

repertory of really good tunes not now familiar, and could even undertake pieces of larger caliber than a mere hymn tune.

For leadership there will be needed either a good organ, which costs money, or a good choir, which costs labor. The choir is the best if one must choose, and one good thing about choirs is that they expect to rehearse—that is as well understood as it is that congregations do not expect to rehearse. But let no one confound a quartette with a choir. A quartette is not a choir, but only a small and non-essential although very important portion of a choir. The choir is needed first for leadership, and it must, therefore, be a body that can lead. But when we have the choir, particularly if both choir and organ are possibilities, as they are in most churches, we are then prepared to go a step further and introduce the music of impression, which falls to the lot of choir, quartette, soloist, or instrument, as distinguished from congregation; and when this sort of music is introduced, if one adheres to the high standard of composition that has been presupposed all through this article—the kind that has the indorsement of the experience of the churches of all civilized lands that have established traditions of the excellent, the inspiring, and the edifying in worship music—one soon finds that a quartette is not a choir, for it cannot sing what is written for choirs, and cannot always produce the desired and designed effect of that portion of such music which it can sing. The great and worthy examples of church composition demand volume of tone, frequently require the subdivision of the different vocal parts, often calling for eight and even twelve distinct vocal sounds at once, and producing some of the most sublime effects by contrasting the body of singers against soloists, or the voices against an instrument. Such music simply cannot be attempted by a quartette, and the narrow range within which a quartette is of service makes dependence upon such a body without a chorus a thing not to be thought of in a church which aims at the best in music. A chorus without soloists, or with one, two, or four soloists, as circumstances permit, can render the best music, but the chorus is the necessary element.

When the choir is large and good, it is so usual, I had almost said so natural, to think, Now these are the singers, let them sing. But the best music is the music of expression; the best education in music is gotten by playing and singing, and that is as true of a congregation as of an individual. If one desires to know the capability for expression that music possesses, he must attempt to express himself in music. So let it not be forgotten that the choir is primarily for leadership, and while it has an important office to perform in rendering the music of impression, the church that really aims at having the best music aims at nothing less than the congregational singing of such anthems as are suitable for congregational interpretation. Hymn tunes by no means limit the capacity of congregations; they can easily go far beyond them if they really desire to do so.

The essentials for good music, then, are: A congregation willing to exert itself to secure the desired end; a competent director; rehearsals; a full choir; and time. Very important, in fact almost essential, is a good organ, and other instruments are desirable. There are a number of other things that will be found most helpful, such as placing the words of everything to be sung in the hands of the congregation (in fact, they ought to have the notes as well), having such an order of worship as shall thoroughly incorporate the music as an essential part of the service, the making of the choir rehearsals open to the congregation and urging the latter to attend, and others. One detail of importance ought to be mentioned here owing to its relation to the numerous churches that are contemplating the purchase of new organs, because it can be provided for in that case, although the expense involved in making alterations will frequently prevent its being introduced in churches that already have satisfactory instruments; still, the change has been made in many cases. I mean the placing of the organist (who is usually the nominal director) so that he can look his singers in the eyes during the performance of their duties, and thus keep the interpretation under his own actual control. Space is lacking for the elaboration of this highly important point in an article devoted to the essentials.

But it is greatly to be regretted that in so many churches anything like the effective direction of the choir is rendered next to impossible by the custom of putting the nominal and responsible head and leader back to back in relation to his forces during services; and, in fact, so frequent and so serious are faults of arrangement in our churches that the director may think himself fortunate if he has not to contend with a position which makes it out of the question for him to judge of the relative volume of tone coming from the organ, because his head is buried in its case. The director, if he is also the organist, which is usually the best plan, if he is to produce the best results must have his keyboard detached from the organ and must sit facing his choir; but that is an essential for the best singing, not for the best music, and very excellent results have been attained with imperfect mechanical arrangements.



