lymphatic glands continue enlarged and tender for about three weeks, and the desquamation also remains about the same time.*

XI. *The period of infection.* I do not know of any illness which is so infectious in its earliest stage, even before any symptoms are manifest. In its later stage, even while desquamation is taking place, it is not infectious beyond two or three weeks, after thorough disinfection.

XII. *The duration of infectiveness.* From 10-21 days, where efficient disinfection is in use.

XIII. *Protection.* The illness affords no protection against measles or scarlet fever.

XIV. *Sequelæ.* Practically none; but I have seen the submaxillary glands enlarged.

XV. *Termination.* Usually complete recovery in a fortnight.

IX. *Temperature* usually raised from 101° to 105° Fahr.

X. *Course of illness.* Quite well in 10-14 days; though in severe cases the convalescence is more protracted.

XI. *The period of infection.* Very infectious as soon as catarrh commences, three days before even the appearance of the eruption. The infection continues for 2-3 weeks.

XII. *The duration of infectiveness.* From 14-21 days, where disinfection has been carried out.

XIII. *Protection.* The attack affords no protection against the scarlatina or measles variety of roserash.

XIV. *Sequelæ.* Pneumonia, bronchitis, pleurisy, ophthalmia, otitis, etc.

XV. *Termination.* Usually complete recovery in a fortnight, at the school age; but sometimes followed by a prolonged period of ill-health.

IX. *Temperature* varies from 99° to 106° Fahr. A full eruption invariably means a high temperature.

X. *Course of illness.* The illness gradually subsides in from 4-7 days. Desquamation commences as the eruption fades, and continues for 6-8 weeks or more, lasting longest on hands and feet.

XI. *The period of infection.* The least infectious of any illness during its early stage. It is this which brings it more under control than roserash. It must be assumed to continue infectious as long as desquamation lasts.

XII. *The duration of infectiveness.* From 6-8 weeks from commencement, or more (?).

XIII. *Protection.* The attack affords no protection against the scarlatina or measles variety of roserash.

XIV. *Sequelæ.* Nephritis, suppuration of submaxillary lymphatic glands, otitis, rheumatism, endocarditis.

XV. *Termination.* Usually complete recovery at the school age; but sometimes a prolonged convalescence, or death.

illness is severe it cannot be epidemic roseola. On the contrary, some of the slightest cases of serious illness I have ever witnessed have been scarlet fever, and it is a well-known fact that such cases frequently become fatal on account of insufficient care. I have also seen the illness occasioned by epidemic roseola assume a very severe type.

I here furnish (p. 404) a brief *résumé* of the distinguishing characteristics between these three zymotic diseases. These points—discussed by me more thoroughly—will be found in an essay read before the Medical Officers of Schools Association, in February, 1894.*

It is, therefore, quite clear that the *prevention* of epidemics at school is a matter that demands every consideration, and no trouble can be too great in the endeavour to minimize them.

Methods of
Prevention.

III. *The methods available for the prevention of epidemics at school.*

i. How to *render the school an unfit soil* for the activities of these disease germs.

In this case regard must be paid to the pupil and his surroundings, in order to ensure the highest state of health.

1. The *dryness of the soil* is one of the chief necessities; efficient surface and subsoil drainage, therefore, is of the highest importance. A breezy site is also another feature of importance.

2. If drainage be carried out thoroughly, the quality of the *atmosphere* is so improved, by reducing its humidity, as to give it increased power in oxidizing the spent

* "On the Features which distinguish Epidemic Roseola or Roserash from Measles and from Scarlet Fever." Churchill & Co., New Burlington Street.

materials given off from the body, as well as in facilitating the destruction of "ground" organic matter.

3. But this increased state of purity of the atmosphere *out-of-doors* is insufficient without plenty of *cubic space indoors*, as well as thorough *ventilation* in studies, dormitories, dining-rooms, class-rooms, and chapel. To re-breathe the same air more than once is almost as objectionable as the reintroduction of any of the other excretions into the body.

4. *Impure water* must not be drunk.

5. *Efficient drainage*, for the rapid and complete removal of the excretions, and the prevention of the entrance of gases arising from their decomposition into boarding-houses, class-rooms, and sanatoria.

6. The regular removal of *house-refuse* before it undergoes decomposition: this must be done at least once a week, though twice a week, or even daily removal, is better.

7. By the production of so high a condition of health in every boy that he will be less susceptible to the multiplication of the infectious poison. To ensure this, *work* must be regulated according to *age*: *exercise* must be taken daily, varying in amount and severity with *age and size*: sufficient *sleep* must be secured, varying in amount according to age and season: and plain wholesome well-cooked *food*, with ample time to masticate it, a daily *natural relief*, and a clean *skin* are absolutely essential.

We should remember what my able master, Sir John Simon, taught:—"That a contagium of a given disease, such as small-pox or measles, has no more power to influence the un-predisposed body, than yeast has to ferment alcohol, or to turn pure water into beer."

ii. How to prevent the *sowing of the seeds* of infectious illness in schools, lest any should germinate, multiply and spread from pupil to pupil.

1. In addition to the causes already enumerated on p. 390, I would refer to the very frequent transfer of a given disease from the first case occurring in a school to *neighbouring schools*, where either younger brothers are visited on Sundays, or where cricket or football *matches* are interchanged. It should, therefore, be an established rule, that when a single case of infectious illness arises in a school, a friendly warning should be sent to all schools in the neighbourhood with which pupils have inter-communication. Such friendly caution saves endless trouble and chagrin.

2. But one of the most frequent periods at which infectious illness enters a school is at the *commencement of term*. It should, therefore, be an invariable rule that, where any illness of an infectious nature has occurred at home, whether it has affected the pupil or not—or where a pupil has been in any way exposed to infection—he should, on arrival, be driven, with his luggage, direct from the railway station to the sanatorium, and there have his head, body, and every accompanying article, disinfected before he enters school. This should be carried out by the sanatorium staff, under the personal superintendence of the medical officer, quite irrespective of any previous home-disinfection. For the school doctor is responsible to the school, and should not accept what has been already done as a sufficient security, since some parents are reprehensibly, and others ignorantly, careless.

iii. How to *prevent an infectious illness spreading and involving others*, when once a case has occurred in a school.

1. *Instantly isolate* the first case (together with a nurse), where the faintest reasonable suspicion exists; and apply the same treatment in each succeeding case. Means such as I have shown in the model school sanatorium should be provided for this purpose, which,

although costly, would save in the end a large amount of money, for there is nothing so expensive as illness.

2. Have perfect *quarantine* regulations and accommodation. It appears to me that these necessities must be very deficient in some schools, when a recent writer records the fact, that a certain epidemic in a school attacked over two hundred boys in one *term*; and he adds, that this is the experience of most large schools. If my Tables I. and II. (pp. 396, 397) be studied, it will be seen that, until the advent of influenza, where every recognized case was also isolated as if it were scarlet fever, in no *year* did the infectious illnesses at Rugby School exceed ninety-six in number, and that number comprised three various diseases.

3. Remove the mattress and bedding from the dormitory to the sanatorium, as soon as the pupil is himself isolated, for the purpose of *disinfection*.

4. Remove all his *clothes* from his chest of drawers, and all articles from his box, his pigeon-hole, or his locker, and send them to the sanatorium, as soon as he is first isolated, for the purpose of disinfection. In this way, unexplained *de novo* cases are less likely subsequently to arise, and neutralize the *data* in estimating the incubation periods.

5. Thoroughly *disinfect* the head, body, and clothes after the illness itself, however slight it may have been, so that *convalescents* may not infect others after their return to school.

6. *Occasionally* it may be advisable to disinfect the clothes of such school-fellows as have been much in contact with the invalid before his isolation, although they may themselves have had the illness previously.

7. *Frequently* it may be prudent to place in *quarantine* a school-fellow who has shared a study with, or slept next to, the invalid, and who has not already had the

illness. In this way many an epidemic may be arrested in its course.

8. *Books* which have been used by an infected patient before he is isolated, even at the beginning of his illness or during his convalescence, should be destroyed, as it is impossible to disinfect them properly, unless every page be treated separately, which, it is needless to say, would rarely be safely carried out.

DISINFECTION.

Notwithstanding all precautions for prevention, infectious illness will occur in a school from time to time. It is necessary, therefore, to discuss the means to be adopted, when a case of infection has arisen, for rendering the patient, after his illness is over, sufficiently safe to mingle with his school-fellows without spreading the disease. This is effected by complete destruction of the germs which have caused the illness, or which the illness has produced, by the process termed "Disinfection."

After infectious illness has broken out the one most anxious question for schoolmasters, and often involving the greatest annoyance to parents, is that of determining when a boy may safely return to school after an infectious illness has appeared at *home*; or when the boy may safely re-enter school, or go home, after an infectious illness has occurred at *school*. The time lost in such cases—waiting for freedom from infection—is irritating in the extreme to all concerned; the parent thinks that he is paying his money for a thirteen weeks' term, and finds six weeks lost through his son not being free from infection, and therefore unable to mix with his school-fellows; the master is troubled on account of the boy not only losing time and position in the school, but also becoming

demoralized in consequence of his comparatively enforced idleness ; the boy himself, too, is often sickened and disheartened with his imprisonment and isolation : so that every one suffers.

This anxiety and annoyance can be greatly mitigated, if not, indeed, almost obviated, by efficient disinfection of the person, clothes, bedding, and room of the sick boy and his nurse.

Disinfection of the person is best achieved by repeated cleansing of the body so that any poison on the skin, as in scarlet fever, may be rendered inert as rapidly as it is formed. Various disinfecting soaps are useful for this purpose, such as carbolic soap, terebene soap, coal-tar soap ; certain fluids added to water or oil, such as carbolic acid, terebene, sanitas, eucalyptus, creolin, thymol, or Condyl's fluid are also employed ; or "acids," such as sponging the body with aromatic acetic acid, or simple vinegar, which is an excellent destroyer of organic poisons.

Disinfection
of the
Person.

It is also necessary to destroy the poison which comes off from the person in the various discharges from the body.

Disinfection of the person is absolutely useless, so long as his clothes and bedding remain saturated with poison, which they can retain for months.

Disinfection
of Infected
Clothing
and Bedding.

Howard, a century ago, said,* "There should likewise be an *oven* ; nothing so effectually destroys vermin in clothes and bedding, nor purifies them so thoroughly when tainted with infection, as being a few hours in an oven moderately heated." The way this plan was carried out was to put "his clothes into an oven, in a sack upon a pair of iron dogs." The verdict of sanitary science still

* "Prisons," p. 45.

is, that the best method for the disinfection of clothes and bedding is dry, or moist, heat.

Henry, of Manchester, showed that vaccine virus lost its power after being heated for three hours at 140° Fahr. He disinfected scarlet-fever clothing by exposure to a heat of 212° Fahr. for one hour. The woollen clothing worn by plague patients, after being heated for twenty-four hours at 114° to 167° Fahr., was afterwards worn with impunity by fifty-six healthy persons for fourteen days. But experiments on bacteria have shown that they are difficult to kill.

Lex found that 260° Fahr. failed to kill them, and after boiling for half an hour they still showed vital movements.

Calvert found that 400° Fahr. was required to destroy them.

Bastian stated, before the Royal Society, that bacteria and vibrios are killed at a much lower temperature; 158° Fahr. either killed the bacteria germs or destroyed their powers of multiplication.

Sanderson says that bacteria in water are not developed in fluids heated to 366° Fahr., or even when boiled.

Tyndall stated, before the Royal Society, that while prolonged boiling failed to sterilize, yet successive heatings for a short time, even below the boiling point, were successful.

It is said that "disease bacteria" are more easily destroyed than "putrefactive bacteria" (Parkes).

Dr. Vernon contributed a paper to the *Lancet*, in which he gave the minimum heat required to render the germs of disease inert. He reported that Parkes said 220° Fahr. was sufficient, but 250° Fahr. desirable; Ransom, that 235° Fahr. was sufficient, but 255° Fahr. desirable; Henry recommended 212° Fahr. for an hour; Wynter

Blyth stated that 278° Fahr. retarded development, but that all the bacteria were not destroyed; Esse, of Berlin, advised 234° Fahr. moist heat; Vernon said that moist heat was more potent than dry heat, and that 250° Fahr. moist heat was effectual; but in experimenting he found that the dry heat scorched linen at 255° Fahr., and ignited it at 380° Fahr., whereas moist heat of 340° Fahr. failed to scorch. Watson Cheyne maintains that spores are not destroyed unless they are exposed to a current of steam for about three hours.

However much physiologists differ as to the heat required to destroy the infectious germs of disease, the physician who has to prevent the spread of these diseases must arrive at some definite and reliable conclusion.

The heat required for disinfecting purposes is best generated in what is called a "disinfecting chamber," heated by gas, coal, or coke. Into this chamber the clothes and bedding are placed. It will be found one of the greatest boons to parent, master, doctor, and patient.

A large and daily experience with the use of the disinfecting chamber makes me desirous to extol its virtues in no measured terms; for of all the inventions of modern times, there is nothing that can exceed in value the "disinfecting chamber" for the practical physician who has much infectious illness to deal with.

There are several forms of this "Disinfecting apparatus" in use at the present time, and all are of value. To be perfectly efficient the disinfecting chamber must be close at hand. It should be placed between two rooms, into one of which the infected articles are to be placed through one door of the chamber; while the other room should receive them from the opposite door of the sterilizer. In this way the articles will not come in contact with the unsterilized clothing; and of course they should not be returned to an infected room to be put on.

The chamber is made to be worked with either gas, coal, or coke, gas being far more easily managed; ready management, of course, adds very much to its usefulness, which is no small item in effecting disinfection properly, which sometimes has to be carried out several times in a day. Of those heated by *coal*, Bradford's, of Salford, is the best; while of those heated by *gas*, the "Nottingham Self-Regulating Disinfecting Apparatus"* is the most efficient.

Jennings' is also a very good one; but Nelson's, of Leeds, of which I have had long experience, is cheaper, is trustworthy, and answers admirably in every way.

The *heat* is raised in Nelson's until the thermometer registers a minimum of 140° Fahr. outside—the heat inside being about 60° Fahr. above this, or 200° Fahr.—and it may range from 200° Fahr. to 250° Fahr. inside without damage to articles of clothing or bedding. It takes about twenty minutes to become thoroughly heated for use; and in this chamber every soiled and infected article can be rendered free from infection within a reasonable time—from twenty to sixty minutes after the attainment of full heat, varying according to size, material, and thickness.

Vacher says,† "It is very remarkable that, whereas the typical contagious liquid—vaccine lymph—survives the intense cold produced by solid carbonic acid and ether (*i.e.* a temperature of 166° Fahr. below the freezing point of water), it is killed by exposure to a temperature of 150° Fahr."

