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Drawing as an Element of Advanced Industrial Education.—(Concluded.)

BY C. B. STETSON.

STEPS IN REPRESENTING SOLIDITY.

The work should begin with the simple forms of solid geometry, the circular being drawn before the plane-sided, as the former present less difficulties than the latter. It is an absurdity of which many are guilty, to base the drawing of circular solids and objects upon

the drawing of the more complicated plane sided ones. After the geometrical solids, objects of corresponding shapes are logically in order; these to be followed by ornament in relief, and by casts of natural forms and of the human figure; the course to conclude with drawing from nature and from the living figure. The first aim should be to represent the objects in perspective outline,—the literal form. When this has been mastered, light and shade can be properly added; and then a steady light must be had, as when it is admitted into a room only from the north or northeast.

Some object vehemently to the use of flat or printed copies in this kind of drawing. Of course the only genuine object-drawing is drawing from the solid itself. But it does not require much pedagogical acumen to discover that flat copies, supplementing the solids, can be made greatly to facilitate progress at the outset. Both the printed copies and the objects should be as beautiful as possible, in order that the taste of the student may be elevated while he is learning to draw.

It will be well here to observe that there is a kind of drawing executed entirely with instruments, which is called linear perspective, and sometimes simply perspective, as it is the only drawing that conforms literally to the meaning of that word. This kind of drawing is often employed, even by those who regard themselves as experts, to explain the principles to be observed in drawing from the round or the solid. But only confusion results from thus mixing the two methods, since they have so little in common,—since they differ both in principles, and in aims. Linear perspective is employed to a limited extent by artists, but is chiefly used by industrial draughtsmen. It is the only means by which the architect, for example, can make from his working-drawings, a pictorial representation that will show, with a near approach to the truth, and in advance of construction, how a building will look when completed. It must, therefore, be regarded as an element of advanced technical instruction.

There are two methods, sometimes called the direct and indirect, of making perspective representations from working-drawings. The processes of the former are the easiest of explanation, at least for one who already has some knowledge of orthographic projection, but are not always the easiest in application.

MECHANICAL DRAWING.

As to the representation of the three dimensions, without pictorial effects, by plans, elevations, sections, etc., for the guidance of workmen, only a word more need be said. Descriptive geometry, or orthographic projection, forms the basis of this kind of drawing, which begins with the varied representations that may be made of geometrical solids, and then proceeds to practical applications in the different industries of the principles thus demonstrated. The same general principles of representation are involved in drawings for all kinds of constructive purposes, so that when they have been learned for one they have been learned for all, and these principles are derived from geometry. Indeed, *geometry, in some form, should be recognized as the true basis of every variety of drawing, whether industrial or artistic.*

Since drawings of objects to be constructed represent them in parts and without pictorial effects, they consequently make a special demand upon the imagination. Not only the draughtsman who prepares such drawings, but the workman who receives them for his guidance, must make from them, by an effort of the imagination, a vivid mental picture of the object required. Hence, the ability to "see in space," as it is often called, to realize form by an intellectual effort, becomes a matter of decided importance in technical education. And hence the imagination should be well trained both by drawing from the actual solid, and by representing the three dimensions orthographically. For the purposes of instruction in the latter case, flat copies must be the chief reliance; but these need to be supplemented by corresponding solids to assist the first efforts of the callow imagination.

THE IMAGINATION.

Let it be noted that the sculptor and the painter need the very power which the mechanical draughtsman requires, of realizing form in space by an effort of the imagination. And so instruction good for the latter cannot be, as some so loudly protest, injurious for the former. They have, at least, this most important use of the imagination in common. It is quite as rare a thing to find a mechanical draughtsman with an imagination equal to all the requirements of machine drawing, as to find a sculptor equal to all similar requirements of his art. A good course in orthographic projection would help any artist, while it is an absolute essential of advanced technical education.

There is another mode, a very simple one, which is sometimes employed in certain cases to represent the three dimensions for constructive purposes. This is isometric projection, which combines plan and elevation in one drawing, and affords an interior view when required. A working-drawing and, in a certain sense, a picture at the same time.

MATERIALS.

Just a word now about the materials employed as vehicles of expression, and to which we are indebted for terms designating different varieties of drawing, as instrumental drawing, point drawing, crayon drawing, stump drawing, charcoal drawing. For the purposes of advanced technical education, the hand ought to be accustomed to the use of different materials. Change of material does not necessarily involve change of work; for whatever materials may be used, the student must work according to certain broad, underlying principles, found, when properly sought, in one or the

other of the great departments of drawing which have been described, and are, in brief, as follows:

RECAPITULATION.

1. Drawing two dimensions. Freehand and instrumental. For decoration, for designing the forms of many objects, and for mechanical purposes.
 2. Drawing the three dimensions from the solid or round. Effects of *chiaroscuro*. Freehand. For both artists and artisans, but especially for the former.
 3. Drawing the three dimensions, with perspective effects of objects to be constructed. Instrumental. Not to be confounded with drawing from the solid. For both artistic and mechanical purposes, but especially for the latter.
 4. Drawing the three dimensions of objects to be constructed; no *chiaroscuro*, but orthographic representation to a scale. Instrumental. For artisans.
- And so it may very properly be said of drawing, that it rests on a broad basis of definite principles, and that its applications are infinite. It is the universal language of form. The foreigner who understands this language can, upon entering any first-class American workshop, go at once intelligently about his work, while an American ignorant of it would have to be directed at every step. This language, of such vast scope, is not to be learned in a day. No mere trick, no mere device or universal patent recipe can put one in possession of this hundred-handed instrument of art and industry. Therefore beware of drawing-quacks.

DRAWING IN TECHNICAL SCHOOLS.

If we examine the curriculum of any good school for advanced technical instruction, we find that drawing occupies a large space. This is for the civil engineer, for the architect, for the ship builder, for the machine draughtsman for the designer of manufactures, for the decorator, for the founder, for the miner, for the farmer, for almost every human industry. Some industries require more, others less of drawing; and it goes without saying that each industry must have its special requirements, though there are certain things that belong to them all in common. In the best technical schools there is no haste to reduce the instruction to a rigid specialty in the case of any student. With workmen the case is different.

VALUE OF BROAD INSTRUCTION.

Experience has shown that he succeeds best in any particular kind of drawing who has been instructed in all kinds. Thus the knowledge of the architect, for example, should not be limited to the requirements of construction: he should know how to decorate; he should be able to give his perspective drawings an agreeable background of sky and earth, with animal and human figures. The designer for pottery or textile fabrics will do his own work better, when his knowledge of the art of design is comprehensive enough to make him intelligent in furniture and the grouping of figures in a picture. But it is not necessary to enlarge on this point.

PARTS OF DRAWING ADAPTED TO DIFFERENT AGES.

As drawing like everything else, has its elements which can be learned in childhood and early youth, these elements should not cumber the curriculum of the technical or advanced industrial schools, but, like those of arithmetic and grammar, should be made a requisite for admission to the technical schools. Were such the case, *there would be saved certainly one year of the time which the student is now obliged to spend in*

a good technical school. The course could be shortened by that much, or, better yet, the standard of instruction could be raised.

When the public schools do their duty by drawing, this advance on the part of the technical schools can be readily made; for then their students will come to them well-grounded in all the elements of drawing. They will have their eyes trained to quick and accurate perception, and their hands to quick and accurate execution with or without instruments. They will possess no mean knowledge of the true nature of design and decoration. With the universal principles to be observed, when one represents objects in chiaroscuro, they will be familiar; and also with those general principles and methods of representing the three dimensions orthographically which are employed in every variety of mechanical instruction. From all this there will come, in addition to the definite knowledge and manual skill, much culture of the taste, imagination, and inventive faculties. It should be remembered that drawing is *more a matter of knowledge than a mere manipulative dexterity*, and that an exhibition of drawings is to be judged more by the knowledge it displays than by fineness of execution.

GENERAL CULTURE.

General culture and general utility afford ample justification for teaching in the public schools all that has just been enumerated. This forms the soil from which technical instruction springs, but is not technical instruction itself, as it does not embrace specific applications in the different industries. It is for common service; and as the pupils in the public schools study language in some form, and mathematics in some form from the beginning to the end of their course, so should they, in the same continuous manner, study drawing and art. That this may be done, without diminishing the proficiency of the learner in the old school studies has been abundantly proven by experience.

COURSE OF INSTRUCTION.