The Bad-Eye Factory

By Dr. E. W. Scripture

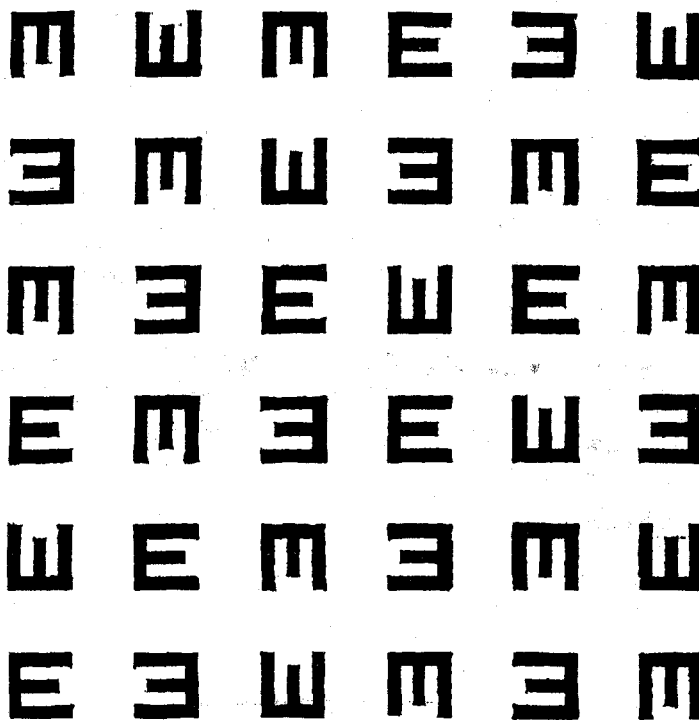
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Among the many kinds of bad eyes with which we are afflicted, the "school bad eye" is particularly exasperating from the fact that it is a gift—thoughtlessly and needlessly, but irrevocably—bestowed upon us by the school.

What is the "school bad eye"? There are many eyes that cannot see distinctly except at distances less than for healthy eyes. These are called "short-sighted eyes." About one per cent. of these eyes are highly abnormal; they are real deformities, and their owners were born that way. The others, which are not violent deformities, are the short-sighted eyes we usually meet. The short-sighted eyes can be detected in a very simple way. The card shown in Fig. 1 is so easy to use that there is no excuse for not testing every child by it at least twice a year.

The disadvantages of short-sighted eyes are great, and serious troubles arise from them in later life (*e. g.*, ten per cent. of all cases of one-sided blindness are due to short-

FIG. 1.—TEST CARD FOR DETECTING SHORT-SIGHTED EYES



DIRECTIONS

1. Cut this card out and place it on the wall in a good light, near a window.
2. Put a mark on the floor at 20 feet from the wall.
3. Place the pupil at this mark.
4. Let him keep one eye closed.
5. Ask him to tell quickly in what direction the signs are open—namely, up, down, right, left, as you point to them.
6. The eye that cannot read the signs correctly, without hesitation, is defective. An optician, a physician, or an oculist should at once be consulted.
7. Note down the names of two or three pupils whose sight has been proved good by means of tests in a very good light.
8. If on cloudy or gloomy days these pupils cannot pass the tests, no eye-work should be done by the class.
9. If these pupils cannot pass the test at 25 feet, when the card is placed on any desk in the room, that desk is improperly lighted.

Another very convenient method of testing the lighting is by use of very small type. This paragraph, which is set up in diamond type, should be legible at the distance of twenty inches from the eye.

sightedness; one author asserts it to be the cause of senile cataract); but these are matters too well known to be discussed here. What we particularly want to inquire is, Who is to blame for the occurrence of the trouble?

The number of cases of short-sightedness in which the trouble existed from birth or appeared during the first year or two of life is so small that we can say, Almost all short-sighted eyes are acquired.

How are these eyes produced? The answer is brief and concise: By work held too close to the eyes during the early years of life, when the eyes are soft. The effort to accommodate the eye to see near objects puts a strain on it to which it gradually yields; it actually becomes longer (the cases of lens-deformation are less numerous than those of axis-lengthening).