I have never known a case of infection occur through imperfect or ineffectual disinfection by this hot-air process. And my experience includes cases of infectious illness—after convalescence and disinfection—sent into

* Messrs. Goddard and Massey, Nottingham.

† Loc. cit.

school again where several hundred pupils were living together; others were sent home, where young children were residing, and even mattresses, on which scarlet-fever cases had slept for six weeks, have been occupied, after disinfection, by those who had not already had scarlet fever, and in consequence were not protected. Such tests are crucial.

It has been suggested that in the use of these chambers sulphur should be burnt, so as to submit all articles to the fumes of sulphurous acid at the same time. The suggestion is excellent, but unnecessary, unless it be found that by this addition the required degree of heat can be lowered.

Mattresses and pillows take about three-quarters of an hour to an hour to become thoroughly purified, and every mattress that is required for a second case, even of the same infectious illness, should be thus purified and rendered free from infection before being again used.

Of recent years "superheated steam" has been employed, with these advantages—that a less heat is sufficient, and that it damages articles of clothing less than the dry heat; about 220° Fahr., under a pressure of 25 lbs. to the square inch, being sufficient for the destruction of all organisms.

Moreover, as already stated, Watson Cheyne regards this form of disinfection as the most reliable.

The most efficacious mode of disinfection by heat, has now been undoubtedly proved to be by the use of superheated steam under pressure. For it has been ascertained by carefully conducted experiments* that, with the exception of spore-bearing cultivations of the bacillus of anthrax, all the infective materials experimented on were destroyed by an hour's exposure to dry heat of

* "On Disinfection by Heat:" Parsons, Appendix B., No. 10, Fourteenth Annual Report of the Local Government Board.

220° Fahr., or five minutes' exposure to steam at 212° Fahr.

The most important requisites for a reliable disinfecting apparatus are—

1. That the temperature in the interior shall be uniformly distributed.
2. That it shall be capable of being maintained constant for the time during which the operation extends.
3. That there shall be some trustworthy indication of the actual temperature of the interior at any given moment.

These three requirements are most satisfactorily attained by the use of steam, and this is applied with the greatest advantage by Lyon's patent steam disinfecter (Fig. 30).

Of course all clothing that will wash should be boiled and washed; but all articles that cannot be washed can yet be rendered perfectly safe from infection.

The benefit obtained at schools by this apparatus for the disinfection of the clothes and bedding is palpable; but there is another gain, even greater, involved in its use, on the re-assembling of schools after the vacation. I shall explain myself best by stating cases, which will be more readily followed.

First, take an example of an infectious illness arising *at school*. A boy has, say, measles; as soon as the illness is over, and he has been out-of-doors for several days, he can be daily washed all over with carbolic soap. His clothes can then be passed through the disinfecting chamber, and he can return to school safely. His mattress and bedding also can be rendered free from danger, and ready for another case should occasion require.

If I now state what used to be the process followed, the gain obtained will be clear. After every case of infection, however trivial, the clothes had to be disinfected

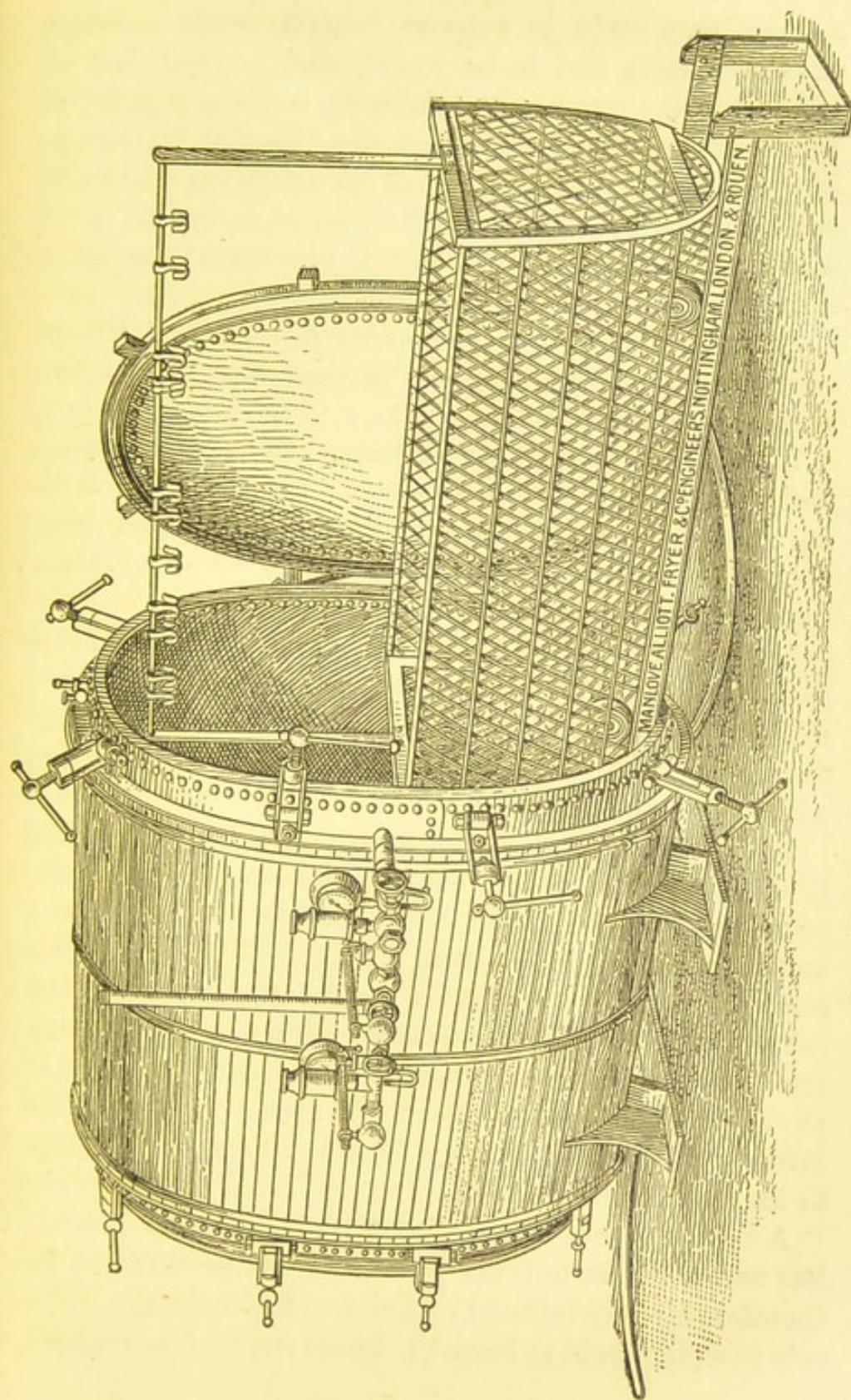


FIG. 30.—LYON'S PATENT STEAM DISINFECTOR.

as best they could, by sulphur fumigation and washing, or else a farm had to be found, after a great deal of trouble, in the country, and there the boy was sent for as long a period as was necessary, according to the nature of the attack and of the illness; his bedding had to be soaked in a disinfectant, which damaged it, or else it was sent to an upholsterer to be taken to pieces and thoroughly disinfected, at considerable expense.

Secondly, take three examples of infectious illness occurring *at home* during the vacation, and observe the service of this apparatus.

A boy has measles in the vacation. The illness is over, and he is ready to return to school; but he comes from an infected house, and his clothes are saturated with poison. What is to be done to protect the school from the admission of the poison?

Instead of sending him away from all source of infection for a time, he can—after home disinfection—return at once to the school sanatorium, be thoroughly disinfected there, and then enter his boarding-house without danger to any one.

A boy's sister has scarlet fever. He himself has had it at some previous time, but he has been with his sister, or mixed with those who have been in the sick-room; and although there is little chance of his getting it a second time, yet his clothes are infected. How is the school to protect itself? Instead of sending him away from every source of infection in order to purify his clothes, he can come to the school sanatorium to be disinfected, and then enter his boarding-house with safety to his school-fellows.

A boy's brother has scarlet fever. The boy himself has never had it, but has been with his brother; is he therefore already infected? Is it incubating in him? In this case, he ought to leave the house and be free from all

chance of infection for eight clear days ; then, if he show no symptoms, he may be disinfected and return to school.

The disinfecting apparatus has proved, together with other precautions, an immense boon ; for the greatest period of anxiety to schools is the first ten days of term. Where boys come from all parts of the country, the question is—What illness has been imported into school ?

The following regulations may serve as a guide to parents and masters as to the return of infectious cases to school. For instance, a parent writes to say he has scarlet fever in his family, and desires to know what the school authorities require concerning the return of a son ; the master consults the medical adviser to the school, who fills in the following form, according to the nature of the illness :—

REGULATIONS APPLICABLE TO THE RETURN OF
INFECTIOUS BOYS TO SCHOOL.

1. If your son *has had* (say, scarlet fever), he may safely return to school at the time appointed, provided he come straight to the sanatorium to be disinfected by the school authorities.
2. If your son *has not had* (say, scarlet fever), he must be removed from your house, and hold no communication with any member of it, for (scarlet fever, eight) clear days ; and then, if he show no symptoms of the illness, he should come straight to the sanatorium for disinfection.

(Signed),

Medical Officer to.....School.

Date.....

Where there is no disinfecting chamber in use, the clothes and bedding may be effectually disinfected by

soaking them in a solution of carbolic acid and water ; this is the plan I adopted before I was able to employ a heat chamber. Others place them in chloride of lime ; others in acids, and then expose them in the open air until they are dried. Koch found that one part in one thousand of corrosive sublimate effectually destroyed all germs ; this is represented by one ounce of corrosive sublimate in six gallons of water.

Another plan I have frequently used, and employ still, is fumigation, in a well-closed room, by burning sulphur, about one ounce of sulphur being required for every hundred cubic feet of space ; with care, and method in spreading out the garments that need disinfection, it is a safe and easy method, and purifies the room itself at the same time. I need scarcely add that in the process of disinfecting every detail should be conscientiously carried out.

For schools which have no disinfecting apparatus, certain rigid rules are necessary, before a boy can enter or return to school. This involves the "duration of effectiveness," which will be considered presently.

Disinfection
of Rooms.

The disinfection of the person and clothes must be supplemented by the purification of the infected room. The former can, I believe, be always thoroughly purified and rendered safe ; it is not such an easy matter always to make the poisoned room safe, for scarlet fever has frequently arisen in the unfortunate person who has been the next to occupy a disinfected room, even after a lapse of months. Is it from careless disinfection ?

It should be disinfected by the fumes of burning sulphur, by nitrous acid fumes, or by chlorine fumes. These gases can be produced as follows:—Sulphurous acid fumes, by burning sulphur in a pipkin ; nitrous acid fumes, by pouring strong nitric acid over copper shavings,

or turnings, in a deep jar; chlorine gas, by pouring vinegar, or hydrochloric acid, over chloride of lime. It takes several hours to disinfect a room thoroughly, and all doors, chimneys, and windows must be previously closed, and kept closed for some hours, so that the gases may pervade every part.

After this, the windows, and doors, may be thrown open so as to pass a continuous stream of air through the room for several hours. The room should then be well washed.

CONVALESCENTS AFTER INFECTIOUS ILLNESS.

If the subject of a "Convalescent Department" were mentioned to the masters of most schools they would scarcely understand what was meant, for little, if any, thought has been bestowed upon the subject. The Gordian knot is usually severed by returning boys to their homes immediately after the termination of an infectious illness, to their serious detriment and to the risk of the family, and, through them, to the community. The payments levied by schools for educational purposes should include not only board, lodging, and tuition, but should also provide for the care of boys during illness *and* convalescence; and infectious convalescents should never be sent, or permitted to return, home until they are able to mingle with relatives and friends with impunity, nor until they can travel without leaving a trail of infectious germs behind them in railway carriages and cabs. When this rule is observed with some amount of faithfulness there will be a lessened number of cases of infectious diseases in our schools and homes, and a diminished mortality to mourn over.

In all infectious ailments, after the illness itself is over, if only a *case or two* have occurred, convalescents

may be retained in the sanatorium until fit to go home or to return to school, provided a sufficient time has elapsed, and efficient disinfection of clothes, has been carried out; and as no such case should be permitted to re-enter school until perfectly safe, none should be allowed to travel in public conveyances until free from infection.

But where *many* cases occur, following each other rapidly, the beds are required for fresh cases; and each section, as it becomes convalescent, should be removed, and the rooms and bedding disinfected before being occupied by another batch. The question of the place of their removal is often one of great difficulty and anxiety. Of course, no invalid must be touched on any account until he himself be perfectly safe for removal—nay, more, until removal would be beneficial to him other provision must be made.

When this becomes necessary, convalescents may, after thorough disinfection, be returned to an isolated dormitory in the boarding-house; or perhaps an empty house may be available to which they can be draughted as occasion requires.

BREAKING UP A SCHOOL ON ACCOUNT OF THE ADVENT OF MALIGNANT INFECTIOUS ILLNESS.

This difficulty may at any moment arise at a school, and may require a quick and judicious decision on the part of the authorities.

If a single *malignant* case of infectious illness occur in a school, it is the duty of the medical officer to acquaint the head-master with the fact at once, warning him that it may be the nature of the poison—malignant—which has caused it, though possibly it may be only a *mild* poison, which happens to affect the individual severely

owing to his idiosyncrasy, or through some weak element in his organization. But should a second case arise, it is his duty to lay the matter clearly before the head-master in a form beyond misconception, for the blame of neglect or ambiguity would rest on the medical officer.

The head-master then, if he think it necessary, can give all parents, *whose sons have not had the illness previously*, the opportunity of removing them; but, in my opinion, no school should ever be broken up and the boys dispersed, whether the parents desire it or not. The illness was developed at the school, and the authorities should make all necessary provision for its treatment; and the onus of removing a boy at all, with the risk of illness or death to other children, and otherwise spreading the infection, should rest with the parents, and not with the school authorities.

It may be well to take an example, so as to render the importance of the subject quite manifest.

It seems only human to become panic-stricken on the slightest provocation, or without any provocation. A most unwise and unnecessary panic rages from time to time, especially amongst our schools, when there is more or less of an epidemic of scarlet fever throughout the country. Should this be a cause of terror? Is our knowledge of epidemics of all kinds so superficial as to render us ignorant of the fact that all infectious ailments to which flesh is heir do assume, and have always assumed, an epidemic form from time to time in their appropriate season? Medical science has not hitherto been able to cope with this powerful epidemic influence, but the advance which it has made of recent years leads us to hope that this difficulty will be overcome before long.