As to the details of a suitable course of instruction in drawing, either for public schools or technical schools, nothing will be said here. Those who wish to know these details should visit and study the Centennial Exposition. Nearly all the products there shown illustrate in one way or another, the practical application of drawing. Let these products be studied until one realizes how much a knowledge of drawing must have contributed to the result. Then let the education curriculums shown in the Exposition be carefully examined. Finally, let the products and the curriculums be compared. This curriculum provides for such instruction in drawing. Is it sufficient to yield the products displayed in the exposition? No. Then it is not sufficient for public and technical schools, since it is not a measure of the Exposition. But another curriculum provides for such instruction in drawing. This is equal to the requirements of the Exposition, is a measure of the Exposition, and so is equal to the requirements of the school. Nothing less will fill the bill.

A study of the Exposition will show that Russia probably exhibits a better system of technical instruction than does any other country. She has not yet results sufficient to illustrate it. But the system is a full measure of the Exposition. The exhibit made by Massachusetts, of work actually done in her public and technical schools, is unequalled by any other exhibit. For every feature of the Exposition, industrial or purely aesthetic, her educational display shows a corresponding

feature. Especially does she deserve the palm for what she has achieved in the way of drawing in her public schools, during the last four years. And let it be observed that what she has done, not only for drawing but for music also, in the public schools, has not been at the expense of other branches, as the results show. The educational exhibits made by Sweden, Belgium, the Normal Art School of South-Kensington, by Switzerland, Holland, and some others, will well repay him who is in search of light on the subject of technical or advanced industrial instruction.

Materials, as well as plans and results, should be carefully examined. Much the most extensive and meritorious display of materials for instruction in drawing is made by L. Prang & Co., of Boston. They exhibit materials for all grades of pupils, from the lowest primary to normal art and technical schools. These materials consist of flat copies, manuals, models, casts, etc., to be drawn in line, in light and shade, and in colors, and all systematically graded. European government regard good drawing materials as of so great consequence that they make it a part of their official business to see that the very best are provided for the use of schools. But such a thing cannot be in this country. How fortunate, therefore, are we, in finding a business house, like that of Prang & Co., with sufficient means, enterprise and intelligence to provide for American schools drawing materials so excellent as to command the approval of European experts.

The necessity of drawing as an element of advanced industrial education has now been described in general terms; and a sketch has been given of the leading features by which all sound instruction in drawing must be characterized. This instruction should begin in the public schools, with those elements which are of universal utility, and be completed in technical schools, with those special applications required by the different industries. When drawing receives, as it must ere long, its due consideration in this country, it will work a great and beneficial revolution,—much greater than appears upon the surface,—in public instruction and in the condition of labor.—*New England Journal of Education.*

The Limitations of Education.

According to the highest views of education, but few are educated. Alas! such is the truth—the melancholy, incontestable truth. The past history and present condition of the world,—intemperance, war, slavery, bigotry, pride, uncharitableness, self-seeking,—prove it to be true. But what is the moral conclusion from these admitted premises? Surely not that we should despair, but that we should labor, that we should agonize with laboring. The present condition of the race is as much below attainable perfection as it is above possible abasement. The empyrean above is as much without a dome that shall forbid our ascent, as the abyss below is without a bottom that shall arrest our fall. In mid-space we stand. Ascent and descent are equally open to us.—*Norace Mann.*

Chinese Schools and Education.

By the Rev. E. R. BARNETT, B. A.

In the *Pekin Gazette* for January 8th, 1876, as translated in the *North China Daily News*, an edict appears from the Empresses to the following effect: "The

Emperor having ascended the throne whilst still of tender years, it is most needful that his studies be undertaken in due time, and be pursued with continual progress to the end, that the results of education in the course of right may be secured, and the foundations whence good government takes its rise be laid straight." After this pompous introduction the edict commands the Board of Astronomers to select "a day of fortunate augury" for His Majesty to commence his studies, and appoints the officials who are to act as preceptors, who are then enjoined as follows: Let them, on each morning and evening, address him with suitable admonitions, and devote themselves with thorough attention to the inculcation of learning, in order to prepare the way to fruitful results." The translator of this edict adds that no mention is made of an important appointment in such cases, namely, of the child who is selected to share His Majesty's studies, and who acts the part of a *souffre-douleur*, or "whipping boy." It is considered an act of profanity to reprove or strike the "Son of Heaven," and hence, whenever his youthful majesty is naughty or inattentive, the "whipping boy" is beaten or disgraced.

It may perhaps be interesting to some to know a little of the system of education that prevails in China. The respect paid to learning by the Chinese is well known; it descends to the most trifling materials employed by a scholar, so that his ink, ink-slab, pencil, and paper are popularly designated "the precious things." It is emphatically a reverence for letters, for the slightest scrap of paper that has been written on, even though it bear but a few hastily-scribbled characters, is treated with such respect, that not only in every house, but on all the public thoroughfares, there are receptacles—bearing the inscription, "Reverence and pity the character"—in which to deposit all such paper, and from which, at intervals, it is removed and burnt at the shrine of learning. Learning takes the first rank in China; its aristocracy is an aristocracy of scholars, and even military mandarins are socially inferior to the civil officers of the Empire. Let us examine how these results, many of them so excellent, are secured. It must be premised, first of all, that education in China is entirely undenominational and secular. It may not be without advantage to remember this fact in England at the present time, in view of recent controversies, for the influence of idolatry over the Chinese is undeniable, yet this influence is exerted altogether apart from the schools. The pupils are admonished with many a moral maxim and the greatest respect is inculcated for the sages of past ages, but there is no connection between education and idolatry. Never does the pupil hear the slightest reference to the popular idols of the country, nor is he in any way, directly or indirectly, indoctrinated into the religious systems of Buddhism or Taouism. It is the influence of the home alone, and especially of the mother, that leads to the propagation of idolatry.

There are different ways of conducting education, according to the means of the father. In the case of children of rich parents private tutors are employed, who, in ordinary cases, receive a salary of £6 to £15 per year, living with the family. This sum is about equivalent to a private tutor in England receiving from £60 to £150 a year, for in such comparisons it is necessary to remember that the rate of expense incurred by a native in China is roughly about one-tenth that of a European in his own country. Where more highly educated men are engaged as tutors to the elder sons of a wealthy man, the rate of day varies between the limits of £30 and £70 a year. But such men are mostly high graduates not in official employ.

Schools abound everywhere; there is not a village or a hamlet in the country without its one or more schools. Some of these are opened by needy scholars on their own account, who are thankful if they can earn three or four dollars a month, and often have to supplement their slender means by practising medicine, or, in the case of the very poor, by telling fortunes. Frequently, neighbours will agree to engage the services of a teacher between them, and the school is held in the house of the proposer if he has an empty room. In such cases the number of the pupils never exceeds eight or ten; while in the lower class schools, open to any who choose to attend, there are sometimes as many as thirty scholars. The schoolmaster never employs an assistant. The fees paid in these schools vary with the age of the children or the grade of the school; for the youngest scholars perhaps a shilling a month would be a fair average of the cost of tuition for each child, while for elder ones as much as four shillings to eight shillings will sometimes be paid. In all cases the school fees are paid three times a year, and are accompanied with a small present of food. There are no boarding, charity, or infants schools in China. Girls are occasionally educated along with their brothers by a private tutor, and an educated woman is treated with marked respect; but the very way in which a lady who can read is regarded is proof how few there are who are able to do so. There are no schools for girls, nor is it considered disgraceful for the daughters even of rich and educated men to grow up utterly ignorant. The age at which a boy begins his education is about six years old, until which age he is allowed unlimited time for play. As the time approaches for the commencement of school life, the thought becomes an all absorbing one in his mind. For days past he has been hearing fearful stories of the inhuman propensities of his future teacher, of his cruelty and strictness, until the poor little lad begins to regard his school life much as poor Smike thought of Dotheboys Hall. On the morning fixed for his introduction to the school his mother brings him some poached eggs to eat, instead of his usual basin of rice, with the object of loosening the tongue and imparting wisdom, after which he is led by his father, not without much shrinking and many a cry, to the school. Here a servant has preceded them bearing candles and incense, together with a small gift of money to the teacher; and on their arrival the "new boy" is led up to a tablet or scroll hanging on the wall, on which is inscribed the name of some great sage, patron of schools and all schoolboys, and supposed to represent his spirit. Here, first the teacher, then the father, and lastly the pupil, prostrate themselves in reverence, after which they advance with much solemnity to the middle of the schoolroom, where a crimson cloth is spread on the floor, with a small bench standing in the centre. A little ceremony is again gone through here, the father insisting on the teacher sitting, while he as obstinately refuses, the friendly strife being compromised at last by their both standing, one on each side, while the overawed boy bows down to the ground, this time in reverence to his teacher. Four times does he knock his head on the floor, while the schoolmaster responds by a low bow; at the conclusion of which the father and the teacher salute each other and offer mutual apologies, the boy is shown to his seat, and the regular routine of school life begins. The scholars sit at little desks or tables, each with his ink-slab, pencils, and books before him, while the master sits at the end of the room. Very different is the appearance of a schoolroom in China from anything we are accustomed to in other countries. Fireless, even in the coldest