By what right is the school accused of producing these bad eyes? This question (like most other questions) has been carefully investigated in Germany. With a few exceptions, children enter school with good eyes. In the German village schools one per cent. to two per cent. of them are found to be short-sighted. In the primary schools the figure rises to 7 per cent.; in the grammar-schools it is 10 per cent., in the colleges 20 per cent. to 26 per cent., while in the universities it runs from 40 per cent. to 60 per cent. Three primary schools examined by Dr. Gelpke, at Karlsruhe, showed a steady increase in successive classes from 2 3-10 per cent. in the lowest to 17 1-2 per cent. in the highest; these figures, class by class, corresponded closely with the number of hours' class work per week, beginning with twenty and rising to thirty-seven. A similar increase is found in the classes of the German colleges. In one gymnasium (corresponding to high school and college combined) the progression was: Class I., 22 per cent.; II., 37 per cent.; III., 53 per cent.; IV., 58 per cent.; V., 67 per cent.; VI., 65 per cent.; VII., 68 per cent.; VIII., 78 per cent. Similar results have been obtained from other schools.

A curious table has been published concerning the number of short-sighted men found on one occasion among the different classes of recruits to the Bavarian Army. Among the farmers (village schools) there were 2 per cent.; among the day laborers (city schools), 4 per cent. to 9 per cent.; among the artisans, clerks, and tradesmen, 44 per cent.; among those who had passed through the next to the highest class in college, 58 per cent.; and among the college graduates, 68 per cent.

American investigations have not been extensive, but the results are similar.¹ At Yale about 60 per cent. to 65 per cent. of the students undergo a physical examination; of these over 30 per cent. are short-sighted. On the whole, the evil, though still very great, is considerably less than in Germany. Professor Mosso attributes the smaller number of short-sighted eyes in English schools and colleges to the large amount of outdoor sport. American school-children, also, are not generally overburdened, and as for college students, there is surely enough of athletics. It is in the benighted lands where football is unknown that the most short-sightedness is found.

As a conclusion, we can say that, with few exceptions, whatever short-sightedness there is we can consider as the price we pay for our education; and as our education comes mostly from the schools, we can lay the chief blame there. There would be no use in discussing the matter if it were not that much of the school short-sightedness is needlessly and wantonly manufactured by ignorant boards of education, principals, teachers, and other officials.

There are several processes of bad-eye making, all of them carried on in our schools; but I will here speak of only one, and that one a terrible one—terrible because absolutely needless. A single vote of the Board of Education, which could be passed in ten seconds, would remove it; a single vote would have removed it at any time in the past.

This process consists in forcing children to do work too close to the eyes. Work of any kind should never be held nearer than fourteen inches from the eye, even in the case of adults; young children should never be obliged to look at objects at even that distance for any length of time.

The way the school authorities force the children to violate this rule is by requiring them to do work which involves objects of such small size that they cannot see properly without bringing the objects close to the eyes. Here is the accusation; can we justify it?

First, let us enter the kindergarten. Here is a boy of six years at work on the first Froebelian occupation with the perforating-needle. He has before him a pattern (Fig. 2), and is sticking the needle through the little dots.

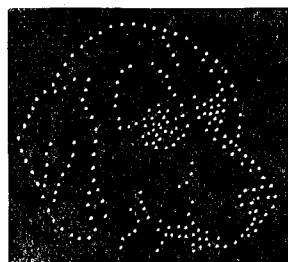


Fig. 2

Place this figure in your lap and try to stick pins into the dots. Your head will involuntarily bend down toward the paper, or you will unconsciously raise it toward your eyes. You cannot clearly see such fine objects at the proper distance. "But," the kindergarten teacher replies, "the child should be forced to keep the figure at a proper distance." It cannot

be done. Hold the figure at arm's length and try it. Even you, with your hardened brain, cannot, without a headache, keep up for five minutes the strain of attending to such minute objects. This pattern is no exaggeration; I have in my possession still worse ones.

The second Froebelian occupation is sewing with worsteds. It is the same thing as in perforating—only worse. There the child had a real dot at which to aim his needle; here he has often only an imaginary one.

The ninth occupation deals with cork or pea work. Fine wires or thin sticks are stuck into little cork cubes or soaked peas. This is not quite so bad as the others, but it is injurious enough.