It is an unquestionable fact that Nature's process of disintegration, for animal and vegetable matter, after death,

is through the instrumentality of bacteria and parasites. In declining health all animal life becomes more or less attacked by parasites. During the vigorous health of animal life these lower organisms—for bacteria are parasites—have very little power. In the case of vegetable life, fungi and parasites infest trees and shrubs which are not thriving owing to an unsuitable soil or season, and these agents revel in damp, dark places which are unsuited to the growth of the higher forms of vegetable life. They dislike sunlight and air. Further, it is the province of this minute life to grow most luxuriantly where the higher animal and vegetable life fails to thrive. This is Nature's marvellous scheme.

The cause of the panic which seizes our schools, and occasions a number of them to be dispersed, spreading scarlet fever into so many homes, before their normal period of vacation, I am at a loss to understand. I can understand the sense of panic when illness comes upon us suddenly. But, when it is the normal condition for certain diseases to occur at certain times of the year, it seems to me that safeguards should be always provided, certainly in all boarding-schools, instead of panic and helplessness on their appearance.

Education should have such power over human nature as to prevent the advent of panics. Yet we find that schoolmasters themselves are often the most panic-stricken. It will not do for schoolmasters to urge that the panic arises with the public, from whom the profession catches the fear; for, in a large proportion of instances, one hears of schoolmasters breaking up their schools in the middle of the term on the poorest pretexts, whereas such a course should never be pursued except on the strongest grounds.

I have the profoundest respect for a schoolmaster who sends his boys home at once when he finds that his

scarlet fever, his diphtheria, or his typhoid fever has arisen from, or has even been fostered by, the unsanitary state of his school and its surroundings. It is little short of criminal to detain boys at school under such circumstances. But the schoolmaster who, during a general epidemic, breaks up his school because a few cases of simple scarlet fever occur in his school is simply acting from unreasoning panic. He encourages the public in their alarm, instead of quieting the panic by his own weight of character; whereas he should show the parents that he has sufficient capacity to deal with the illness, and encourage them to rely on him.

But why does such an intense dread of scarlet fever prevail? It is not usually a dangerous illness, but one of the mildest. It is true that sometimes it assumes a malignant form, and then becomes very fatal. The largest proportion of deaths, however, take place during its mildest form. The illness is so slight that it is neglected. Some time since, I knew of a serious epidemic in a church school. On questioning the master as to the nature of the illness, and whether any of his scholars had died, he informed me that five cases had proved fatal. On inquiring as to the reason of this, he replied that it was on account of the children having had the fever so mildly, that they had been sent to school throughout the illness. It is these neglected cases which cause the greatest mortality. I would urge that where scarlet-fever patients are put to bed, as they ought to be in every case, however slight the illness, for three weeks, and clothed in flannel, the mortality of scarlet fever, and its dreaded *sequelæ* when death does not arise, would be so lessened that the sting would be removed from the illness.

Where scarlet fever occurs in *day schools* to any extent, the pupils should not assemble, for they spread the fever

unnecessarily in many families. But in boarding-schools, which should be regarded as one large family, unless the scarlet fever assumes a malignant form, the school should continue the even tenor of its way, confident that the mortality, when the illness has not arisen from local insanitary conditions, and when it is properly treated, is usually small. In this way the fever will not be unnecessarily disseminated throughout the country, entailing needless expense and annoyance in families.

Moreover, in the case of scarlet fever, the mortality of those above the age of ten years—THE SCHOOL AGE—is about 4 per cent.; whereas by dispersing boys to their homes the poison is frequently carried into households with *younger* children, in whose case the mortality is very high: for instance, in the case of children under two years of age it is 26 per cent. Were such a mortality to occur during the school age, it would deter most men from taking pupils at all, and might well appal those who had the courage to do so, and would certainly compel each one to disperse his school on the advent of the first attack. Considering, therefore, that the mortality from scarlet fever during the school age, even calculating severe and mild epidemics, is only about 4 per cent. (at Rugby during a record of nearly twenty-three years it has been under 2 per cent.), it behoves parents to compel the school authorities to provide for efficient treatment at school instead of sending the pupils home. In this way boarding-schools would not so frequently act as centres which spread infection most unwarrantably throughout the country, but more especially from school to school.

In the second annual report of the Statistical Committee of the Metropolitan Asylums Board, issued in 1889, a table was furnished, based upon the Board's total experience in scarlet fever, since its foundation.

The table shows that the mortality among children

attacked under five years of age was nearly five times as great as that among children between ten and fifteen.

SCARLET FEVER.	
Ages.	Percentage Mortality.
0 to 5	21·81
5 „ 10	8·36
10 „ 15	4·55
15 „ 20	4·22
20 „ 25	3·87
25 „ 30	4·93
30 „ 35	7·85
35 „ 40	8·39
40 „ 45	10·71
45 „ 50	4·76
50 „ 55	5·0
55 and upwards	50·0

In a valuable paper read by Dr. Whitelegge before the Epidemiological Society, the following statistics as to the *liability* of the age of infection were given:—

SCARLET FEVER.	
Ages.	Liability.
1 to 5	42 p.c.
5 „ 10	40 p.c.
10 „ 15	11·5 p.c.

I strongly hold, however, that a head-master has no right to keep the existence of such possibly fatal illness from the knowledge of the parents, but should acquaint them with the fact, state the exact number of cases and

the way in which they have been dealt with, and convey any further advice and help he may think proper. Such frankness on the part of the head-master would be reciprocated by equal candour and confidence by the parents.

The medical officer's report to the head-master might be in the following form :—

REPORT FROM THE MEDICAL OFFICER TO THE
HEAD-MASTER.

1. There is a case of malignant (say, scarlet fever) in the sanatorium.
2. It is just possible that this may be only a single case, which has taken a malignant form owing to the peculiarity of the constitution of the boy.
3. But it is probable that it is the first case of an epidemic of a malignant type.
4. Within eight days—most likely on or before the fourth for scarlet fever—this point will be determined.
5. Then, should a second case occur of a malignant type, I shall feel it my duty to advise you that every parent, whose son has not already had the illness, should have the option of removing him at once.
6. My reason being that in every epidemic of so malignant type of (scarlet fever), every case would be likely to assume the same character, and the disease would in all probability be very fatal.

(Signed),

Medical Officer.

Date,

All boys thus removed should take home a certificate, acquainting the parents with the period of incubation of the illness; the time during which the boy should be kept apart; and the date at which he may, without danger, mix with the other members of the family. I append a form as a guide:—

MEDICAL CERTIFICATE.

Your son.....may be already infected with
.....and the illness may be incubating in him;
if so, it will show itself within.....days.

If no symptoms present themselves by.....
he may be considered free from the illness, and may safely
join the other members of your family.

(Signed),

Medical Officer.

Address,

Date,

But in dispersing a school it is necessary to remember that it is only those boys who have *never had the disease* who need the privilege of returning home; those who have had it may safely remain at work. For in forming regulations for infectious illness in schools it is essential to bear in mind the very important law in medicine—ably taught by Cullen a century ago, but now too often overlooked—that one attack of an eruptive fever—*e.g.* measles or scarlet fever—entails immunity from a second attack in the same individual during childhood. The “germs” of infectious diseases apparently require a virgin soil for development; a prior attack appears so to exhaust the soil, or so to chemically transform it by

the product of their growth, that it is incapable of furnishing a suitable nidus for the reproduction of the germs. This law is so true—for the exceptions to the rule are so few that they may be regarded as scientific curiosities only—that for the guidance of everyday life it may be held as almost an absolute and invariable fact. As instances of this exceptional state, I may mention that I attended a gentleman for many years, who took *scarlet fever* in some form every time he came in its way. Another gentleman under my care was inoculated for *small-pox*; had so severe attack of confluent small-pox, that it nearly cost him his life; was subsequently vaccinated, and yet died of small-pox, when seventy-five years of age, caught from one of his parishioners, with whom he sat some time reading; on the twelfth day acute fever showed itself with characteristic backache, but without any eruption, and he died on the ninth day of a severe illness, attended with delirium.

I have also seen, what I then called, a *second attack of scarlet fever* occurring while the patient was peeling from the first attack; but with the light of greater experience I am inclined to think that it was an error in diagnosis, and that the one illness was epidemic roseola, and the other scarlet fever.

I have recorded many cases in the *Lancet* of 1881, vol. ii., p. 745, of measles, followed by epidemic roseola, and *vice versa*; and other interesting abnormalities.

I think that the more experience we gain in these diseases, the less frequently shall we hear of second attacks of infectious illnesses, save as curious rarities.

This truth, well known and constantly taught, may be lost sight of in consequence of inaccurate observation and diagnosis. For instance, it is necessary, however difficult it may sometimes prove, not to mistake measles, epidemic roseola, simple roseola, and caterpillar rash for

the same thing, and thus avoid calling each illness another attack of measles—I constantly hear of even third attacks of measles. Nor should scarlatina, epidemic roseola, and erythema be mistaken, and treated as three attacks of scarlatina. Nor ought erysipelas, erythema, and urticaria to be confounded, and described as several attacks of erysipelas—yet this is commonly done. Erysipelas naturally occurs often enough of itself, without adding the stigma of these ailments.

The breaking up of a school, too, is so serious and expensive that it should never be resorted to unless the cases of illness be extremely numerous, or unless, owing to malignant illness, the question be one of life or death; though the difficulty, when it arises, should be promptly faced and action taken without a moment's delay.

THE PREVENTION OF INFECTIOUS ILLNESS BEING CARRIED HOME FROM SCHOOL.

As it is the parent's duty to see that infectious illness is not brought from home *to* school, so it is a master's equally important duty to prevent infectious illness being carried home *from* school; he should therefore inform parents whenever an infectious illness has occurred towards the end of term. Of course, no boy who had had the illness in question ought to be allowed to go home until he was perfectly free from infection; this, I regret to say, is not the case at some schools, for boys are sent home immediately the illness is over, even with a printed circular stating that they are still highly infectious, infecting railway carriages and cabs *en route*. But I am referring to a boy in whom the illness is incubating, which will show itself at its natural time, but who, to all appearances at the period of leaving school, is quite well,

and may continue so for many days, and yet exhibit, at the appointed time, the illness at home. The parent, not knowing the malady is likely to occur, makes no preparations, may be about to travel with his family abroad, may be at a distance from all medical assistance, and then find to his cost that he has been carrying an expensive and deadly enemy on his holiday trip.

At the present time both masters and parents are frequently greatly remiss in this matter. Masters send boys home for the holidays saturated with the disease germs of the various infectious diseases without any warning to parents; and parents act in a similar way.

THE PREVENTION OF INFECTIOUS ILLNESS
AT HOME.

Some cases of (say, mumps) having occurred in the school during the last few days of term, it is possible that your son may be infected, if he has not already had it, though every care has been taken to isolate each case as the illness showed itself.

Your son may be considered free, if he show no symptoms within (say, a month for mumps).

(Signed),

Medical Officer to.....School.

Address,

Date,

Such a possibility should never be permitted to occur. Every parent should be informed by the master of the fact, and thus be warned in time of what may possibly happen. Every master, therefore, when infectious illness has occurred near enough to the end of term for a boy to

exhibit it after leaving school, should forward to the parent a form of certificate, similar to that appended (p. 434), warning him that his son may exhibit a certain illness within a specified date—if he have not already had it—and so enable him to use precautions for the protection of his other children and his friends.

But infectious diseases have at times curious vagaries, as the following case will testify. A. came home from school at X——, where measles or epidemic roseola had prevailed, quite well. He brought the germs of infection in his clothes, which passed on to his brother B., who had just returned from school at Z——, where no infectious illness existed. A. then subsequently caught the illness from B. This shows that at first A. was scarcely susceptible to the ailment, and that B. was very susceptible; while directly there was a concentrated dose of the poison, generated by B. in his illness, A. succumbs and goes through the characteristic stages of the attack.

THE PREVENTION OF INFECTIOUS ILLNESS BEING BROUGHT TO SCHOOL FROM HOME.

If such consideration and care as I have indicated be exhibited by the school authorities, parents will in their turn become more careful and conscientious, and schools will not then be placed in a state of anxiety and suspense for the first few days of term on account of the possible importation of infectious illness.

But it is necessary and very important for schools to protect themselves still further; for we sometimes have *careless* parents to deal with—parents who, not meaning harm, do incalculable mischief.

In addition to the careless parent there is a still more

dangerous individual—the parent who does not believe in infection.

I think, therefore, that every school, public and private, should supply a form of “certificate” to parents, to be brought back, signed by the parent, when the boy returns; and if he return without it, he should be kept separate from his school-fellows until it is obtained, or until, by the telegraph, a satisfactory answer has been received.

But I do not think it is reasonable or fair, as is sometimes done, to compel a parent to incur the expense and trouble of obtaining the signature of his medical adviser to a document which the parent can sign himself as efficiently and truthfully. The form of certificate might be as follows:—

THE PREVENTION OF INFECTIOUS ILLNESS
AT SCHOOLS.

Obverse.

There have been the following cases of infectious illness
in my house during the vacation:—

1. Nature of illness.
2. Date of commencement of the last case of the illness.
3. Precautions that were taken.

Name.

Name of School.

4. My son....., who is at school at.....
has (or has not) had this illness.

(Signed),

Parent or Guardian.

*This should be posted to the Master a week before the return of the
boy to school.*

THE PREVENTION OF INFECTIOUS ILLNESS
AT SCHOOLS.

Reverse.

There has not been a case of any infectious illness in my house during the vacation, nor has my son, to my knowledge, been exposed to any infection.

(Signed),

Parent or Guardian.

The School Authorities regard the following Illnesses as infectious :—

Influenza.	Chicken-pox.	Relapsing Fever.
Scarlet Fever.	Measles.	Mumps.
Diphtheria.	Epidemic Roseola.	Whooping-cough.
Erysipelas.	Typhus Fever.	Ringworm.
Small-pox.	Enteric Fever.	

This should be posted before the boy returns to school, or sent with him.

THE PREVENTION OF INFECTIOUS ILLNESS BEING DIFFUSED
THROUGHOUT THE COUNTRY BY MEANS OF SCHOOLS.

Scarcely a year passes without some infectious illness entering a school, through the contraction of infection during the passage from *home to school*, and this is accounted for by a previous transmission of an infected patient from *school to home*. That is to say, a boy soon after his return to school falls ill with some infectious illness, although there is none in the school, and none in the home or neighbourhood. It is, therefore, evident that it has been caught *en route*.