winter ; windowless, unless the light be admitted through a frame of oyster-shells ; without any ceiling but the tiles of the roof, and often with no floor but that of the mother earth—a more miserably cold, cheerless, and dirty place than a Chinese schoolroom can hardly be imagined. And the noise ! This defies description. If the school be a large one, you can hear it right down the street—a perfect hubbub of a score of children shouting out their different lessons all at the same time, and in a monotonous sing-song voice without a pause or a variation. Here, from nine or ten o'clock in the morning till six o'clock at night, the lads grind away at their books ; nor is their work finished then, for, unless they be very young, they no sooner reach home and have had their tea than they are set to work again at the old sing-song chant until ten or eleven o'clock at night. There is no play-time, nor any break during the day for rest or recreation, except the short space each pupil takes to run home and eat his rice in the middle of the day. But, worst of all, a Chinese schoolboy has no regular holidays ;—with the exception of a fortnight or so at New Year's time and an occasional break of a day owing to a public festival, school-life is one continuous system of cramming year in and year out. From this it is evident there is no need for playgrounds, nor do you often see boys engaged in play ; if you meet them in the street, it is generally either on their way to or from school. This seems a great tax on any lad, but the brain is exerted so little—the education being confined at first almost entirely to learning things by rote, without regard to the sense of what is learnt—that it does not seem to affect the health of the boys. Probably, too, a light vegetable diet and the exposed and draughty nature of all Chinese houses make it less necessary to take much exercise. But it is dreary work in the best case, and it is hard to see how any love of study can be fostered by such a method of education.

A Chinese school is not divided into classes, but each pupil is taught separately by the master ; nor are there any school examinations at any time during the year, and consequently there are no prizes or rewards of any kind. Thus one great element of stimulus—mutual emulation—is entirely wanting. The punishments administered for inattention or forgetfulness vary with the disposition of the master ; the most usual form of correction for slight offences being to rap the forehead with the knuckles, and if this be ineffectual the pupil is compelled to stand to his work. For graver offences, caning is resorted to, generally given on the palm of the hand, while the worst punishment of all, reserved for the very refractory, is to compel such to kneel on the floor and repeat their lessons in that attitude. No Chinese teacher is so foolish as to punish himself by dismissing any boy from his school ; he finds it hard enough to get a living in any case. On assembling in the morning, the pupils first bow before the tablet of Confucius in honour to his memory or spirit, and then salute their teacher in the same way, after which work begins. There are no primers in use for the education of the Chinese, nor has any attempt been made to shorten the laborious task of learning the characters. A beginner is supplied with a number of little square pieces of paper, on each of which a character is written, and his first work is to learn the unknown sound attached to each. After the sounds of a thousand or more characters have been learned in this way, he advances to one of the so-called elementary books, the most popular of which bears the title of “The Three-character Classic.” This little book contains about a thousand characters arranged in groups of three, each pair of

three rhyming with the next pair. The whole of this is committed to memory by degrees, and as each section is learnt the pupil is called up to the master's desk and made to repeat it *verbatim*. This they call to *back* the book, because the pupil has to stand with his back turned towards the master while repeating his lesson. By the time he is about eight years old, supposing the boy to have entered the school when he was six, he is prepared to begin the “Four Books,” which are slowly committed to memory as before. All this time the pupil is utterly ignorant of the meaning of what he has been reading ; so far, his education has been simply learning by rote pages and pages of sounds, which by constant revision become at length so ingrained into his memory that he is able to repeat whole books with the rapidity and accuracy of a sailor telling the points of the compass. And so the process goes on four years, instruction in writing being interspersed with the reading. This is taught by means of large characters printed in red ink which the beginner has simply to trace over with a fine paint brush. This is a very important part of education, and in this they certainly excel us, for bad writing and bad scholarship are synonymous. The greatest attention is paid to the way the characters are drawn, until each stroke is finished with the utmost delicacy of touch. By the time a boy is twelve or fifteen years old, he can usually repeat the greater part of the principal classical books, though still ignorant of their contents ; and at this age numbers naturally leave school and enter business, where they are taught to calculate (arithmetic is no part of the education of a Chinese scholar), and the routine of their future livelihood. Such remain, to the end of their lives, ignorant of the meaning of the books they have been for years so diligently committing to memory. Ludicrous illustrations of this occur almost every day, when one meets with numbers who are able to read all the characters in ordinary use, so far as giving their right sound is concerned, but are as ignorant of the meaning as though it were a foreign language. This is due to the fact that the spoken dialects of China differ so considerably in style from the composition employed in books, and the sounds in the two cases are also dissimilar. Two native scholars are able to carry on a conversation for a considerable length of time in the presence of an uneducated man speaking the same dialect as they, without his having the slightest knowledge of the purport of their talk. So, too, a Chinese book read aloud even to a Chinese scholar is quite unintelligible, unless translated into the vernacular.

In the case of those scholars who are intending to enter the public examinations, the course of study is different, and much more extended. After having learnt by heart several of the books, he begins to learn their meaning, and also the meaning of the commentaries on them which he has also previously memorised. Side by side with this, he is set to the task of composing essays. These essays are an all-important part of a scholar's education, for by his skill in making them he takes rank in his examinations, and find his position in the estimation of his friends. But a more profitable method of wasting time could hardly be devised, nor can one imagine anything more lamentably void of interest or use than the thoughts expressed even in the best of them. The text in all cases is a theme selected from one of the classics, upon which a series of remarks are strung together so trite and vapid, that even in the case of the highest examinations the essays would also disgrace a schoolboy at home. Their merit is estimated by the Chinese according to the absence of

original ideas and of freshness of language. They ought to contain nothing for which you cannot give the proof from books written two or three millenniums ago, nor a phrase of which you cannot find the original or its near relative, in the same source. Novelty or individuality are the high roads to disappointment and disgrace. I believe it is a fact that a scholar who once ventured upon a different interpretation of some of the classics than that contained in the standard commentaries, was beheaded for his pains, and is to-day regarded with opprobrium by all right-minded students.

By the time a pupil is about eighteen years old he is able to go up to his first examination, although no limit as regard age is affixed to any of the official examinations. The hours spent in preparation for this first trial have been increasing year by year, until probably he has become accustomed to working from day break to midnight without any cessation except for meals, and absolutely without any exercise or recreation whatever. That such is the case may be judged from the fact that, among the models held before the ambitious gaze of the youthful aspirant are the example of devoted scholars, one of whom gathered the snow together in winter that he might read deep into the night with the aid of the light reflected from its surface, while another, equally poor, enclosed innumerable quantities of the fire-fly in a silken net in order to study with the light afforded by their phosphorescent flickering. The first examination is held in the office of the district magistrate, after the candidate has passed which allowed two months to elapse, he passes on to another examination held in a provincial town, of which there are some eight to twelve in each province. If successful here, and it is unusual to pluck any of these preliminary examinations, the candidate enters for his first degree in an examination held twice in every three years, and conducted by an Imperial commissioner from Peking. Here, if successful he attains a rank that is estimated by foreigners as equivalent to our B.A.; in Chinese he is said to be a *shu-tsai*, or in other words, "A cultivated talent." Upon the truth of this opinions may differ; he receives, however, a special button for his cap—somewhat similar to a graduate in England being privileged to wear a special hood to his gown,—he is exempted from corporal punishment, and if he reside in a village, obtains a little notoriety for himself. By becoming a B.A., the successful student is said to have "entered the Guild of Learning," and now takes rank as a scholar. These and the graduates of higher rank, are the men who form the *literati* of the country, whose antipathy towards foreigners and power of disturbing the peace are so violent, and often so cruelly manifested. In Chinese they are called as a class "Book Readers," but it is to be feared they do a great deal else besides reading books, and, like the clerks of many other countries and of all ages, are often prime movers in fomenting disturbances among the more peaceably disposed populace.