Probably the most dangerous occupation given to children is that of making chains of straws and paper circles. The child is required to run a needle through a short piece of straw, then through a small circle of paper, then another straw, etc. Fairly bad is the stringing of wooden beads. In fact, it was while watching my own little girl in her efforts to string these beads that it first occurred to me that the kindergarten methods might not be absolutely perfect.

There is no excuse for retaining such exercises. The kindergarten is rich in newer and better occupations; the bad ones could be stricken out and would never be missed. On the other hand, everything that can be said against dangerous school exercises applies with tenfold force here. These exercises are among the very worst of all for producing short-sightedness, and are employed when the eyes are most easily injured. They are really "crimes of the kindergarten."

And now for the schools. Careful investigations in Germany have led to a statement of certain minimum requirements for the type used in school-books in order that the child shall be able to read at a proper distance. If these requirements are not satisfied, there is great danger for the eyes.

On your way home from business stop in a hardware-store and buy an ordinary mechanic's ruler divided into sixty-fourths of an inch; it will cost you a quarter, but you will learn enough to pay for it.

In the evening let your boys and girls bring together all their school-books. Apply your ruler to the type in the books. Here are the requirements to be met: Height of the smallest "n," at least $\frac{1}{16}$ inch; thickness of main line in "n," at least $\frac{1}{16}$ inch—i. e., somewhat less than $\frac{1}{16}$; distance between letters, at least $\frac{1}{32}$ inch; space between lines, at least $\frac{3}{32}$ inch; length of lines at most, 4 inches.

The following specimen of type comes very close to the requirements:

This law was not, however, originally established on the basis of experience, but was deduced as a necessary result of the arbitrary assumption that *A* is the most probable value.

Remember that these are the *minimum* requirements. Books containing type smaller in size, or more closely set, must be absolutely rejected. For all children the type

¹A summary of some of the results may be found in the "Reference Handbook of the Medical Sciences," Vol. V., p. 87.

should be larger; for younger children it should be far larger. How many of your children's books stand the test?

I cannot, of course, mention any names, but a short time ago I obtained a number of books now in use in the schools of one of our cities. Among them was a Primer; the type was fairly good for little children, but under the different exercises were lines in thin italics, which were trying even to my own eyes. Italics should be absolutely forbidden to children under ten years of age. Then came a beginner's reading-book; the very first lesson started out with fearfully fine-lined italics, and the type was not half big enough for the little eyes. Here was an old friend, an elementary Arithmetic, the same one I had when a school-boy; the best type in the book just came up to the least requirements for the worst books in the highest grades; more than half the book was in smaller type; and as for the minutely printed portions and the complicated fractions—Heaven preserve our eyes! And so on.

The remedy is a simple one. Let the educational boards of each town establish some such minimum requirements for school-books. I have found such a small proportion of permissible books that to avoid the necessity of teaching without books it would perhaps be necessary to appoint a date six months ahead for the time of going into effect. Or, how would it do to teach without books? In some schools of Germany the teacher uses the books, and the pupils learn by doing instead of memory-cram; the thought is suggestive, anyway.

What has been said will justify, I think, without further discussion the following rules:

1. All fine work, such as perforating, sewing, bead-stringing, weaving, drawing on cross-ruled paper, etc., shall be forbidden in the kindergarten.
2. Regular school work with books shall not begin till the completion of the seventh year of age.
3. Instruction in writing shall not take place before the tenth year of age.
4. As far as possible, chart and blackboard instruction shall be substituted for book and desk work in the lower classes.
5. Slate work shall be prohibited.
6. Books containing italics or script letters shall not be used in the lower classes.
7. No book shall be used whose smallest type does not satisfy the requirements previously mentioned.
8. Each child shall be tested for short-sightedness twice a year. Parents shall be notified in every case found.

Of course even such rules will not eradicate *all* the evils. Professor Michel, a noted ophthalmologist, remarks that, even with the greatest precautions in school work, a large number of bad eyes will still be produced by the schools. "There is, indeed, no doubt that employment in near-work is the chief cause, but this cannot be avoided in educating our young people. It is, however, a stringent duty of school authorities to keep the injurious causes down to their lowest limits, and to observe fully and completely the general hygienic requisites, if the frequency and degree of short-sightedness are to be kept within moderate limits and if the occurrence of serious results is to be avoided."