Now, I am strongly of opinion, on the basis of facts, that this opportunity of infection arises largely and

frequently (I regret to say) through the unscrupulous action of some school authorities, and the reprehensible selfishness and carelessness of parents. For instance, a pupil falls ill towards the end of term, and instead of waiting until he is free from infection before he is permitted to travel in railway carriages and cabs, the parent desires his return home, "as the poor boy," they say, "will feel dull at school during the vacation," totally regardless of the track which he leaves behind in public conveyances. This act does not occur merely occasionally, but occurs frequently in some schools, notwithstanding that it is a serious offence, and one, indeed, punishable by law. There is the absolute absence of consideration for others in such a course; and it is accountable for a great portion of the infectious illness in schools through the transmission of infection from one school to another. I know one instance where it occasioned the death of a mother and her daughter.

INCUBATION PERIOD OF INFECTIOUS ILLNESSES.

My information and guidance for medical officers, masters, and parents, in all that relates to infectious illnesses at schools, will not be complete unless I give a clear statement of the "periods of incubation" or latency of these illnesses—*i.e.* the interval between exposure, and the manifestation of symptoms. By so doing much annoyance to parents will be obviated because they will then know the natural history of infectious seeds or germs, and will understand better that these seeds, like every other seed, have a specific time of development; and that all that is required by school authorities is an observance of the periods of their development, with a view to the preservation of the health of the boys in school.

In legislating, however, for the prevention of infectious

ailments, it should be borne in mind that they are undoubtedly infectious before any symptoms are manifest, even after the minutest scrutiny. How long before is at present not determined; but if forty-eight hours were allowed beyond what I here tabulate, I think ample provision for our deficiencies would be provided, and infectious illness be more readily extinguished.

To elucidate my meaning: suppose a case of mumps occurs in a family, where there are four other children who have not yet passed through the illness, and it is desired to prevent their infection. The next case will probably be due on the nineteenth day, but may occur as early as the fourteenth day: if the first case has only infected one of the four, and if the new patient (unknown at present) be left amongst the other three, it is probable that he will further infect one or more. The proper course, therefore, is to separate the children from each other on the twelfth day.

The following table (p. 440), will serve as a rough guide, but all points on which doubt can arise should be referred to the medical authority.*

In investigating the period of incubation of infectious diseases it is well to remember that it can only be accurately obtained from well-marked isolated cases, or from the beginnings and endings of epidemics: it is futile to trace the incubation period during the acme of an epidemic, while many cases are succumbing daily from the illness. I have tried, years ago, to effect this myself, and obtained chaos only in my results.

A knowledge of the incubation period of infectious illnesses is of the first importance; but the accurate knowledge of the period of scarlet fever is of such moment to all schools that no apology is requisite for discussing briefly a vital medical question in this treatise.

* See Author's Paper, *Lancet*, October 29, 1881.

INCUBATION.			
Name of Illness.	Most commonly on the	But with the range of	Remarks.
Influenza ...	3rd day	1-5 days	<p>Infectious during the catarrhal stage, which occurs for three or four days before the eruption appears.</p> <p>Infectious for one to four days before the parotid swelling is visible.</p> <p>Infectious during the primary cough, which may be three weeks before the whooping-cough commences.</p>
Scarlet Fever ...	3rd day	1-7 days	
Diphtheria ...	2nd day	2-7 days	
Erysipelas ...	4th day	1-7 days	
Small-pox ...	12th day	9-15 days	
Chicken-pox ...	14th day	13-19 days	
Typhus Fever ...	12th day	1-21 days	
Enteric Fever ...	12th day	1-21 days	
Relapsing Fever ...	5th day	2-16 days	
Measles ...	14th day the eruption appears	7-18 days	
Epidemic Roseola...	18th day	9-21 days	
Mumps ...	19th day	14-25 days	
Whooping-cough ...	14th day	7-14 days	

No incubation period, I think, is so variously stated by different authors as that of scarlet fever; I have heard it given from a few hours to twenty-eight days. Yet nothing is more certain, in my opinion, than the fact that it never extends beyond a week, and rarely lasts so long. During the time that scarlet fever is prevalent, it should be remembered that there is a class of sore throats—often to all appearance simple acute tonsillitis only, while at other times showing a membranous or sloughy appearance, with a complete absence of eruption on the skin—occurring in those who have already had scarlet fever: this kind of sore throat, however, is capable of passing on scarlet fever to an individual who has not already been affected. Scarlet fever is often spread extensively by this means; for, if the patient has suffered previously from this ailment, these sore throats are regarded as simple non-infectious cases, and are not consequently carefully isolated for three or four days; being unrecognized, therefore, as centres of infection, the incubation period of scarlet fever is miscalculated, entailing, in consequence, not only a scientific inaccuracy, but sometimes preventable disease and death.

The interpretation of these facts seems to me to be this. There are always a certain number of boys who have simple acute tonsillitis several times in the course of the year; and even when they have not an acute attack, their tonsils are chronically enlarged and full of accumulated secretion. On the occurrence of scarlet fever, the germs incidental to the illness apparently find a suitable soil for their development in the inspissated secretion of the tonsils of these individuals, and while they are themselves protected the germs are permitted to fertilize, which infect those who are unprotected.

Thus, A. has scarlet fever on June 1st, and is carefully isolated on the same day; but, previous to isolation, he

infects, or gives off germs which find a nidus in B.'s throat, who has already had scarlet fever, with a sore throat, which appears on June 5th. B., not being isolated, infects his school-fellows for a week. Amongst others, C., who has not had scarlet fever, is infected on the last day of the week, June 12th, and on June 16th C. shows symptoms of scarlet fever. Here A. is regarded as the source of infection of C., and his case accordingly is regarded as one of sixteen days' incubation.

Again, B. infects many boys, who have hitherto had scarlet fever, with sore throats only, on various days, and these again others, until some one becomes infected who has not suffered from scarlet fever, and in his case true scarlet fever appears, perhaps on the twenty-eighth day from A.'s isolation. We then hear of a case of twenty-eight days' incubation of scarlet fever. It is, therefore, imperative to isolate every case of sore throat during an epidemic of scarlet fever. In fact, sore throats have frequently so much serious meaning attached to them, that I isolate every case of sore throat of even the simplest character that ever occurs in a school, until I am quite clear as to its nature.

There is also another insufficiently recognized source of error in estimating the period of incubation of scarlet fever. And until these, and similar, errors are carefully eliminated, we must be continually hearing of scarlet fever having a long period of incubation. Some years ago the following incident happened to me. I attended a case of scarlet fever, and when a week had passed, I assured the master in whose house it had occurred that no more cases would arise from this first attack. However, many days after, another occurred, and at the end of a week I repeated, with confidence, my statement that no other cases could arise from the first or second cases; but that we had not yet been able to trace the

origin of the first. This was repeated again several times, until we had, I think, about five cases: all of them with an uncertain incubation period, and, generally, considerably over a week. I have mislaid my notes of the exact dates. These few weeks were anything but pleasant to me. The master, I have little doubt, thought that my ignorance of the period of incubation of scarlet fever was only equalled by my assurance in reiterating the statement that its incubation was never more than eight days, and rarely exceeded two to four days: notwithstanding this assertion of mine, each of these cases occurred more than a week after each other.

The accurate interpretation of the facts failed me: though I was convinced of the accuracy of my knowledge of the incubation of scarlet fever. However, by-and-by, the sequel appeared—the unknown quantity was discovered. The boys went home for the holidays; and one of the parents wrote to the master to say, that he regretted his son had been allowed to come home with his hands peeling from scarlet fever. This boy had never been ill for an hour, and consequently no one knew anything about his having scarlet fever: throughout the whole time he had gone about infecting his school-fellows, and the only surprising part is that he did not infect hundreds instead of units. Under such circumstances as these, it is not to be wondered if the incubation period of scarlet fever be variously estimated, as is at present done, from a day to a month. The slight ambulating cases must always be thought of and watched for.

By recognizing indubitable facts of this nature, the *number* of cases of scarlet fever will be diminished, and its *incubation* period will be accurately fixed in cases which would otherwise be misleading.*

* See Author's Letter, *Lancet*, June, 1883.

Epidemics will thus be less severe, less frequent, and the incubation period will be precisely settled.

I strongly affirm that it is a rare thing for scarlet fever to occur after the fifth day from exposure to infection, and never after the seventh day: I know of no reliable case on record to the contrary.

DURATION OF INFECTIVENESS.

In the present state of medical science this question cannot be definitely settled, for sufficient accurate data are not available on which to base an opinion, the requisite facts for an absolute conclusion being very difficult, if not impossible, to obtain; for practical purposes, however, we must form some provisional rules to guide our conduct.

The practical question is this: At what date may a boy who has had an infectious illness rejoin his school-fellows? or, safely return to school from home? or, be allowed to go home? Under this section I only consider the question: *When a boy has had the illness himself, how long does he continue infectious?* All other matters have been previously discussed. I think the following table will most accurately give the requisite information.

TABLE SHOWING THE DURATION OF INFECTION WHERE EFFICIENT DISINFECTION IS IN FORCE.		
Illness.		Period.
Influenza	... ..	The boy may enter or return to school at the end of ten days.
Scarlet Fever	...	The boy may enter school when all desquamation has ceased and the throat is perfectly healthy— <i>i.e.</i> in from five to eight weeks. This is the only safe rule to adopt at the present time in

Illness.	Period.
	the management of schools, for it is impossible to say accurately when the contagion ceases. But I am far from believing that scarlet fever is infectious beyond a very few days from its commencement—possibly only during its febrile stage— <i>provided</i> the skin, and the clothes worn during that period, have been thoroughly disinfected.
Diphtheria	The boy, after a mild attack, may enter school after fourteen days; or as soon as his strength permits after a severe attack, convalescence having been fully established; this may take many weeks.
Erysipelas	The boy may enter school when all desquamation, especially that of the scalp, has ceased: from three to four weeks.
Small-pox	The boy may enter school when every scab has fallen from head and body—average time, about six weeks.
Chicken-pox	The boy may enter school when every scab has fallen from the head and body—average time, about three weeks.
Typhus Fever	The boy may enter school when his strength has sufficiently recovered to permit, which in a mild case, such as occurs amongst children, may only take fourteen days; whereas, in a severe case, it may require many weeks.
Enteric Fever	The boy may enter school when his strength has sufficiently recovered—average time, from one to three months.

Illness.	Period.
Relapsing Fever ...	The boy may enter school when his strength has sufficiently recovered—average time, four weeks.
Measles	The boy may enter school when all desquamation and cough have ceased—from two to three weeks.
Epidemic Roseola, or Roserash	The boy may enter school after ten to fourteen days from the commencement of the attack, according to its nature.
Mumps	The boy may enter school fourteen days from the commencement, unless orchitis supervene on the 8th day—which occurs at, and after, puberty—when it may take fourteen days more.
Whooping-cough ...	The boy may enter school when the cough has quite ceased, or else six weeks from the commencement of the whooping.
Ringworm	The boy may enter school when all active growth has ceased; but even then he should be under daily medical supervision for a week at least, and at frequent intervals subsequently, until not a broken, or loose, hair remains.

The adequacy of these regulations is proved by the fact that for nearly twenty-three years I have acted upon them without mishap. I have never known a case sent back to school after such a period of isolation, or detention, to infect others. But still stronger evidence exists in this fact—that in adopting this course, I have never conveyed infectious illness to a boy's home (where there

were frequently young and susceptible children) on his leaving school for the vacation. Of course the time I have allotted may be unnecessarily severe: on this point I cannot at present be quite sure, but in so important a subject I deliberately prefer to keep as far as is reasonably possible from the border of definite risk.

This table has been compiled on the assumption that the school authorities protect themselves with respect to the boy's infected hair, skin, and clothes. It is of no use whatever trusting to parents, for the responsibility of sending infection amongst several hundred boys generally does not seem to weigh with them; and, while one parent is very careful in every detail, another is as careless. Accordingly, when there exists the faintest suspicion that a boy is infectious himself, or has left an infectious house, he should not be allowed to mix with his school-fellows until a responsible school authority has washed him thoroughly from head to foot with disinfecting soap, and fumigated every article of clothing with sulphur or chlorine—or, still better, until every article has been passed through the disinfecting chamber.

If the school is not provided with proper means, as is necessary in all large schools, for purifying infectious boys and their clothes before they enter school or return home, the period of isolation must be greatly extended, as shown in table, p. 448, much to the annoyance of all concerned, and entailing a considerable waste of money from loss of time that should be spent in school.

I firmly believe that *all* infectious ailments are communicated by means of the clothes of persons who visit those infected; but whether this be endorsed by others or not, it is the only safe rule to act upon in the management of great schools. That some of them are thus communicable, all will admit; that some are not so, may be an open question. It is, however, childish to ascertain

how near we can approach fire without burning our fingers; and where life and health in a great school are concerned, we should keep as far as possible from any chance of infection, and regard every one coming from an infected house as *not* being above suspicion, and act accordingly. Instances in which scarlet fever, small-pox, and typhus fever have been carried from one person to another by means of the clothes of a third person who has not been ill are too common to require more than the

TABLE SHOWING THE DURATION OF INFECTION, WHERE
EFFICIENT DISINFECTION IS *NOT* IN FORCE.

Illness.	Duration of Infection.
Influenza	Two weeks.
Scarlet Fever	Three months.
Diphtheria	One month.
Erysipelas	One month.
Small-pox	Two months.
Chicken-pox	One month.
Typhus Fever	Six weeks.
Enteric Fever	Two months.
Relapsing Fever	One month.
Measles	One month.
Epidemic Roseola	One month.
Mumps	One month.
Whooping-cough	Two months.
Ringworm	One to twelve months or more.

statement of the fact. I myself can testify to measles and epidemic roseola being also thus conveyed, and Dr. Bristowe has related how whooping-cough has been transmitted in this mode. All boys, therefore, coming from an infected house should be disinfected by the school authorities; for the neglect of disinfection of the most insignificant article of wearing apparel may be

the occasion of an infectious illness, and the origin of serious mischief.

It is incumbent on schools to make the most stringent rules for their self-preservation from these illnesses; but these rules should be founded solely on the natural history of infectious diseases, and should be neither mere whims nor arbitrary dicta, but as true to accurate facts as medical science at present permits.

X.

SELF-REGULATION OF HEALTH.

If boys are to be strong and healthy while at school, free from acute serious illness and chronic ailments, not only must schools introduce the provisions I have previously advised, but boys must also be taught how to manage themselves. Much can be done for them by the occasional guidance of parents and masters, and much can be effected by an appropriate word in private; but the boy cannot always have a guide at his elbow, and must, therefore, learn to manage himself properly, according to his constitution, and to find out that Nature will not suffer any infringement of her laws with impunity: an experience only gained after many serious trips.

1. He should understand that where health is vigorous, the internal arrangements are not easily disturbed, and diseases from without have a hard struggle in planting themselves.