The cost of obtaining the first degree. I am told, is at least £20, and this is apart from all previous expenses incurred by tuition, cost of books, &c. No emolument follows success at this stage, but once in every three years a more important examination is held at the capital of each province. This is open only to those who are already B. A., and not even to all of these, for local examinations of the graduates of the first degree are held repeatedly, and only the successful candidates in these local examinations are allowed to compete for the higher degree. These triennial examinations in the provincial capital are sources of immense excitement to the friends of the candidates, and the results are made

known by the swiftest courier, in every hamlet through out the province, within a very few hours or days of the official announcement. Success here confers the degree of M.A., and the graduate is called a "*Kü-jin*," or "A promoted man." As yet, however, his promotion brings him no reward for his diligence, beyond the honour conferred by success, although the expenses necessary to obtain this higher degree are estimated to a cost of £40, an enormous sum to men who consider £2 a month a satisfactory income. The money for all these examinations is raised by a voluntary contribution of friends—who feel promoted themselves by the success of a relative—or by incurring heavy debts which often remain unpaid to the end of life.

It is difficult to estimate what is the average proportion of successful candidates; and the average, moreover varies for different provinces. Only a limited number is allowed to pass, and the number for each province is a constant quantity. In this province of Kiangsu, which is the most densely populated of any of the provinces in China, there are generally 2,000 or 4,000 candidates for the B. A. I am told, not more than one-tenth succeed. For the intermediate examination of graduates 80 out of every 300 are usually selected to go to Nankin, the capital of this province, to compete for the higher degree. Nankin is the place of examination for the adjoining province, as well as for this one, and the number of students assembling there at the triennial examination is estimated at from 10,000, to 18,000, of which only one in a hundred can hope to be successful. In the province of Canton, Dr. Williams states that there about 12,000 who hold the first degree, and he mentions the number who enter for their M. A. as usually about, 6,000. The size of an examination hall in China can be imagined when it is remembered that a separate cell is provided for the accommodation of each student.

If not deterred by expenses, and if anxious for official employment, those who have obtained their Master's degree proceed the year after to Peking, where candidates from all the 18 provinces are examined, about one in twenty of whom succeed in obtaining their doctorate and are called "entered scholars." There are about 200 such successful ones every three years. These remain in Peking, and are again examined in the Imperial palace and of the successful ones the first takes precedence as first scholar of the Empire for that year, while the rest obtain the degree or office of *Hanlin*, which has been designated the Imperial Academy, and the members of which receive salaries. Other examinations follow, by which still higher promotion takes place, and the official rank of the members of the various Governmental Boards is determined. Thus the way is open by a series of steps for the lowest of the people to rise to the highest official appointment, and to obtain the greatest emoluments in the Empire. None but actors or their children, the lowest grade of coolies, public executioners and torturers, and the children of openly immoral people, are prevented from competing in any of the examinations; and it frequently happens that a man of very low birth finds himself suddenly elevated to wealth and honour by the fortunate success of a clever son. But ability is not the only test in these examinations. Purity is unknown, except in sentiment, and it is to be feared bribery is carried on here as in every direction. Chance, too, has much to do with success. Where so large a proportion necessarily fail in every examination, and where the candidates are counted by the thousand, it cannot but be that much depends upon what goes by the name of good luck. Many try for years without succeeding, and in the examination

halls of China, as in that of the London University, it is no unusual sight to see grey-haired and aged men making their last efforts to win success before they die.

The honour paid to a successful candidate is astonishing. I happened, while at Soochow, to be living opposite the residence of the father of the student who was first in that year's tripos. The house was an unpretentious one, and the father by no means a wealthy man; but directly the announcement was made of his son's success, all the Mandarins of the city, including, I believe, the Viceroy of the province, came in their chairs of state and paid their respects to the aged sire. Workmen were appointed by the city magistrate to restore and decorate his house, and the expenses were met from the public funds. In China (always the reverse of other lands) honour is transmitted upwards to one's ancestors, not downward to one's posterity; and so on an appointed day an imposing procession was formed, in which the mother of the lucky scholar occupied the principal place, and thus the city was traversed with music and banners, and other insignia of state. Nor did the honour stop here; for days and weeks presents flowed in from all parts, and feasts were given in succession, all testifying to the respect felt by the Chinese for literary ability.

The question arises: What can be shown as the result of this prolonged study, and of so many examinations? From what has been said it is hardly needful to state that a Chinese scholar, however clever he may be, possesses scarcely any information on the most ordinary topics. Of geography, history, figures, he knows next to nothing; of the history and uses of the commonest objects around him, or of the structure and functions of his body, he is absolutely ignorant. Not many days ago, I was asked by a graduate, if sugar was not dug out of the earth like a mineral; and I do not suppose there is a scholar in the country (unless he has been specially taught the use of the abacus) who could work the simplest sum in multiplication or division. The synchronism between high tides and the new or the full moon has been noticed, but no one has ventured to suggest any dependence of the one upon the other. The extent of a scholar's information upon other subjects leads him to suppose that the earth is held in its place by an intangible substance, called *chi*; and the idea that China is the central kingdom of the world, all other countries being ranged round as though tributary and dependent, is too firmly embedded in the popular mind to be easily eradicated. Though the information imparted by the present mode of education is so slender, it seems that the training does, nevertheless, develop a high standard of intelligence. The only need is to direct it to useful objects. The memory, as can be readily supposed, is strengthened out of all proportion to the other faculties of the mind. Nothing is more astonishing than the retentive power of a Chinese scholar. Open any of the leading classics and read half a dozen words, and he will take up the sentence and go on repeating the following paragraphs word for word. No matter what passage be read, he will be almost sure to tell you where it is taken from, and what is its context, almost instantaneously. Reading the Chinese classics with a teacher, it is quite common for him to sit with no book before him; but if a word be missed, or a character be mistaken, he will correct him without a moment's hesitation. Once, when speaking to him of his memory, he laughed and said, "That is nothing. I can say it backwards," and lo! he began at the end of the chapter and proceeded to repeat it backwards. So, too, in the case of our native preachers; many of them are walking concur-

dances. Mention an incident in the Gospels, and they can in most cases tell the book and the chapter, in a way that is marvellous to a foreigner accustomed to the use of a "Cruden" or other similar aid. Owing to this system of education the mind is not symmetrically trained, and the inventive and aesthetic sides seem to be especially repressed. It has generally been supposed that the great stimulus to literary pursuits is a desire of obtaining office and wealth; but this may well be called in question when the small proportion of scholars who reap such benefit from their learning is remembered. Except in the case of those who are in office, a scholar is generally poor, and indeed he is unfitted by his training from earning a livelihood, save the precarious one of teaching or doctoring, while the dignity of his position is such as to forbid his ever turning to business. This fact accounts in a measure for the immense number of schools that exist throughout the empire, and which renders so unnecessary any such system as that recently adopted in England.

Such, in briefest outline, is the mode of education that prevails in this most paradoxical of all nations. It has the recommendation of age, for in many of its main features it has existed for nearly twelve centuries; but, like a great many ancient things, it is losing its flavour. That the benefits of education are more widely diffused throughout China than Europe, is almost certainly not the case; but no such statistics have been collected as to render an opinion trustworthy. Such as it is, its work is done, and its end is doomed. The demands of the Government for men with a scientific education, and the heavy pressure that is being exerted all along the line of Chinese habits and beliefs, are slowly but inevitably breaking up the solidified institutions and customs of the past. Whether the nation contains elements capable of reconstruction and renewal, is a question impossible as yet to answer; but one thing is certain, that China as it has been—the China we know and see to day—will soon be no longer in existence, and its present form will then be regarded only as a wondrous monument of the past.—(*Argonaut.*)

Object-Lesson Teaching at the Centennial.