Each error avoided accomplishes something, and many accomplish much. Take a single case. Records of short-sightedness extending over nine years were taken at Giesen; the abolishing of home exercises in writing was followed by a marked decrease in bad eyes.

In conclusion, the matter has wide-reaching consequences. Every parent must ask himself if he ought to send his child to school. School instruction is necessarily the only possible instruction for the masses. The evils of the schools of to-day are small beside the evils of ignorance; even a bad eye is better than a criminal mind. The fear of injured eyes is not the only reason—but that is another story. The same objection might be urged by every parent, with the result that the public will assume an attitude antagonistic to the schools.



A good word is an easy obligation; but not to speak ill requires only our silence, which costs us nothing.—*Tillotson*.

Living by the Church

By Thomas Wentworth Higginson

The clown in "Twelfth Night" tells Viola that he lives by the church, and adds by way of explanation that he lives at his house, and his house doth stand by the church. The present writer has a similar juxtaposition, and finds it in many ways advantageous. My roses and lilies in the garden bed are safer than if they stood next to the police office; and when on one occasion two boys in the street had insulted some ladies, I collared one of them—the other running away—and took him before my reverend neighbor with much more confidence of results than if it had been his Honor the Mayor. The result duly followed, and was quite beyond my expectation; for the next day the boy who had run away, and whom I could not possibly have identified, came to see me unescorted, and, confessing that he and he alone was the culprit, asked for forgiveness. The Municipal Court could hardly have adjusted the matter so neatly and so promptly.

There constantly passes before me in full view a panorama of the daily life of the Roman Catholic parish-priesthood—the visits of high and low, particularly low—the arrival of hired carriages with weddings and baptismal parties—and the too profuse carriages for funerals. Then often at midnight I hear the stable doors roll back and the horse's hoofs soon after crunch upon the gravel, as the faithful priests drive away on some errand of mercy; and sometimes by day, as I am cutting the grass on the lawn, a man will come straggling past and volunteer the information that his wife has persuaded him to go and take the pledge before the praste, God bless him. Pledges thus taken, I am told, are almost sure to be kept, because they are given only for short periods, and perhaps renewed from time to time; the pledged man reporting at brief intervals and being kept under constant supervision. The regular church work I cannot watch, for the building lies on the other side of the house, accessible by a covered passage; but I know that good Father —, the predecessor of the present incumbent, once said to me wearily that he knew confession to be a divinely ordained ordinance, for no mere man would have put upon his fellow-men anything so hard. Knowing all this, it did not trouble me at all, but was only gratifying, when I used to hear often, on Sunday noon, the click of the billiard-balls through Father —'s open window after his two wearisome masses; nor do I believe that he heard that click recurring, as a record against him, before the Recording Angel, in that heaven where he now deservedly dwells. I have not heard it on earth since he went; but it is delightful to see his successors refreshing themselves sometimes, after a hard week's work, with a game of handball in the high brick court which they have built for that purpose behind the stable. His Reverence, the senior priest, can outplay either of his young assistants, to say nothing of their stout hired man, who occasionally takes a hand with them; and when the game is over, and the small boys of the parish take their turn in the court, it is pleasant to see his Reverence linger and advise them where to stand and how to await the ball. It is always agreeable to see dignity so intrenched and sure in its position that it can be familiar without fear. I can remember when in youth I lost my place as teacher at a boarding-school, mainly because I had given lessons in sparring to some of the older boys.

It is impossible to think of my neighbors except as men who would do for me any act of kindness, and whom I respect with my whole heart. No doubt they wish their Church to inherit the earth, and in their secret souls expect it: what branch of the reverend clergy does not? Nor have I been able to induce them to cast me out into outer darkness, as one of the wicked, though I have several times called their attention to that extreme necessity. On the contrary, their theory of salvation appears very elastic; they seem to regard all well-meaning persons as constructively or potentially within the pale of redemption; and my dear lamented neighbor—he of the billiard-balls—was wont to assure me that he did not worry himself about me at all. And yet it