2. In order to ensure this high state of health, the first essential is "regularity of life." Nature abhors sudden changes of all kinds; thus, in the daily life, proper clothing should be adopted, according to the seasons; regular sleep; adequate time for regular meals; proper time for regular exercise and work.

3. The "amount of food and exercise" must be balanced; evil results from excess of either. An appropriate amount of food when work is being done is

excessive on a day of idleness. If, therefore, a boy takes a fair amount of food when in exercise, he must not, during a succession of wet days, with no exercise at all, continue to eat the same quantity. All diet should be evenly balanced; it should neither be in excess of exercise, nor should exercise be excessive in relation to diet; excess on either side tends to produce disease.

4. He should learn to manage his *stomach*; to observe what he can eat, and what he cannot eat without discomfort; to recognize that it is not wholesome to eat that which disagrees with him, and that a frequent repetition of the error will either make him ill speedily, or tend to disease in after-life. It is intemperate and disgusting to eat or drink too much: equally so, to eat or drink what it is known will disagree.

It is unhealthy to eat or drink between meals: the pastry or sweets which he desires should be taken immediately *after*, or should form part of a meal, and not between meals; for they upset the stomach—which requires rest between meals—and prevent the eating of his staple food. To enable the stomach to digest its food, active exertion should not be undertaken—certainly not within an hour and a half—after eating.

When fatigued, let him take light food only; never a full meal until the fatigue has passed off by rest and light refreshment.

Much ill-health and discomfort are occasioned by eating too fast: all food needs careful mastication, not only to reduce it in size, but also to mix it with saliva.

5. When not feeling quite well, and disinclined for food, it is best for a boy to abstain from food altogether for a few hours, and he will then right himself; but it is unwholesome, when unable to eat ordinary food, to resort to the pastry-cook, or hamper, and eat dainties, and thus make himself worse.

6. Boys should make a good meal at teatime, and avoid food afterwards, unless it be a little milk and bread and butter; but they are better without anything afterwards, for they will sleep more quietly and comfortably, and awake more vigorous in the morning.

7. Temperance in alcohol is essential; total abstinence imperative for the young.

8. It is not dangerous to drink cold fluids while the body is heated, provided the liquid be taken in sips; the danger lies in drinking a *quantity* of cold fluid, which is very injurious.

9. A cold bath should be taken every morning on rising. It is not only cleanly, but invigorating to the whole system.

10. He should be taught the importance, while he is young and active, of having his *natural relief* every day, without fail, at the same time, not only for his present health and comfort, but also to obviate a tendency to disease, which a neglect of this precaution entails in after years.

11. It is most important to him to see that his *feet* are kept warm and dry, and that boots are made to fit accurately, in order to prevent chilblains and other discomforts and deformities. Slippers should only be worn indoors; to wear them out-of-doors is both slovenly and dangerous.

12. The habit of standing with the back before the fire with the coat-tails raised is unhealthy, and very selfish, for there is usually only one fire for 30 to 100 boys, and others are thus deprived of its warmth. Sitting over the fire reading a novel on half-holidays, instead of taking healthy exercise, should never be practised. The whole weight of the public opinion of the school should be employed against these practices.

13. It is impossible to enlarge too much upon the

condition of the *skin*, which is a very important gland of the body, and needs considerable care. It should be always kept clean and sweet, so as to enable it to act with the greatest advantage; it should be covered with flannel to keep it warm, to absorb its moisture, and to prevent sudden changes of temperature affecting its continuous action. For active exertion, therefore, which will cause the skin to perspire freely, *special* flannel garments should be provided which will absorb the moisture during exertion, and allow the ordinary garments to be put on afterwards in the place of those which are damp from the exercise.

14. It is most unwise and dangerous to leave off wearing the thick flannel vest on the first warm day in the year; warm weather should be well established before this is attempted. In our climate the change is rarely safe before the beginning of June, except in the extreme south; and in some parts this period even is too early.

It is unwise to stand about or lie on grass when the skin is, or has been, perspiring; but every effort should be made to encourage the skin to cool gradually, a feeling of chilliness being a sure sign that the cooling is too rapid, and that exercise, or another coat, is required.

15. Very strongly indeed would I urge upon boys the necessity, from the point of view of health, of accustoming themselves to sleep as cool—not cold—as they can at night: the custom tends to health and vigour, and to purity of thought and conduct.

To spend the night in a bath of perspiration, as many do, from excess of clothing, is most debilitating and unhealthy, and tends to laxity of morals in the young.

16. And, most important of all, I would urge on all boys the great importance of purity of life in thought,

word, and deed. There is no true manliness without purity.

17. Exercise is the great remedy to keep down excess of animal spirits. It is also necessary in order to obtain the greatest amount of brain power for hard work, and to enable all the functions of the body to act with the greatest advantage. But this exercise should be taken on a comparatively empty stomach, or as soon as the preceding meal is digested, which varies, of course, according to the nature of the meal—from $1\frac{1}{2}$ to 4 hours. For the young and growing the exercise pursued should be that which requires rapidity and agility, rather than strength or violence.

18. The amount of mental work that can be borne is very considerable, almost indefinite, if life be regulated under favourable hygienic conditions, with proper diet and exercise, sufficient cubic space, adequate sleep, and with an absence of hurry and worry.

But there is nothing worse in the education of the young than to do as little work as possible during part of the term, and then, when the examination approaches, to work hard in a spurt. It is bad, physically, for the brain, and wrong, morally, to the character; and, worse than all, it is not sufficiently discouraged in our schools by those who are responsibly in charge.

One mode of effectually crushing the indolence alternating with industry would be, to take more account of the general work of the term, and mark it higher, than of the examination at the end. This would have a still further salutary effect, for it would make school examinations at the end of each term less of a test, and would thus abolish the habit of working for examinations, which is so detrimental to good work and thoroughness, and fatal also to the attainment of real knowledge.

Let it be remembered here, that physical exercise

develops muscles; mental exercise, brains. That excessive physical exercise deteriorates muscles, and arrests growth and development; excessive mental exercise deteriorates brain tissue, and mars its growth and development. Further, that excessive work, and deficient food (whether from actual lack of food, or from relative deficiency, as shown where the food is normal but the growth excessive) deteriorate muscular tissue. And excessive mental work (the excess being first exhibited by restlessness, irritability, and sleeplessness), combined with deficient food, causes deterioration instead of growth of brain.

19. Besides these physical conditions, "good temper, cheerfulness, and hope" are essential; together with uprightness of life and purity of motive. Deeply important as is the preservation of physical health, I must prominently include moral health, or the former cannot exist in its fulness.

20. And lastly, a boy should by all means resist the formation of the character of a "loafer:" it will cling to him for life. There is no more despicable creature in a school, or in "society."

XI.

DAY-SCHOLARS.

IN speaking of day-schools I refer only to scholars who are of the age to proceed to a public school.

Much may be said for and against the day-school system. To some boys it is an incalculable gain to be able to enter a good school, and yet reside at home, with the benefit of home influence, home comforts, and the society of mother and sisters, and possessing also the discipline and training of home economics, home sickness, and home trials. To others, however, this plan is most detrimental, for under its conditions they fail of developing into vigorous and self-reliant manhood.

On the whole, it will be generally admitted, I think, that for nearly every boy the boarding-school involves the greatest gain; his work is done more efficiently, he has more time for play, the games are better organized, and he learns the most wholesome lesson—which should be impressed early in life—of finding his own level: he there develops also that good feeling of comradeship which is salutary to every boy throughout boyhood and in after-life, and secures the inestimable boon of staunch friendship which often lasts as long as life.

To the few who only receive harm from being away from home, and to some delicate boys, the privilege of attending as a day-scholar at a good public school is

very great, but this is not yet sufficiently recognized by parents.

It would be very desirable if it were more the fashion with parents who reside near a good public school to enter their boys as day-scholars, instead of regarding it as an imperative duty to send them away as boarders to a distant school.

It seems to me also that the day-school system in connection with our great public schools could be well extended with general benefit, if a certain house, or houses, were set apart for day-boys, where they would live and eat, work and play, under exactly the same conditions as those prevailing in boarding-houses, but with an absence of dormitories, so that they could spend their evenings at home, after preparation, and thus see their mothers and sisters every day, and sleep at home. They would thus obtain some of the benefits of home and school-life combined. By this means day-boys would be better able to join in school-games, and the great defect in the day-scholar-system would be removed.

For those who do not reside near a good public school the system of boarding their sons at a school at a distance is a matter of absolute necessity and not one of choice.

I must not, however, consider the effect on the boys only, but also on the school itself where these boys are admitted. Where the parents are high-principled, and uphold the school authorities, conforming to school rules to the letter, day-scholars are a source of benefit to the school by the influence which they exert on the boy himself and on the school friends who visit at his house ; but where the parents are the reverse, and allow laxity in the boy's conduct and in his observance of school rules, and where the home is ill-regulated, the practice may cause much mischief to the general tone of the school.

Work. The *arrangement of work* in the day-school system, to which I have already referred (p. 235), is exceedingly good in respect of commencing only at 9 a.m.; allowing more time for sleep, and ensuring a good breakfast before work is begun. But this good element, I grieve to say, is far outweighed in some day-schools by an absence of provision for *play*, and an excess of *home-work* for preparation in the evening.

The latter is frequently the hardest toil of the day. It is work which requires the guidance of the teacher; and yet it has to be carried out without assistance, unless the parents provide a home-tutor, and at a time when body and brain are fatigued. I have heard of such children, often girls, sitting up at work until 10 p.m., and rising at 6 a.m. to resume the unfinished task of the previous evening. I know of others who work at lessons during meal-times, as well as in every spare moment, and, when unfinished, continue them in bed, because parents insist upon books being closed at 9.30 p.m. Yet it is often said of these children that "they won't work," when the truth is that they are *too* willing.

Play. In some of our day-schools the physical education is as well organized as the mental; while in others the school authorities have never realized that it is part of their duty to arrange any exercise for the boys committed to their charge.

This is one of the great disadvantages of day-schools as compared with boarding-schools, where games, more or less, form a necessary part of the education of the young. No place is set apart for games, and the work is so arranged that in winter no daylight is left during which the boys can play, for the school hours commence about 9 a.m. and terminate between 4 and 5 p.m.: whereas boys

attending a day-school require as much exercise and play as those who are educated at a boarding-school. Boys allowed to grow up without having the benign influence of boys' games as part of their education almost invariably manifest an undesirable precocity.

Moreover, all sound experience shows that adequate exercise is absolutely necessary to produce the highest state of vitality in the body; and the brain, being part of the body, participates in its increased power. It is most unreasonable to expect a healthy vigorous brain without a well-constituted body; and the converse is also true.

It seems to me that the best arrangement for exercise at day-schools would be to allot from 2 p.m. to 4 p.m. every day to games, when the whole school is assembled, and to abolish the whole holiday on Saturdays. This would, I know, prove a distinct disadvantage to masters of day-schools, who often spend from Saturday to Monday away from home. But when one estimates the length of the vacations three times a year, it seems scarcely necessary or right to consider the masters on this point, when it can only be done at the cost of the health, well-being, and character of the school.

Another disadvantage which must not be overlooked *Illness.* is, that day-scholars may bring infectious illness into a school unless great vigilance and circumspection be exercised both by parents and the school authorities.

A careful consideration of this question is, therefore, imperative. In the case of infectious illness occurring in the homes of day-scholars there are three methods of procedure:—

1. To ignore it, and permit the disease to spread with disastrous consequences.

2. To prohibit the attendance of a child from an infected home, whether he exhibits the disease himself, or not, on account, in the latter case, of the possible conveyance of illness by the clothes from the sick to the healthy by means of a third person.

This plan is safe to the school; but a great obstruction to the education of a child, where the family is large and infectious illness frequent. It is a great hardship also pecuniarily, for in such case the child has to be absent from the school most of the term on account of the home-illness, while the customary fees continue to be paid.

3. To require the parent to provide a lodging for the day-scholar, to which he may be sent immediately an illness reveals itself at home. Here a certain period of quarantine is only necessary if the child has *not* had the disease, varying according to its nature.

In this case the head-master must adopt some recognized table of the incubation period of diseases, such as is furnished by the Clinical Society of London, Vol. XXV., Supplement; by the Medical Officers' of Schools' Association "Code of Rules for the Prevention of Infectious Diseases in Schools;" or by some reliable modern work on school hygiene.

4. In the event of the illness of the pupil, who is a day-scholar at a boarding-school, to permit him to be treated in the school sanatorium; but, in the case of the illness of another member of the household, the parents should find him a lodging. This would be a reasonable arrangement; for the infectious illness is frequently conveyed, in the first instance, from the school to the home. It would confer mutual benefit; though, in order to carry it out efficiently, it would necessitate sufficient sanatorium accommodation, so as to obviate crowding.

As I have already discussed the question of morality in boarding-schools, it is merely necessary now to mention that immorality in day-schools is not unknown, and to urge upon school authorities the duty of vigilant and judicious supervision, since the moral infection sometimes becomes exceedingly prevalent, provided, as it is, with ample covert even in day-school arrangements.

Morality of
Day Schools

XII.

GIRLS' SCHOOLS.

THE general education of English girls is still almost inconceivably defective in principle: it is quite fifty years behind the education of boys.

Notwithstanding this deficiency, however, our girls' schools, so far as I can learn, are quietly and unostentatiously making great improvement; but I should like to see introduced the alteration in the method of education that is requisite.

Much, if not most, of what I have stated in these pages relates already to girls' schools, or will do so, I trust, in time. I would impress upon the head-mistresses, and governing bodies of these schools and colleges, the fact, that girls require and deserve the same care and thought as is bestowed upon the education and training of boys; at present they do not generally receive it. For, as a rule, with some bright exceptions, I willingly grant, they are unsuitably housed, unwisely taught, and most improperly provided for at night, both as to bedroom and bed accommodation.

The *great defect* in most schools for girls is the utter neglect of *physical education*; whereas it should possess a *prior* claim to their intellectual education, if any difference be made at all. We need strong, healthy, vigorous women, and not fragile, fainting, insipid creatures; and yet no attempt is made to produce them, during the only

years in which they can be produced—the years of active growth and development. Their exercise usually consists of a stately walk in the streets, weather permitting; dancing, calisthenics, and deportment once a week; sometimes lawn tennis.