The necessity of object teaching is now an acknowledged fact. It has been demonstrated that the future progress of our country and the advancement of commerce are dependent upon the progress of science. At the first Universal Exhibition, in 1851, British manufacturers were surprised to find competitors from other nations exhibiting goods superior to their own, belonging to a class of which hitherto they had been proud as a nation. They did not despair, but to overcome the difficulty they established schools of art and design, and offered reward for the best method of teaching practical science. What England did, we require to do. We must make science more popular with our youth. It must be simplified, so as to call forth the observant faculty of very young children. They will eventually develop the perceptive faculties and investigating energies of our youth as they grow up, and make them practical people. We, of course, consider the whole Exhibition one huge object-lesson, from which we shall acquire practical information which is worth to this country wealth untold. It is impossible to estimate the value this comparison of the productions of different countries will prove even to our own community. We can compare the artistic designs and the fine workmanship so skillfully executed by the artisans of different

nations. It behoves us, however, to do something more than this. We must provide the requisites for the advancement of our children, not only that they may keep pace with, but, if possible, take precedence in the future. We have carefully examined the various educational exhibits to ascertain what our educationalists are doing in this respect, and are to be pleased to find that many of our States have adopted the Kindergarten system for very young children; but that seems to be the extent of their object teachings. The country that exhibits the finest collection of educational appliances for this important branch of education is Ontario. The exhibits of the Canadian School-apparatus Manufacturing Company, of Toronto, in the Ontario education department in the Main Building, have received the international judges' award for their excellence and cheapness. The system adopted by them to teach natural history is acknowledged to be superior to the old, dry method by books and charts; instead thereof they teach from nature. For example, take botany:—They have cabinets containing the raw and manufactured material, from which the child is gradually brought to understand the nature and uses of the plant examined. Supposing the object to be wheat, specimens of the seed, bran, flour, biscuit, macaroni, straw, straw plait, straw paper, &c., are exhibited, and, as they are properly classified, they not only are useful to teach young children the importance of common things, but they impart an important lesson in botany. These cabinets, containing, on the average 200 specimens illustrative of the animal, vegetable, and mineral kingdoms, are sold at \$12 each. The models exhibited by the company for teaching physiology and anatomy are superb. More information can be gained of the true position and the formation of the organs of circulation and respiration, the necessity of cleanliness, the importance of attention to the teeth, &c., by studying these models for a few hours than can be obtained from books in years of close study. Their system of teaching chemistry, too, is considered by experts to be very superior. This science is so simplified that children can perform experiments. They have a laboratory for boys and girls—price, \$2 containing chemicals and apparatus to perform over 120 experiments in chemistry, manufactures, domestic economy, physiology, &c. Students' laboratories are supplied at \$6 each, with a book, to perform 200 experiments. The laboratories for teachers and normal-school students, price \$12 each, are marvels of cheapness. They contain all the chemicals and apparatus to perform the ordinary experiments with the metalloids as found in elementary books on chemistry. We have no doubt that this important branch of study, which is the keystone to our manufactures, will receive an impetus and become one of the necessary studies in our school system, as we understand several of our neighboring States have already ordered samples of these laboratories for the purpose of introducing them into their schools. We wish the Canadian School Apparatus Company success in their new enterprise, and shall be glad if they consent to the wishes of some of our prominent educationalists by establishing a manufactory in the United-States.—*Philadelphia Press*

The Science of Teaching.

The *Spectator*, (London, England,) has the following sensible remarks on the Science of Teaching:—

It is remarkable that "Pädagogik," or the Science of Teaching, has never yet been thought worthy in this

country of formal recognition as a subject of academic instruction. The lawyer is presumed to study the principles of jurisprudence, and the medical student to learn anatomy and therapeutics; provision is made in universities and colleges for professional instruction of this kind, and even for those prelections on theology and pastoral work which are presumably necessary for the skilled minister of religion. But for the special aid of one who is to devote himself to the profession of school-keeping, no provision whatever has yet been furnished by the universities. There is among scholars a vague impression that teaching is not a science to be studied, nor an art to be learned by systematic practice, but a knack, which comes easily to men and women who know their subject, and are in earnest in their wish to teach it. Given a well-instructed master, a good text-book, and an obedient pupil, and the teaching apparatus is presumed to be complete. Yet all experience proves that the possession of knowledge is no guarantee whatever for the power to impart it; and that there is the same difference between the skilled and the unskilled teacher, as between the trained and the untrained practitioner of any other art. Much, undoubtedly, of this difference comes from temperament and natural aptitude, from the intellectual and moral sympathy which enables some men and women to know what is going on in the interior of a child's mind, and to adapt their instruction in accordance with such knowledge. No mere study of methods will ever place one who lacks these finer instincts on a level with one who possesses them. Nevertheless, there are right ways and wrong ways of presenting truth; there are principles underlying every rule of practice which a good teacher adopts, and the investigation of them is not without great value. To the average schoolmaster such knowledge is indispensable, as a means of saving him from mistakes and enabling him to economise his resources. And even of one who is exceptionally qualified by natural insight and by a love of his work, it may be safely said that his work will be done better—as all the work of life is done better—in proportion to the thought and study which have been devoted to it, and to the degree in which he has laid hold of the reasons which make one course of action wiser and more practically efficient than another.

In the sphere of primary education, this principle has been generally recognised, and the recognition of it has been attended with the happiest results. The training college system, the creation of the last thirty years, was partly founded and almost wholly sustained and developed by the operation of the Education Department of the Privy Council. It has been practically limited in its operations to the teachers of schools for the poor under Government inspection. Yet within that range its results have been very remarkable. The class of agents whom it has employed was not the most promising. The early advantages, the knowledge of the world, and the general culture of the certificated teacher, have—as is well known—been comparatively small. He has, however, proved himself to be a most valuable public servant. His knowledge may not be extensive, but what he knows he can teach; and he has acquired the art of organising and managing a school, and of giving certain useful instruction to the largest number of scholars in the shortest possible time. No one who has had opportunities of comparing the elementary schools of the present with those of the past can fail to perceive the enormous difference between them; nor to doubt that in the trained and certificated teacher we have a highly efficient instrument, whose efficiency is mainly due to the systematic study of the art and science of his profession.

Why, *mutatis mutandis*, the same experience should not be found to prevail in the region of secondary and higher education, it is difficult to understand. Relatively to the work he has to do, the teacher of Latin, of mathematics, or of science, would find that a knowledge of the best rules of practice which experience can furnish, and of the principles and reasons which justify these rules, would be just as helpful as to the teacher in a national school. Many of the traditional methods in use in grammar, collegiate, and private schools are utterly indefensible; they are wearisome and clumsy, they deaden the intellectual activity of the scholar, and they terribly waste his time. The due co-ordination and relative importance of subjects are matters on which the minds of few schoolmasters seem to have been exercised; it is generally considered enough if each teacher, whether at the head of the school or in the position of a subordinate, knows the particular matter on which his own lessons are given. And inasmuch as the preparation to be had from a training college has hitherto belonged to the lower class of teachers, who, both in scholarship and in social position, are presumably inferior to the teachers of secondary schools, it has come to be considered by the latter that they could not, without loss of caste, submit to the same discipline. Fashions seldom extend upwards, and it is in every way a misfortune for the teacher's profession that the practice of systematic training has begun at its lower end, and is still popularly supposed to be appropriate rather for primary than for secondary schools.

The true corrective for this, is to recognise the need for such training as part of the curriculum of instruction for men who are proceeding to a University degree, and are intending to take upon themselves the office of teacher in higher schools. And the Bell Trustees deserve the thanks of the public for thus establishing for the first time a professorship of Education, and in connection with the studies of a university. Professor Laurie urges with truth that "a specialist training college does not answer the same purposes as a university. The broader culture, the freer air, the higher aims of the latter give to it an educational influence which specialist colleges can never exercise." And he proceeds, with great clearness and force, to show what are the points of contact between a true science of education, and psychology, physiology, and sociology; and how the materials of its teaching must be drawn not only from the practice of the school-room, but from philosophy and from the rich domain of history.

It would be easy for a Professor of Education to err on the side of over-speculation and of subtleties about mental processes, and thus to "find no end, in wandering mazes lost," and to forget that though education is undoubtedly a science, it is yet in a still more important sense, an art. And in a professorial chair in Edinburgh or St. Andrew's, the English teacher, who, as a rule, distrusts all theories, will be apt to suspect the prevalence of this fault. In the hands, however, of two men, each so differently and yet so fully equipped for his work by long and varied experience of schools as Mr. Laurie of Edinburgh, and Mr. Meiklejohn of St. Andrews, we have some right to hope that the practical bearings of the pedagogic science on the actual work of the schoolroom will not be lost sight of. Meanwhile, any help which may come from Scotland towards the solution of this serious practical problem will be thankfully welcomed by the more thoughtful of the schoolmasters and mistresses in this part of the island. A grave responsibility—of which indeed Mr. Laurie, for his own part, appears fully conscious—rests upon

the first adventurers into this new and difficult field of academic work. Their success would go far to remove from the teacher's profession the reproach of empiricism, and would perhaps in time even reconcile the English pedagogue to a wholesome innovation of a like kind in the Universities of Oxford and Cambridge themselves

The Press on Education.

TONE.

A good discipline being established, there is nothing more important to the well-appearing of your school than the *tone of voice* with which the recitations, etc., are rendered. It is absolutely astonishing how much more the upper notes of the gamut are in requisition by the pupil than the lower! Should you ask a question of any one, the voice is low in answer, perhaps impressing you with its quality of sweetness rather than otherwise. But its naturalness all disappears the minute the class is up for recitation, and in its place the most disagreeable artificial tone that can be imagined. How they manage to drift into such is really a matter of wonder. It is to be noticed from the lowest grade of the primary up through all, till they become ashamed of it, and then it all has to be unlearned. Now the teacher is almost entirely to blame if his artificial manner become a fixed habit for it, as well as many other unpleasant things, is nothing *but* habit; there is nothing about it natural or necessary. When George McDonald was here, it was my great pleasure to listen to his lectures, and truly his voice was a marvel of sweetness; rich and melodious with no harshness, it flowed like a rippling brook, rounded and pure in liquid tones. I remember that, during one of the lectures, he leaned over the desk, and, looked upon an audience he would have been proud to know personally for its quality, he pleaded, very impressively, with them, especially the younger portion, to cultivate the *tone of the voice*, saying that that, more than any other accomplishment, "told" marvellously. I wonder what he would say concerning it, if he should enter one of our lower schools! It would be worth your while to make a point of watching the countenances of your children as they receive, and get ready to reply to, your questions. Mind you, the question must concern some *study*, for the instant you ask any other the *tone* is at right! First, the shoulders spring up; the head takes another poise; the forehead contracts, and in many cases shows more wrinkles than the grandfather's; the eyes shut nearly together; the mouth opens, and then, forth from the cavernous depths there pours a sound which, a million times repeated, would absolutely make the nations tremble; the body, the while, swaying like a reed in the wind from the mere force of the effort! I have caught myself wondering if the shout that razed Jericho was raised (?) in this manner!

Some time since, during one of Prof. L. W. Mason's valuable talks on music, he illustrated upon the black board the pitch of the voice and the varied tones used in spelling the word "thunder," for instance, and it was perfect; one could hardly keep from laughing as he looked at the scale and recognised the truth of the assertion. It seems to make no difference at all what the class exercise is; each and every one is rendered in about the same way, and if you take no notice of it, the voice rises higher and higher in the scale till there is no knowing where it would go to if the word or sentence did not come to an end. It is curious, too, to

note the *inflection* of voice in various schools. I knew one, not long ago, where every boy ended every sentence he uttered (excepting only the reading lesson,) and every answer to every question, with the *rising* inflection; and what is more curious still, the habit was exclusive to that school, though it was only one of many, and the children of all always mixed together at play. Another very peculiar habit is the ending of an answer in the *minor* key, rather than coming down fair and square in the *major*. In music the *minor* is very sweet and impressive, filling the soul full of tender thrills; but when it comes to a wide-awake recitation, where you want the knowledge, and the expression of it, clear and determined, there is no merit in it; it savours of weakness and indecision. I wish it were possible to give an illustration of sounds in words, but as I cannot, I would like to ask you to pronounce any word of two syllables, pitching one syllable on *do* and the other on *la* of the key of *A sharp*, and you will get at my meaning.

Give out tables in arithmetic, and it is next to impossible to induce a conversational tone; but stop a child in the midst of it, and ask him the same question, instantly his voice descends in the gamut the number of tones requisite to put it on a par with your own, and his answer is everything you could wish as to quality of sound—gentle and smooth, but manifestly arriving at it at the expense of a good deal of breath stocked up for his effort! But that accomplished, at it he goes again, and this time the contrast is the greater, because you have had a glimpse of what he is capable of! Of course, this is coloured somewhat highly, but it has to be so to arrest the attention, though all will bear me out in the main facts. It is all wrong, and there are many reasons why. Even if it were agreeable and pleasant to the teacher,—which the saints forbid! for I should dislike much to find one whose ear is so attuned to harsh sounds that she is thus satisfied—it is injurious to the child; the voice is really injured in its quality by the artificial strain upon it; the delicate organs of the throat are not made for such a use, and it wouldn't be too much to suggest that this laborious and unnatural exertion has something to do with the throat difficulties and affections to which all school children are so liable. But even if it does no real harm even if the teacher is indifferent to it as far as she herself is concerned; and even if the children like it better themselves, which I can't believe, notwithstanding it is so universal, it is yet detrimental to the school as a school; it makes things look as if they ran as in ruts,—as if it was the same thing over and over again all the time, and as if there neither was nor could be any progress. Now, as this is the age of progress, an improvement in this direction is very much to be desired and hoped for. The voice should not be raised so fearfully beyond its natural inclinations; and, while I do not indorse low and guttural utterances, I do not believe in shouting. A child's voice has not the power or strength of an elder person's; it is finer, more like the vibrations of a silver thread, and to try to give it maturity before nature herself intends it, is wrong; it is unphysiological and vitally harmful. One of the prettiest features of a class in singing is softness, thus bringing out the sweetness of the young voices. There cannot be purity of tone when the organs are all stretched out in the throat, wide open for a stentorian shout. Fatigue will ensue much more quickly in this state of things, and then you will wonder what makes your little fellows seem so tired. Their out-of-door shouts belong to another order, but do not let them be transferred to the schoolroom. There is a fitness in things, and the

schoolroom in eminently the place for gentle words and sweet, pure tones. How culpable we all are in this respect! I believe much of this is engendered by frequent concert exercises; it is so easy to drift into a sing-song, where many voices are united, each unconsciously attempting to attune itself to every other. Such are valuable for many things, but too much of even a valuable exercise is detrimental. Let the recitations, as far as may be consistent, be conversational, and insist upon all answers being given as *naturally* as possible. That this is a task, I know full well, for I have two or three whom I can scarcely ever make put the voice down at a period without calling the child's immediate attention to myself, and indicating the downward inflection by a motion of my head and hand. There is a theory in all this, but, it is not all theory; the practice is possible, and if each teacher would attend systematically to the quality of the tone with which the little ones answer *all* questions, whether in spelling, numbers, or conversation, as they advance up through the grades, this harshness and unnaturalness will become less and less a noticeable feature.—*New England Journal of Education.*

Girls at School.

Take the case of a girl of fifteen, conscientious and anxious to improve herself. She rises long before it is light in the morning, before, perhaps, even the early hour appointed. She struggles with a feeling of oppression and languor occasioned by sleeping in the same room with several other girls, and breathing all night a vitiated atmosphere. The gas in the room does not improve the state of the air, and there are no ventilators; perhaps even the register of the grate is shut. In all probability there are not adequate tubbing arrangements; certainly no hot water is allowed. The poor victim breaks the ice in her jug, and uses as small a quantity as possible of the hard water. It is not improbable she has inflamed chiblaini, which have kept her awake during half of the night. Hungry, sleepy, and languid, she begins her piano practice in a room without a fire. At the end of an hour she is stupid with cold and has a violent headache. There is no use in complaining, for several of her companions are in a similar condition, and they sit down to breakfast shivering in the dreary gray dawn. After breakfast comes the monotonous half hour walk which is supposed to be good for the health, but seems only to have the result of fatiguing the children before their day's work has well begun. Then comes a long morning, in which class succeeds class with scarcely any intermission Latin, French, German, music, drawing, have all to be squeezed in as well as the other lessons which belong to a good English education. These of themselves would be enough to fill up the whole time. After an early dinner, if the day is fine, there is an other dreary stroll; but everyone rejoices if the weather is wet, for then there is a little time for idleness or play. The classes begin again in the afternoon and last until tea-time; perhaps, even after that, the preparation for the next day must be got through. If there is no hour before bedtime in which relaxation is insisted on, the industrious girls will work up to the last moment, and then dream half the night of unprepared lessons or problems they cannot solve. Their feverish restlessness is the natural result of overstraining young brains, and not giving the muscles vigorous, healthy exercise. Not that much is accomplished after all in the way of learning; far from it:

and, worst of all, they are never taught how to learn. The time given to lessons is too long to be advantageously employed. It is impossible that it can be good for either the mind or body of a growing girl to spend nine or ten hours a day in head work, particularly when the greater part of the time is passed in an overcrowded, stuffy school room. Boys have a great advantage over girls in this respect. Their class rooms are much larger, more numerous, and better ventilated. They are not hung with curtains, or covered with carpets which can scarcely be kept free from dust. Then, too, boys have another advantage over girls in the liberty they enjoy during play hours. They are not constantly under inspection. Their games of cricket and football are admirable tonics after a morning of hard work. The healthy glow of exercise sends a fresh current through the tired brain, and completely changes the course of their thoughts. But of this invigorating sensation the properly brought up school girl knows nothing. She is not allowed to warm her feet by a good run or her hands by a boxing-match. The nearest approach she ever gets to healthy exertion is the weekly dancing lesson. If she is allowed to have riding lessons they are not of much use, for she is probably obliged to work after hours to make up for the lost time. There is certainly no care taken that she shall have something to eat and half an hour's quiet when she returns home tired after her canter. Instead of resting her back she is perhaps doomed to an hour of singing, and receives a scolding for not being in good voice. The culpable negligence with regard to the health of the girls in most boarding schools cannot be too severely censured. There is plenty of care and attention forthcoming when once the doctor has to be called in and he pronounces his patient really ill; but then it is often too late to do much. The seeds of future incurable delicacy are laid in many cases from want of a little timely thought, for which no after kindness can compensate. Few schoolmistresses have any real knowledge of physiology or of the laws of health, and yet no woman is qualified to have the care of young people who is not intimately acquainted with the general functions of the human body and with the best means by which to keep them in good working order. She should know how to distinguish between irritability and indigestion, and between idleness and illness. Childish complaints which under favorable circumstances might not be serious often become severe illnesses because no one has sense to observe the symptoms which any rational person would recognize as the precursors of some feverish disorder.