The exercise at present prescribed is not sufficient, nor is it of a suitable kind. Skipping, trapeze exercise, lawn tennis, swimming, riding, and rowing are more appropriate. Were girls allowed these exercises as part of their daily life, we should cease to see the frequent

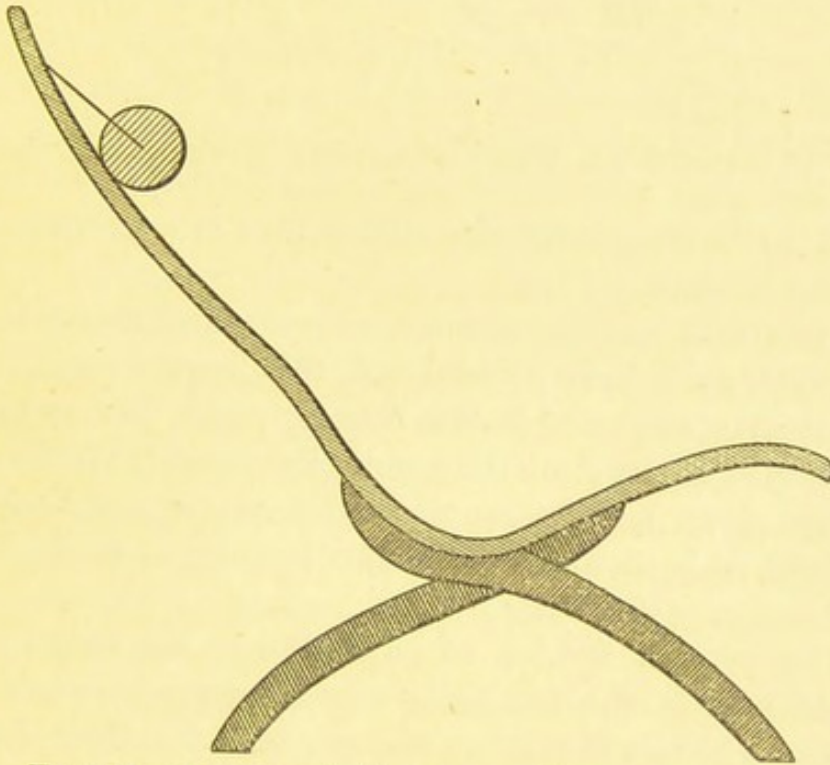


FIG. 31.—LEIBREICH'S RECLINING CHAIR OR COUCH.

curvature of the spine, and consequent ill-health; and those wretched spine-boards, on which girls are still in some schools doomed to recline, could be used as "firewood." A girl's back is by nature long, and needs a chair with the support of a back during lessons; and during the three years of very rapid growth—from eleven to fourteen years of age—when the girl suddenly

develops into a woman, rest on the sofa, or on Leibreich's reclining chair (Fig. 31), or in the prone position (Fig. 32), may also be allowed with benefit during the preparation of lessons. But the regimen for straight backs in girls

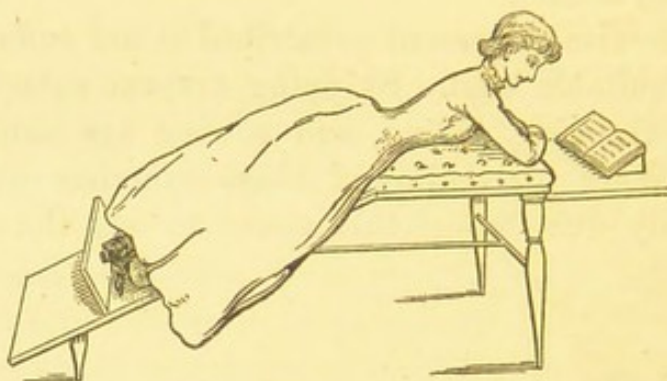


FIG. 32.—COUCH FOR PRONE POSITION. (AFTER NOBLE SMITH.)

must be thorough exercise whilst they are growing, and not backboards.

Girls need exercise as much as—or, more than—boys; and yet, as I have pointed out, this requirement is all but utterly neglected in this country; and, just as in the allowance of sleep for the young, the error is on the side of too strict a temperance. Girls require as *lively* an exercise as boys, and would enjoy it quite as much.

Girls' work.

The present fashion of education is the very way to produce *girls* who are useless as companions, *wives* who live on a sofa, and *mothers* who are unfit for their duties. Besides, if greater pains were taken to make vigorous bodies, we should have more vigorous brains, so that a double gain would result.

Girls' brains grow with their muscles; and vigorous brains cannot be produced without vigorous muscles—they grow concurrently.

Why do girls fail in health directly they undergo hard mental work, sometimes becoming incapacitated for life

—physical wrecks, and the victims of hysteria and other neuroses? Simply because they and their friends try to make them do the impossible. If we are to have a higher mental education for girls—of which they are mentally quite capable—they must not be pressed during those years when their growth and development are so enormous—from 11 to 14—when they leap, as it were, from childhood to womanhood at a bound; for all their nervous force is expended in this development.

Nor must teachers fail to recognize the difference in the constitution between the boy and girl. *Continual* application to work from day to day, from week to week, and from month to month, should never be enforced on girls, nor even should they be allowed to make the effort; periodical cessation and rest should not only be encouraged, but also imperatively enforced.

Their mental education, again, must proceed *pari passu* with a thorough physical education; otherwise, with rare exceptions, it must end in failure and serious lifelong misery to the girl. If we cannot yet manage both in Great Britain, let the mental education remain as it was, and the physical education be undertaken more completely, so that girls may be prepared by degrees for the higher mental education, and become better suited for their sphere in womanhood.

At the present time a girl's education is *effeminate* to a degree; whereas the requisite is that it should be only *feminine*.

Why is it considered unladylike for girls at school to be allowed any other exercise than a formal walk in the street? There is no conceivable reason for this. The lady who has the courage to break through the spell, and establish a good school for girls, in which their physical education shall be as well organized as their mental and moral education, will deserve well of her country, and

will carry out one of the greatest and most needed reforms of the age.

I further condemn the neglect, as a rule—happily not without exceptions—of the morning cold bath for girls; there is nothing that so tends to create health and strength, apart from the question of cleanliness. Girls are usually restricted, to their great detriment, to a warm bath once a week.

It must not be forgotten that girls are naturally more subject than boys to nervous excitement, but this could more effectually be kept under control by a sounder physical development. Defects in eyesight, too, unremedied during childhood, will not only foster, but create a nervous constitution. In his paper on the mental affections of childhood and youth, Dr. Langdon Down, writes:—"If there is one thing more certain than another about the production of *Idiotcy*, it is the danger which arises from the culture of only one side of woman's nature. There can be no reason why the faculties which they possess should not be cultivated so as to make them not only fit to be 'mothers of men,' but also companions and helpers. My statistics point to the importance of training our sons to be temperate, and our daughters to be self-possessed."

On account of this nervous condition, I think competitive examinations for girls, as a rule, are bad. Witness the terrible breakdowns which the physician so often sees resulting. If this age be one in which young people cannot live unless they are competing, let us err on the right side; and let our girls be taught to excel in every womanly exercise, in preference to nervous excitement, and a preternatural development of the emotions. But why are our girls what they are? Some of them nothing but nerves, others nothing but emotions, others ready to faint on any, or without any, provocation. They

are simply suffering from their faulty education, their narrow mode of life, and their preposterous fashion of dress. We want more muscles and less nerves in girls, if we are to have them healthy and vigorous.

If the physical education of girls were properly carried out *from the beginning* the necessity would never arise for the "back-board" which is seen in most girls' schools, and on which they are—often unwisely—doomed to lie for some portion of the day, instead of being employed in muscular exercise, which would develop brains, bodies, and characters.

The bodily strength and soundness of constitution of future generations depend, it is needless to say, as much on the health and stamina of our women of the present as on that of the men.

The absence of daily regular and sufficient exercise renders girls listless and apathetic; and entails pallor; amenorrhœa; constipation with its sallowness, foul breath, and depressed spirits; crooked backs and stooping; and knock-knee and flat-foot with its characteristic awkward gait.

It is important, too, that parents and teachers should instil into their girls the fact that Nature, in providing for the survival of the fittest, has enjoined that a clean and clear skin, clean and glossy hair, clean white teeth, and a light, springy, graceful gait will cause their society to be sought after; while a muddy spotty complexion, a scurfy head, uncleaned teeth, and an awkward gait will cause their society to be shunned. If, too, the physical education of girls were more heeded during their growing years, there would be less emotional disturbance, less neurotic disease, and the bloodlessness of girls, at present so common, would be less frequent; for all these defects of girlhood arise mainly from the absence

of efficient exercise and recreation, and from the one-sidedness of their education.

The remedy, again, for cold feet, and chilblains on the hands and feet, which are so common amongst growing girls, is at least two hours' good hard exercise daily, instead of fires in bedrooms, hot-water bottles in bed, and hot water with which to wash.

At the present time the mental training of girls is too high in comparison with their bodily training, with consequent deterioration in development, in health, and in character.

It should be the aim of parents and teachers to instil into girls' minds the fact that it is their duty to try to be physically strong. They should be taught the necessity of being strong, vigorous, graceful, and naturally, instead of artificially, shapely. But a certain ordeal is necessary to attain this perfection of body, which can only be reached during the years of growth and development, and that is physical exercise, by which I mean games and amusements, and not "exercise lessons." This appropriate exercise not only involves muscular development, but is certain to produce a vigorous nervous tissue and brain capacity, and, above all, that strength of character which is so fine a trait in women.

In order to carry out the requisite physical education of girls, I would insist:—

1. That in all girls' schools, day and boarding, a playground should be provided where the girls can play. Even the suggestion of this will probably create a laugh and a sneer in many quarters, for the greater proportion of girls' schools have literally no place of any description provided for play.

2. That the necessary time should be allowed for play; that no girl should ever be longer in school than an hour without a "break," so that she may stretch her rapidly

growing limbs, use her lungs fully, and have a mental rest, and then a change of subject, and that the schoolroom should be freely ventilated.

3. That a suitable flannel dress should be worn, to enable the limbs and ribs to move without restraint. This dress should be put on before playing, and taken off after the active game has ceased.

4. That, above all, appropriate exercise and games should be organized, and varied as much as possible, in order that the whole frame may be developed in due proportion, never forgetting the character of the female constitution.

It may be asked, "What appropriate muscular exercise exists for girls?" Up to the age of puberty the same exercise should be common to both sexes; while after that age the games of girls should *gradually* merge into an exercise of a quieter character.

I will briefly mention such a list; but it should be remembered throughout that there is a difference physically between girls and boys; and that exercise and games should, in every instance, be adapted and regulated accordingly. In all the exercises I name, there should be proper clothing and appropriate boots, which should be changed as soon as the exercise is over.

First we have *walking, running, skipping, swinging, and jumping*, all of which are capital exercise, especially walking, but this should be taken in the country, with perfect liberty of pace and choice of friends, and should never be enforced as a regulation march. Then we have *dancing*, which is a splendid exercise when performed at appropriate hours in appropriate rooms, and tends to produce the grace of movement which is essential to a lady's education. *Gymnastics*, such as light dumb-bells, parallel bars, the trapeze, rings, horizontal bar and ladder exercise, may all be safely used and with the

greatest benefit. *Drilling*, and especially the military *physical drill*, too, is very useful, especially in producing an upright carriage. There is no better or more suitable exercise than *riding*. *Swimming* is cleanly, and would remove the tendency to "nerves" more than anything else; it is useful, besides, to others as well as to the agent herself. *Skating* is invigorating and health-giving beyond measure: it comes at a time, too, when there is more or less a deficiency of means of outdoor exercise; every available moment, therefore, should be granted for this exercise and enjoyment, and work might be well stopped for half the day—as the opportunity for skating recurs so rarely in this country—even if more time were given to work when the ice has broken up. Moreover, excellent exercise might be obtained for girls by the use of roller-skates on a good asphalted floor.

Rowing provides one of the best of all exercises for girls. It would soon banish the "back-board" from schools, for the muscles of the back would become so strengthened that weak backs would be straightened, and the curved spine and outgrowing shoulder-blade would become morbid conditions of the past. The exercise also develops the chest, and the abdominal muscles, together with the arms and legs. It should not be allowed, however, unless the girl has previously taken the trouble to learn to swim.

Cricket forms a delightful exercise for girls; *lawn tennis*, *racquets*, *fives*, *la crosse*, *golf*, *hockey*, *ringoal*, *croquet*, *base-ball*, and *battledore and shuttlecock* also. And if girls were encouraged to measure, mark, roll, and mow their own tennis lawns, it would not only provide a diversity of exercise and occupation, but would at the same time enforce the excellent lesson of acting for themselves, instead of being helplessly dependent upon others.

Cycling may be pursued with benefit, but in a costume

similar to that devised for riding. *Gardening*, too, would suit many a girl incapable of more active exertion ; and *natural history* excursions.

Were such exercises faithfully carried out, girls would not require special "lessons in deportment;" for, the muscles being rendered strong and elastic, grace and ease in their carriage would naturally result.

By such means the female figure would be improved, and its strength in staying power increased, together

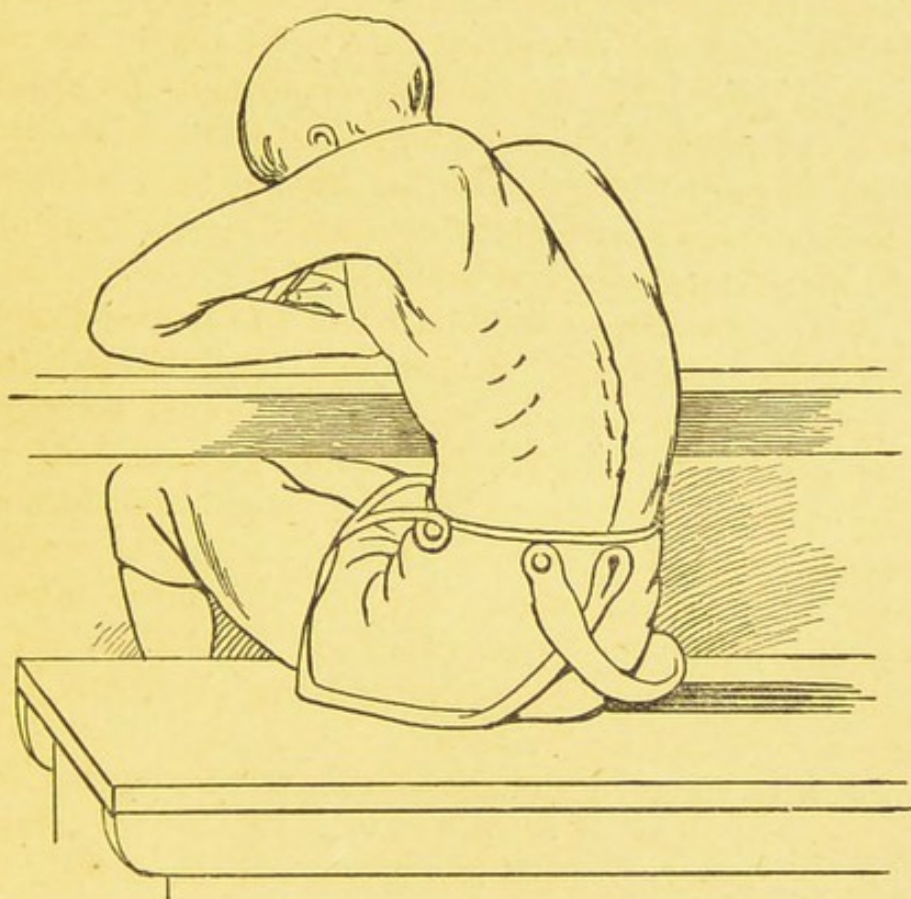


FIG. 33.—LOUNGING OVER TABLE WRITING OUT LESSONS.

with larger mental vigour, increased power of application and quickness, greater brightness in disposition, and strength of character.