The severity of an attack of measles or scarlatina often depends on the care taken of the patient while it is incubating. A walk in the wet or a sleepless night from overwork may induce symptoms for which there is no care. Then, too, the mind requires as much care as the body. It is quite possible to wear out brain power by over-stimulation, and the clever girl who carries off a number of prizes may fade into an ignorant commonplace woman who lies all day on the sofa reading novels, and is unable to sleep without chloral. With regard to the intellectual education given to half the girls in the boarding schools, it is not too much to say that it is worse than none, for the reason that it disgusts the children with learning. This is of all others the one to be avoided. The compulsory lessons learnt at school ought only to be the scaffolding for future building up. That the term "finished" should be used of a girl of 17 shows the hollowness of the system, and proves that the people have, as a rule, no idea of what education means, and that they never reflect whether the number of things usually taught can be taught pro-

perly in the time given. To insist that children shall not talk anything but French does not mean that they learn to converse in French. It simply means that they are allowed to jabber a *patois* in which gender and grammar are set at defiance, and in which mongrel words are coined in every sentence to save trouble. It means that any amount of silly talk may be carried on if partly expressed in a foreign language. It means that English conversation on sensible subjects is unknown and uncared for. There is no attempt made at meals by the presiding schoolmistress to interest the girls in the topics of the day. They never see a newspaper, nor are they encouraged to supplement the ancient history with which they are so plentifully crammed with some knowledge of the political events going on around them. All that is required of them is to be able to remember correctly a few hundred dates, many of them quite unimportant, and to commit to memory the incorrect statistics of killed and wounded in certain famous battles. They scarcely know who is the Prime Minister: have not the foggiest idea as to how their own country is governed; do not understand the meaning of such words as Poor Law, Consols, Trade Unions, Income Tax, Disestablishment, Home Rule. A girl may be able to say by rote all the rivers of Europe, and yet not to give the faintest sketch of the changes which the great European wars have made in the divisions of the several countries, not even of what France lost by its campaign with Germany. She may have learnt to play with tolerable brilliancy, and yet not be able to give even a slight sketch of the difference between the music of Mozart and Beethoven, or of Rossini and Wagner. She may have arrived at compound fractions in her arithmetic studies, and yet be incompetent to keep an ordinary house account book or to make quickly a simple mental calculation. The sort of knowledge gained by cramming is painfully evanescent. It melts away with want of use, leaving nothing whatever behind. To retain for any length of time precise information on any subject requires a keen interest to have been aroused in the learner, and this is the last thing usually aimed at by school teachers.—*Saturday Review*.

The Art of Deception.

One of the most singular inconsistencies to be observed in everyday life is found in the different manner in which the habit of deception is regarded according to the age and position of those who practice it. Children, as soon as they become capable of distinguishing right and wrong, are taught to look upon deceit as one of the worst sins that can be committed. Boys at school are not only taught the beauty of truth by their masters, but, in a certain rough fashion reverence it among themselves. A boy, for instance, who parades ostentatiously to his master an assumed steadiness of principle and submissiveness of demeanour is very soon branded with the odious title of sneak. On the other hand, occasions arise in schoolboy life when by sticking to a deliberate falsehood, a boy may gain for himself the reputation of a hero among his fellows. This, however, is a detail of the curious system of school-boy morality, the unwritten laws of which might afford an interesting matter for study. Girls, it would seem, are more inclined to untruthfulness than boys; but this inclination is really very often the result of moral cowardice, a defect which may be said to be as common to boys and men as to girls and women. But in the one case there are deterrent influences, absent in the other;

which often lead to the attempt at over-coming or at any rate concealing this fault. A boy who has invented a story to save himself from a scrape, and is found out, is generally made to feel in some tangible way that he has been guilty of a gross blunder, if not of a crime. He becomes conscious that his conduct has gained him nothing but a punishment and the scorn of the community. With girls the matter is somewhat different; some form of punishment may be inflicted, but the sense of having done a shameful thing is less frequently and less strongly inculcated. A girl who has been detected in a falsehood may be teased on the subject by her companions, but she will not be shunned or despised. Thus she is very likely to learn in early life the great maxim that it is not crime but detection she ought to avoid. Among a certain class of grown up women there is little more disgrace attached to untruthfulness than among girls; and this it must be said is to a great extent the fault of the men, who so diligently assure women that they are by nature untruthful, that it is small wonder if they end by believing the assertion and acting upon it. It also occurs that certain women who have cultivated a love for truth become disgusted at the general weakness of their sex in this respect, and fly in consequence to the opposite extreme. They judge it necessary to employ some striking means for convincing the world that they are not as other women are, and that whatever they say is trustworthy, and they therefore affect an irritating sharpness of manner and an uncomfortable habit of saying the most disagreeable things they can. In order to avoid flattery they overwhelm one with bitter criticism. Perhaps they are however more tolerable, inasmuch as they act from principle, than the women in the world who are accomplished in the art of deception, and employ all its resources to wound anyone against whom they have a grudge. Their words are to those of a woman who flaunts her truthfulness in one's face as the bite of a snake to the chance blow of a bludgeon. Both, however, may be said to be results, in opposite directions of the same system. The dangerous woman probably in the matter of untruth is she who, with a frank manner, a pleasant smile, and the honest appearance of Iago, will look you full in the face and tell you what she knows to be a deliberate lie. And such people are commoner than may be supposed, inasmuch as the fallacy that a person skilled in the art of deception cannot look others in the face is still very generally entertained, although it has been often enough exposed.

—From the *Saturday Review*.

Teachers.

Teachers, in common with persons in the ordinary walk of life, are, more or less, under the control of habits that exert a powerful influence upon their daily work. In the school room, we know of none more pernicious than the habit of scolding. It is often the result of nervousness, and an irritable condition of both mind and body. Any one weary is often easily annoyed at the most trivial causes, and naturally more liable to commence finding fault with those who are within their reach.

It is astonishing how soon a teacher who indulges in scolding at all becomes addicted to it, and confirmed in it. It is a habit easily formed, and is as unreasoning as it is unreasonable. If influenced only the person indulging in the disagreeable flow of irritating words, it would be less obnoxious; but it is a contagious habit.

Once introduced into the school room by the teacher, and it is pretty certain to effect all the members of the school. The rumbling of distant thunder, catervaulings or a discordant hand-organ under one's window grinding out harmonious sounds, are pleasant experiences compared with the habitual scoldings of a teacher, confirmed in the use of words that grate harshly upon the ears of the pupils. We regret to say that many otherwise excellent teachers of our schools, are victims of this disturbing habit. We think, also, that ladies contract the habit more frequently than gentlemen, in the school room. This may be because they live more within-doors, and are more subject to the effects of over-heated and vitiated atmosphere, which is trying to the nervous system and impairs the healthy condition of the body, and destroys the cheerful and lively tone of the mind. Possibly their natures are more delicate and susceptible, and their sensitiveness more easily wounded, than the other sex. We remember that the poets often sing of woman as "divine;" but no stretch of poetic fancy or soaring of the imagination, could convince us that there was much of *real* divinity in a lady teacher who was habitually addicted to the habit of scolding as a governing force in the school room. But our courage fails us, and we will say no more, lest some "fair one" should ferret out our editorial retreat, and scold us for what we say about scolding in school.

—*New England Journal of Education*.

Confucius.

Confucius was a celebrated Chinese sage, born June 19, 551 B. C. His own name was "Kong," but his disciples called him "Kong-fu-tse" (i. e. Kong, the master or teacher), which the Jesuit missionaries Latinized into "Confucius." His mother called him "Kieu" (little hillock,) because he had an unusual elevation on the top of his forehead.