Defects in
Girls'
education
leading to
deformities.

Another defect in the education of girls lies in the excess to which the practice of requiring lessons to be *written out* has been carried (Fig. 33); for with improper seats, unsuitable desks, imperfect light, and several hours' continuous work, instead of an hour in and an hour out, the pupils become so fatigued that they lounge over the table, support the head on the hand (Fig. 34), and a curved

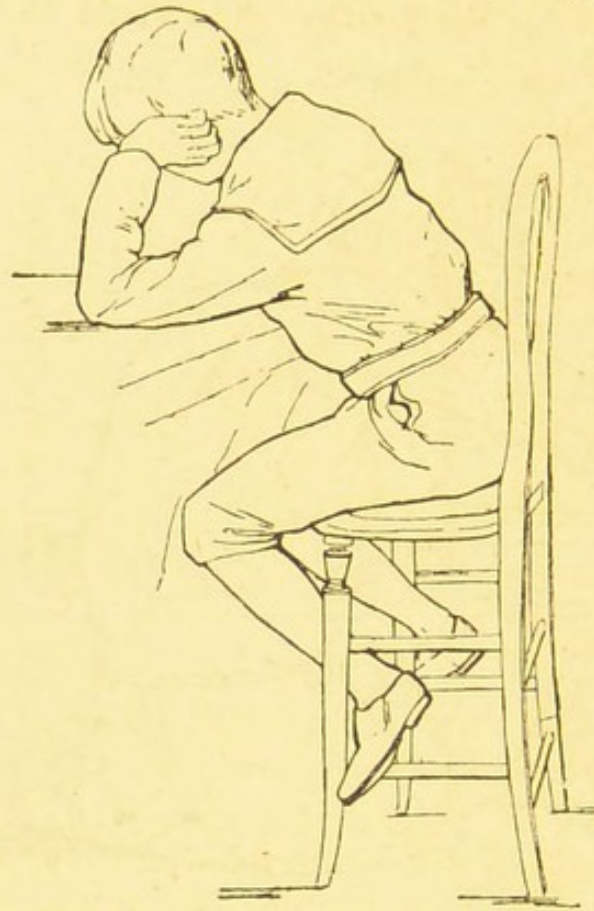


FIG. 34.—LOUNGING AND SUPPORTING HEAD ON HAND
OWING TO FATIGUE OF BACK.

spine and prominent right shoulder result. In fact, it is difficult to find a growing girl without an abnormally curved back, one-sided shoulders, a prominent shoulder-blade, and a tilted hip.

An improper position at the piano, where girls spend a considerable portion of their time, is another cause of

deformity of the spine, as is seen in the accompanying drawing (Fig. 35).

But the lateral curvature of the spine is not entirely owing to the causes above mentioned; it is partly due to the artificial support given to the spine during the years of growth, and the general constraint of the modern dress preventing the muscles from obtaining good healthy exercise, even where permitted, and thus becoming strong

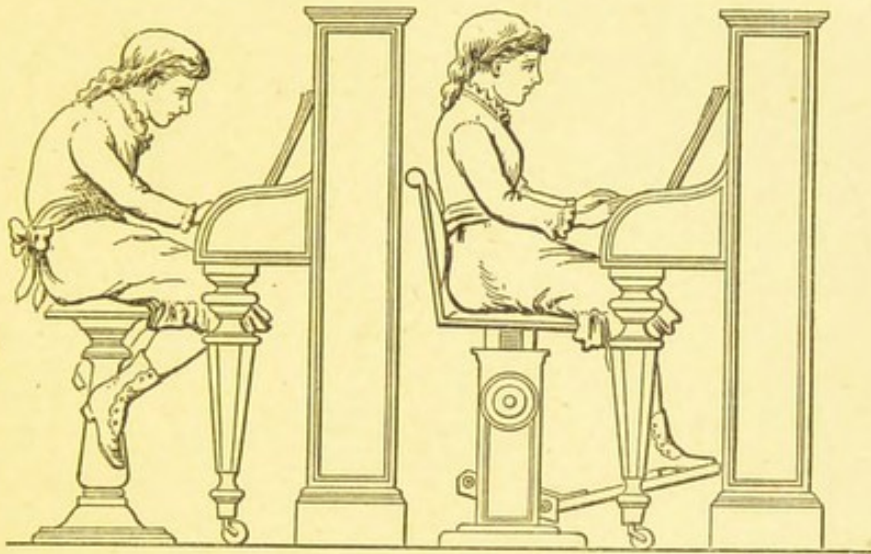


FIG. 35.—SITTING AT THE PIANOFORTE. (AFTER ROTH.)

and capable; in place of this, the muscles of the spine, through absence of work, become weak and flabby, and quite incapable of supporting the trunk in the upright position (Fig. 36). It seems, unfortunately, still to be necessary to teach that muscles cannot become strong and vigorous without sufficient exercise. The spinal muscles of the girl waste, and allow the spine to become deformed by reason of their consequent incapacity for the required exertion. *High-heeled boots*, too, not only cramp the feet, but deform them, and the spine and pelvis as well—an effect which cannot be too strongly deprecated in growing girls, who are expected to become women and mothers.

Girls, again, become knock-kneed and flat-footed (Fig. 37), causing the most ungainly gait, in consequence of the way in which they are taught to sit and allowed to stand. This deformity of knock-knee absolutely prevents a graceful or elegant carriage of the person.

For instance, they are taught that it is unladylike to sit with their knees apart, and accordingly they sit with

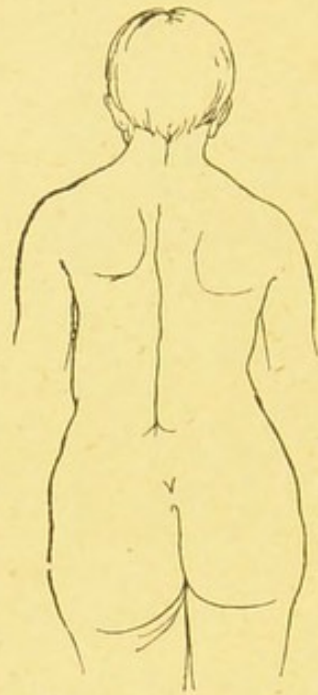


FIG. 36.—SHOWING LATERAL CURVATURE OF SPINE.

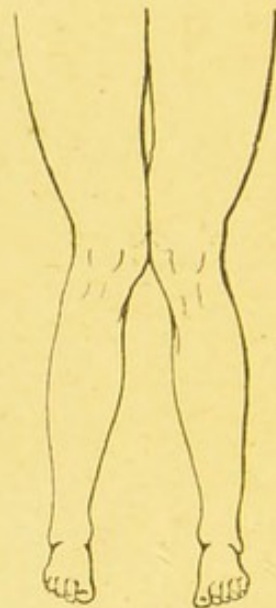


FIG. 37.—“KNOCK-KNEE.”

the knees together and their feet apart, with the result shown in Fig. 38. When standing at lessons the posture is usually that depicted in Fig. 39, and as each leg tires, it is rested in this position, producing knock-knee and flat-foot.*

Such deformities of person need not exist: they would be unknown if more care were taken at school in developing the bodies of girls to the highest standard of beauty.

* As these drawings were taken from life, they were more conveniently drawn from little children.

An effective way of preventing knock-knee and flat-foot in girls is to require them to sit, while learning their lessons, in tailor-fashion.

Another excellent position for learning lessons and preventing or remedying a curved back is that of kneeling at a table, which avoids stooping, and restores the natural curves to the spine.

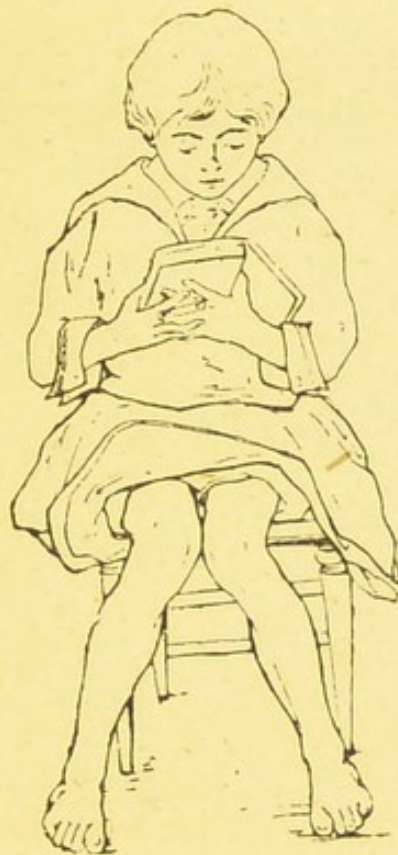


FIG. 38.—SITTING AT LESSONS.

When will these requisite changes be carried out in our schools for girls? When parents and the public demand that girls shall be better educated physically—and not till then.

Again, I would urge that the education of growing girls should not be carried out at the expense of motherhood: we do not want crammed heads, but strong

well-made bodies, fit for what nature requires. There is no sphere for the girl which can excel the virtues of *motherhood*; and if teachers and parents were more alive to their duties, and would see that their education consisted more in training the girl for the beneficent occupation of a *home-maker*, what a vast amount of happiness would be engendered thereby!



FIG. 39.—STANDING AT LESSONS.

If girls are to receive a higher culture, it is their physical education which must precede any increase in their mental education. Without this the process cannot be safely effected; for the mental powers too highly developed in women involve a physiological cost, which

her feminine organization will not sustain without injury more or less profound.

It is more essential for a nation to breed strong vigorous offspring, than to educate girls to the highest standard. By the highest *physical* education girls can be made strong, comely, and well-proportioned; while by the highest *mental* education (without the physical basis) they *may* be transformed into mere "blue-stockings."

By physical education I mean *games* and *recreation* which cheer and elate as well as exercise; not merely gymnastics and physical drill, which afford exercise without elation. These latter exercises are mainly suitable for the sickly and deformed, with the object of physical development and cure, rather than for the ruddy and healthy.

By physical exercise, too, I mean exercise taken out-of-doors; without this condition, at least half of its value is lost. For wet weather, *dancing* should be more resorted to, and special emphasis should be laid upon the endeavour to obtain the most graceful movements and carriage—only to be attained by means of well-developed springy muscles. Every educator of girls should feel disgraced at the lounging attitudes, and awkward gaits, which prevail at most girls' schools, with their lop-sided shoulders and crooked backs. For these are manifest tokens of the vicious system of education in vogue.

Symmetry is of paramount importance in women for ensuring normal race production, and healthy offspring. And while I hold that girls may safely receive a higher education than has hitherto been accorded, subject to the restrictions I have laid down, I would urge that their moral education is of more material consequence to themselves and the nation than their purely intellectual development.

With a physical education such as is their due, we

should, almost in a generation, eradicate the neuroses and the anæmia to which at present girls are predisposed, and in their place we should perceive a greater liveliness of disposition, together with more stability of character, and a lesser aping at man and his pursuits.

Morality. The observations I have made concerning morality, I would repeat here in a modified form, but in a tone no less strongly, since the subject is even more important for girls; and I would urge mothers to warn their daughters of the existence of evils in acts as well as words, and even acquaint them with some of the physiological facts which are discussed freely amongst girls at school. It is better for a girl to learn such facts purely from her mother, than from the loose talk of school-fellows; for it must be remembered, as a difficulty which has to be faced and not shunned, that there is an *innate* curiosity in young human nature—male and female—which *will* seek to be satisfied; and which, if not allowed its fitting satisfaction in the acquisition of knowledge, will degenerate into a vicious pruriency. “Whence came I?” is as natural a question for the child to ask as, “Whither am I going?” is for the adult; and it should be truthfully answered by the parent in a spirit of purity.

XIII.

VACATIONS.

CLOSELY connected with school-life, although not forming part of it, are the periods of rest between the terms at school.

A holiday, a boon to all workers, is a necessity for the young, who work hard, during their years of growth. Most of our large public schools give about four months' vacation in a year: seven or eight weeks in summer, four or five weeks at Christmas, and three or four weeks in spring.

In many schools the spring vacation is movable, and depends on the date of Easter Sunday, which occurs on some day between March 22 and April 25. It seems to me, however, that it would be much better for all, if the spring holiday were fixed, so that it always commenced at the same time, irrespective of the date of Easter Sunday; for even then Easter Sunday would most frequently be included in the vacation. Uniformity
of Vacation

By this means each term could be equalized to twelve weeks, and the Christmas and Easter vacations could be either five and three weeks respectively, or four and four weeks according to the convenience of each school.

As at present arranged the *spring* vacation is a source of so much inconvenience to parents who have children

at various schools, that the question deserves the earnest consideration of school authorities of endeavouring to adopt a uniform period for the spring vacation; parents naturally desire to have all their children at home at the same time; while, however, schools vary in the date of their spring vacation this convenient arrangement is impossible. If the universities can uniformly carry out this desirable plan, why not schools? It is certainly a matter that is ripe for the next head-masters' conference.

The purpose
of the
Vacation.

The purpose of the vacation, which some parents seem unable to understand and therefore continually grumble at the holiday, is, that the pupil and master shall, after hard and prolonged work, have a period of rest, or, at least, a change of scene and occupation, for the sake of health, and consequently for the fully successful prosecution of their work. As education is now conducted, vacations are an absolute necessity to the welfare of the pupil. It would, indeed, not be amiss if they were, for a season, totally abolished, for the reason that schools could then see for themselves that the present vicious course could not be continued of overworking the young, inasmuch as there would be, in many cases, neither pupils to teach, nor teachers to instruct, and thus the system would necessarily become rectified, to the advantage of both.

Without vacations, too, owing to excessive work, and insufficient sleep during term-time, growth would be more stunted, the nervous system more jaded, and disease more frequently generated.

Teachers, on the other hand, frequently regard vacations as an opportunity for extracting more work from the unfortunate pupil. Happily, however, most pupils do not rise to the occasion; while those who do, are the very pupils who most require their well-earned rest.

There is a further and equally important reason for holidays, though it is, for the most part, disregarded by some parents, but proves a priceless gain to others and their children. School-boys on the average are absent from home for about ten years. Are these ten years of such minor value to the child, that a parent should separate him from his brothers and sisters, and hand him over to the care of strangers, at the most critical time of his life, without a chance of exerting any personal home influence? It is only by means of the vacation that parents can "keep touch" with their children at all.

The sooner we cease to hear of the grumbling of parents about the length of holidays, and the sooner they more generally strive to understand their children's characters, and to exert a wholesome home influence over them during vacations, the more beneficial will it be for the children, our schools, and for the world at large. A little more personal intercourse between parent and child will tend, if parental responsibility be duly recognized, to make parents feel that the holidays are even too short to enable them to carry out their desires and fulfil their duties.

But why do we hear these periodic murmurs? Because, at school every hour is occupied; whereas at home the parent does not take the trouble to provide hourly occupation and pleasure for his children; the holiday time thus drags heavily, the child gets into mischief in consequence, and the parent "wishes those schools would not give such long holidays."

The holidays are not any too long for health; or for affording a sufficient opportunity to the parent for knowing, loving, and influencing his children.

Vacations involve another valuable use, especially for *delicate* boys, and for those who fail to grow and thrive in a normal way. The aim of parents ought to be, not

only to educate their children well, but also—and far beyond this object—to gain for them a sound, strong constitution, in spite of unhealthy progenitors. In previous pages I have pointed out that a healthy standard can be obtained, but only during the years of growth and development, that is to say, the years chiefly passed at school.

There is a large class of boys at school who, while never ill, yet, so to speak, are never well. Their *vitality* being low, they are generally below par. Their *work* is a burden; they manage it, but without pleasure or satisfaction. At the commencement of a term, when they are somewhat fresh, they work fairly well. At the end of a term they become jaded, and other boys, their inferiors in ability, but their superiors in physical stamina, pass them with ease. The master complains that such boys are listless and dull, and expresses the opinion that they do not strive to do their best; in fact, the work levied is so much in excess of their strength that all their endurance and capacity are dissipated. The master does not appear to realize that the receptivity of the individual brain, especially in those of feeble health, is no more capable of exceeding its normal standard than is a pint jug adequate to contain a quart; hence the nascent brain is damaged as the result of the unreasonable proceeding.

Their *appetite* is poor and fanciful; they desire dainty dishes rather than wholesome plain food, and always crave for what they cannot obtain. They constantly suffer from indigestion owing to debility, and to partaking of what is unwholesome and unsuitable between meals.

They readily "*catch colds*," which are difficult to shake off; they fail to *grow* as Nature intended, or, if they do grow, they fall off in weight.

In a word, the brain and body are unequal to the tasks enjoined; growth is in abeyance in quality or quantity, or both; and there is a general depressed state of health with its attendant discomforts. Those in charge are troubled with the ever-present fear of illness arising, and illness, when it supervenes, too often leaves a chronic ailment behind, or reduces the vitality to a serious degree. Yet, unhappily, no one dreams of attacking the cause by diminishing the work.

With a view to obviating this low condition of health, especially where family delicacy exists, and removing it where it has arisen from illness and other causes, parents should avail themselves of the splendid opportunities afforded by the four months' annual holiday incidental to school-life, and employ every endeavour to induce the highest condition of health by resorting to the seaside, a sea-voyage, or mountain air. Parents do not sufficiently take advantage of these aids; they expect, and naturally so, that their sons should work diligently at school for eight months in the year, and yet, when they observe a low state of health and imperfect growth resulting, they do not seek by every means to overcome the evil; the child therefore suffers throughout life from insufficient regard to existing conditions. What occurs at present is that the boy's *spring* vacation is spent in a town, or possibly in some low-lying, damp country residence. A *part* of the *summer* vacation is usually passed at the seaside, or in some equally favourable resort; while the *winter* vacation is occupied by evening parties, heavy or unsuitable suppers, and an attempt at imperfect rest some hours after midnight. I need not say that this is the worst possible scheme of life for a delicate boy. As a consequence delicate boys frequently return to school, although they have been free from mental work during the holidays, in a more

enfeebled state of health than before the school term had ended. This would not occur if parents were more thoughtful for the welfare of their children; for obviously they should return to school more vigorous after their rest, and fitted to cope more effectively with their work. I, therefore, impress upon parents the imperative duty of utilizing the vacations for recruiting the health of children who are incapable of severe work, and fail to grow. There would then be fewer complaints to masters that the boys are dull, and we should, by developing stronger bodies, improve the race.

The Necessity of Periodical Brain Rest.

When this world was formed, it was ordained that all living things, vegetable and animal, should enjoy rest. Subsequently it was enjoined that "by the sweat of his brow" should man live. It was decreed that there should be a daily rest, and a periodical rest once a week, and again once in seven years.

The exercise of function involves consumption of structure. Repair demands repose. If the work performed transgress the necessary period for repair, damaged structure ensues. Hence the importance of clearly understanding that *ex nihilo nihil fit* in the education of the young.

No vegetable or animal tissue can perform its functions without repose. The heart itself, frequently instanced as an example of continual action from birth to death, enjoys a period of rest after every beat, equal in length to the duration of its two contractions, and amounting daily to twelve hours. Growing tissues, again, require rest for replacing the result of wear and tear, and an extra supply to provide for growth and development.

Half-holidays are a necessity for teacher and taught; for the most excellent part of education and training is effected during them in the form of school games. They

are as essential for the development of the body as work is for the development of the brain, and they assist largely in the formation of character.

I would again urge, what I have already previously discussed, that it is unwise, nay, that it is unfair, to allot a half-holiday with the right hand, and take it away with the left in the shape of impositions. The child who suffers the most punishment is usually the one who needs the most fresh air and exercise for his work and health—in fact, he is often lazy, troublesome, or mischievous solely through its absence.

Sunday is usually called the “Day of Rest.” At schools, and especially at boarding-schools, this is a misnomer; for Sunday at school is a real working day, and rightly so. Where this is not the case, and the day is an idle one, the strain upon the teachers must be severe; for, with neither work nor supervision, some of the worst friendships are formed, and some of the greatest bullying occurs.

The ordinary worker in the world, who properly employs his Sundays, has fifty-two days of rest, or seven and a half weeks’ holiday in the year, and if Holy days and “bank holidays” be counted, over eight weeks of annual rest. The pupil at school forfeits, and justly, from thirty-six to forty-six Sundays, *i.e.* about six weeks’ rest. Thus school-children who have sixteen weeks’ holiday in the year (which is the maximum) lose six weeks’ rest in these working Sundays, so that their holidays amount to about ten weeks’ rest only in the year. If, then, school punishments are levied from half-holidays, and the holiday task is added to the working Sundays, how many days’ rest do children really obtain? An amount entirely insufficient for the work which is demanded! To deprive them, therefore, of their well-earned holidays is a policy which needs merely to be

mentioned to be stigmatized. This just arrangement, however, is constantly violated to a degree that deserves express condemnation.

Holiday
Tasks. I altogether protest, therefore, against "holiday tasks": they show neither rhyme nor reason.

Holidays being intervals for rest, and change of occupation, no work should burden them.

If the prevailing feeling throughout the country between masters and parents be that the holidays are too long, by all means let the effect be tried of curtailing them for a season, and let the result be watched. But to assign a certain period for needful rest and recreation, and then abstract a portion of it, in the form of a holiday task, is simply a pious fraud which injures all. To the industrious boy—who surely has well earned his holiday—it stands as a grim spectre daily throughout his holidays, as something that *must* be done, and his last few days are spoilt entirely. To the lazy boy it is simply a matter of perfect indifference, and I suppose he never opens his book until he has actually returned to school, or is on the schoolward route, when he bestows an unprofitable glance upon his task. There is another kind of boy who, when his holiday task is given, asks himself the natural question, *Cui bono?* This he answers in a way which satisfies his own conscience: he accepts the books, for which his father pays, without even condescending to trouble himself with their contents.

Whatever holidays, then, are allotted, let the pupil have them in full measure, without discount.

I have never been able to understand for whose benefit the holiday task is set. It surely cannot be maintained that it does the pupil or his tutor any good. Is it supposed to be a boon to the parent? There is only one aspect about it which I am able to see, and that

is its pious fraud, manifest enough to the dullest pupil.

As there are many teachers, however, who still believe in the efficacy of holiday tasks, and although I feel very keenly that children should be allowed to follow their own bent in vacations without the shadow of school tasks, I would urge that the holiday task should assume the subjoined form as an alternative, until this essential need of rest is completely grasped.

I would suggest that some small prize, or at all events substantial marks, might be fairly awarded for the following holiday work:—

1. A prize for the best natural history collection obtained solely during the vacations of the year.

a. Butterflies and moths, or insects, mounted and classified.

β. Wild flowers, ferns, mosses, or seaweeds, dried, mounted, and classified.

γ. Shells, fossils, or minerals.

2. A prize for the best piece of turning or carpentering.

3. A prize for the best sketch from nature.

4. A prize for the best map of the home neighbourhood, or the place visited.

5. A prize for the best recitation, composition, or diary of a tour.

6. A prize for the most accurate observations in any subject that may suggest itself, with a view to fostering or exciting originality.

7. A prize for *speaking* one of the modern languages learnt while resident abroad during the holidays.

The chief aim in most of these occupations, it will be observed, is skill in manual work rather than the cramming of book knowledge.

There is another phase of holiday tasks in existence which is literally a farce—so ludicrous that its citation

would be more appropriate in a "comic paper" than in this treatise. Some schools allow a mid-term holiday—an "exeat"—of a few days, and it will scarcely be believed that a holiday task is levied from the boys during this brief period! Comment would only detract from the ridiculousness of the proceeding.

The Remedy
for the Boy
who is Idle
at School.

But while I very strongly object, as a matter of school routine, to holiday tasks being allotted to all boys, I think idle boys could easily be converted into industrious ones, with infinite gain to themselves, their masters, and their school-fellows, if parents would follow the excellent course adopted by an intimate friend of mine.

He had two sons at a public school, and received a very unsatisfactory report in mid-term on account of their idleness. Their father did not chide them; he simply desired to cure them permanently. He therefore wrote and told them, that if he received such a report again, they would be required to perform their neglected work at some time during the year; that they could choose their own time; and that it was quite immaterial to him when the work was done. If they preferred the "term" for play instead of work, he had no objection, but the money he would have spent for their enjoyment during the vacation must be employed in providing them with a private tutor; since they must not expect to be permitted to play throughout the year.

At the end of the term, however, a similar report of idleness arrived. Nothing was said to them; but the following morning the private tutor appeared, and they were compelled to work daily throughout the vacation, to their intense chagrin.

This was a very simple arrangement—nothing but a transposition of work and play. The boys themselves chose to have their games at school and their work at

home, and this they had—but only for this particular term and vacation. They saw their father was in earnest, and a permanent cure ensued.

Could a more suitable punishment—or rather, *remedy*—have been found? Here wrong was committed by the boys' laziness, and the remedy or punishment, suitable, forcible, and natural, inexorably descended upon them.

I believe there is a similar remedy to be discovered for the intellectual and moral ailments of every individual boy, if only those in authority would seek.

XIV.

CONCLUSION.

ALL will admit that school life should be perfectly happy and healthy—the happiest and healthiest period of life. In these pages I have endeavoured to show how this result may be attained.

In considering the entire life of a boy at school, from the time he enters to the time he leaves, I have—though imperfectly, I feel—endeavoured to show what tends to increase and what to deteriorate health, what surroundings are necessary for the attainment of the highest state of health, and what are the causes, near or remote, of disease. I have also sought to point out that if there be one arrangement worse than another for a boy, one condition more detrimental than another to a whole school, it is that a boy should be placed under the care of a master who is lax in discipline, and has not the capacity of management. As a friend of mine has very aptly put it: “A good disciplinarian is not a man who punishes disorderly boys; he is a man in whose presence boys never think of being disorderly;” for a boy has simply the greatest conceivable contempt for a master—and there is no severer critic than a public-school boy—who is deficient in power of control.

The existence of good masters—masters naturally commanding respect for character and just administration,

no less than for learning—is essential to the production of good boys.

It will be said that I have spoken strongly about the evils of our great public schools. I admit it; and these schools are so vigorous that they can afford to listen to candid speech. But I have done so in no carping spirit. Our great schools are the glory of this country: their good points are universally known and allowed. But I cannot be blind, in my love of them, to their faults: they can be improved, and it is better that this improvement should originate from within, rather than be forced from without. Their defects must be eradicated. Those in authority—it may be from lethargy, perhaps from blindness—frequently do not do their best to minimize the evils that must exist in all human institutions. Facts can only be seen by those who are on the search.

Masters punish detected evils severely enough—often too severely; but they do not generally take the trouble to *seek out* the evils, mental, moral, and physical, and their causes, and strive to *prevent* their occurrence by appropriate provisions, like the physician in the case of disease: they seem only capable of dealing with evils when they *have been* committed, and too frequently little care, forethought, and prudence are taken to *prevent* their commission.

Very often it is not so much that individuals are wrong, as that a pernicious *system* exists, causing all the evil, and requiring an inherent alteration rather than the punishment of the individual.

The profession to which I have the honour to belong has ever been in the van in reforming wrongs: it has always possessed the courage of its opinions, and has ever been at the beck and call of distress—the more deadly the disease, the greater the sin, or sinner, requiring assistance, the more hearty and willing has been the help afforded by the medical profession.

In my endeavour to point out wrongs, and their remedy, I have simply done my duty to the best of my ability. As to the rest I have no thought; but leave results in other hands than mine. Respect for public opinion up to a certain point is prudence: beyond that, weakness.

“Yet do thy work; it shall succeed
Or in thine own, or in another's day;
And if denied the victor's meed,
Thou shalt not lack the toiler's pay.”

Faithfully I have tried to depict—from the physician's point of view—the weaknesses, and the possibilities of strength, in schools. Our schools are none of them perfect, and they vary very much, some being years behind others in medical and sanitary matters. I have also striven to point out how parents may send forth from home—and masters from school into the world—not only healthy boys, but boys with manliness, gentleness, generosity, and uprightness, able to withstand temptation, and willing to do their duty wherever and whatever it may call.

If my observations should conduce to the benefit of any school or scholar I shall feel amply repaid, and can ask no greater reward. In the words of Milton I would close, and say, “For he who freely magnifies what hath been nobly done, and fears not to declare as freely what might be done better, gives ye the best covenant of his fidelity; and that his loyalest affection and his hope wait on your proceedings.”

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