We give some of his wise educational maxims:

1. The cultivation of the person depends on rectifying the mind.
2. The expression,—“As we cut, then file,” indicates the work of learning; “As we chisel, and then grind,” indicates self-culture.
3. Great learning teaches,—to illustrate illustrious virtue; to renovate the people; and to rest in the highest excellence.
4. Without knowing the force of words, it is impossible to know men.
5. Enrich the people, and what more shall be done—teach them.
6. Learn as if you could not reach your object, and were always fearing, also, lest you should lose it.
7. The scholar may not be without breadth of mind, and vigorous endurance. His burden is heavy and his course is long.
8. There are four things which should be taught,—letters, ethics, devotion of soul, and truthfulness.
9. Be a scholar after the style of the superior man, and not after that of the mean man.
10. To see what is right and not to do it, shows a want of culture.

The grand purpose of school discipline is to train the child for future usefulness; not to secure temporary conformity to a code of regulations. A good school must be drilled to prompt obedience to every word of

command, not merely for the sake of the good order it secures, but because it helps to form correct habits, and brings the silent forces of mental and moral power into submission to the *will* of the child. In this view the child becomes the pioneer of a positive and earnest manhood. Training is definite and practical work, yet with results reaching far into the infinite future. The teacher must lead the way with a calm, steady purpose and yet with a concealed energetic power, born of the double sense of duty and right, which never relinquishes a purpose wisely taken. This hidden power of will, which does not tire with difficulties nor cool with obstacles or delays, is the glorious element of force which governs children in a way that will enable them to govern themselves in after years, amid the trials and temptations of after-life. An eminent writer says, "To reach the port of heaven we must sail some times with the wind, and sometimes against it; but we must sail, and not drift or lie at anchor."

If there is any sphere of labor requiring absolute and determined purpose, it is that of training children by the exercise of the true governing qualities,—among which we would name steadiness of will, calmness, energy, and endurance. Add to these elements of character a love for the work of training, that begets enthusiasm, and the heart beats quickly under inspiring influence of the great work performed. To "train," a child for life's great mission is, indeed, a work of great responsibility.

A few words on Turkey.

Turkey, or the Ottoman Empire, includes large portions of the continents of Europe, Asia, and Africa, and consists of Turkey Proper, which is under the direct rule of the sultan, and of numerous dependent and tributary states, governed by their own princes. Turkey Proper is partly in Europe and partly in Asia, and is divided into a number of provinces, or *eyalets*.

The total area of the empire comprises 1,812,048 square miles, divided as follows :

	AREA	POPULATION.
Turkey in Europe.....	207,438	9,800,000
" " Asia.....	660,870	16,750,000
" " Africa.....	943,740	600,000
	<u>1,812,048</u>	<u>27,150,000</u>

The states dependent upon Turkey are either subject to hereditary chiefs—as Egypt, Servia, and Montenegro—to elective rulers, or to viceroys appointed by the sultan, and these chiefs, of whatever sort, must on their accession, be approved by the sultan, must acknowledge his suzerainty, and pay tribute; in all other respects they are on the footing of independent rulers.

Turkey Proper, as the immediate possessions of the sultan are called, is bounded by the Austrian dominions, Roumania, and the Black Sea on the north, by Persia, the Persian Gulf, and the Arabian Desert on the east; and by the Red Sea and its outlet, Egypt, the Mediterranean, Greece, the Adriatic Sea, and the Austrian Empire on the south and west.

Turkey in Europe, the smaller of the two divisions of Turkey Proper, is generally hilly and undulating, traversed by a mountain system which has its origin in the Alps, whose eastern extension, the Julian Alps,

enters the country at its north-west corner, runs in a south-west direction as the Dinaric Alps, keeping parallel with the coast-line, and after entering Albania, where it becomes Mount Pindus, assumes an almost southerly direction till it reaches the Greek frontier. This range, which forms the water-shed between the Adriatic and Aegean Seas, has its culminating point in Mount Dinara (7,458 feet), and sends out numerous offshoots over Montenegro and Albania.

The great river of Turkey is the Danube, which, with its tributary, the Save, forms the northern boundary, and receives in Turkey the Bosna and Drina from Bosnia, the Morava from Servia, and the Iskra and Osma from Bulgaria. The Maritza, whose basin is formed by the Great Balkan and its two south-eastern branches, and the Struma and Vardar, in Macedonia, are also considerable rivers, but those which are situated to the west of the Dinaric-Pindus range are, from the proximity of that water-shed to the seacoast, insignificant in size.

On the high lands the cold is excessive in winter, owing to the north-east winds, which blow from the bleak and icy steppes of Southern Russia; and the heat of summer is almost insupportable in the western valleys. Violent climatic change is, on the whole, the rule in European Turkey; but those districts which are sheltered from the cold winds, as the Albanian valleys, enjoy a comparatively equable temperature. Although the soil is for the most part very fertile, but little progress has been made in the art of agriculture, and the most primitive implements are in common use. The cultivated products are maize in the south; rice, cotton, rye, barley in the centre, and millet in the north; the natural products are the pine, beech, oak, linden, and ash, with the apple, pear, cherry, apricot in the Danube basin; the palm, maple, almond, sycamore, walnut, chestnut, carob, box, myrtle, laurel, etc., in the provinces south of the Balkan; large forests of fir and pine in the north-west; the olive, orange, citron, vine, peach, plum, and other fruit trees in Albania; and abundance of roses in the valley of the Maritza. The mineral products are, iron in abundance, argentiferous lead-ore, copper, sulphur, salt, alum, and a little gold, but no coal. The wild animals are the wild boar, bear, wolf, wild dog, civet, chamois, wild ox, and those others which are generally distributed in Europe. The lion was formerly an inhabitant of the Thessalian Mountains.

TURKEY IN ASIA.—This portion of the Turkish Empire is more hilly than the other; the two almost parallel ranges, Taurus and Anti-Taurus, which are the basis of its mountain system, cover almost the whole of the peninsula of Asia Minor or Anatolia, with their ramifications and offshoots, forming the surface into elevated plateaux, deep valleys, and enclosed plains. From the Taurus chain the Lebanon range proceeds southward parallel to the coast of Syria, and, diminishing in elevation in Palestine, terminates on the Red Sea coast at Sinai. Besides the Euphrates, Tigris, and Orontes, the only important rivers of Turkey in Asia are the Kizil-Irmak, which rises on the borders of Cilicia, and after a devious course across the peninsula, falls into the Black Sea near Samsoun; the Meander and Sarabat, which flow to the Aegean Sea; and the Sakaria, which empties itself into the Euxine. On the whole, Turkey in Asia is ill-supplied with water; and though the mountain slopes afford abundance of excellent pasture, the plains and many of the valleys, especially those of the Euphrates, Tigris, and Jordan, are reduced by the parching droughts of summer to the condition of sandy deserts.

The fertile portions produce abundance of wheat, barley, rice, maize, tobacco, hemp, flax, and cotton; the cedar, cypress, and evergreen oak flourish on the mountain slopes; the sycamore and mulberry on the lower hills; and the olive, fig, citron, orange, pomegranate, and vine on the low lands. The mineral products are iron, copper, lead, alum, silver, rock salt, coal (in Syria), and lime-stone. The fauna includes the lion (east of the Euphrates), the hyena, lynx, panther, leopard, buffalo, wild boar, wild ass, bear, wolf, jackal, jerboa, and many others; and the camel and dromedary increase the ordinary list of domestic animals.

Notwithstanding the primitive state of agriculture in Turkey, the extreme fertility of the soil, which returns from twenty-five fold to one hundred fold, makes ample amends for this defect, and supplies materials for the comparatively unimportant manufactures and industries of the country. The products are wax, raisins, dried figs, olive oil, silks, red cloth, dressed goat-skins, excellent morocco, saddlery, swords of superior quality, shawls, carpets, dyestuffs, embroidery, essential oils, attar of roses, plum brandy, etc. The commerce of Turkey is extensive and important, and under the influence of judicious regulations is rapidly increasing. Detailed statistics are not obtainable. The average annual value of the imports of Turkey in Europe is estimated at \$92,500,000; and of the exports at \$30,000,000. The exports are the surplus of the above-mentioned natural and manufactured products of the country, also wool, goats' hair, meerscham clay, honey, sponges, drugs, madder, gall-nuts, various gums and resins, and excellent wines; the imports are manufactured goods of all kinds, glass, pottery, farms, paper, cutlery, steel, amber, etc.

The merchant marine included, in 1873, 224 sailing vessels of a total burden of 34,711 tons, and 9 steamers, aggregating 3,049 tons. The total tonnage of the merchant marine is estimated at 180,000.

The sovereign is commonly styled sultan, but has also the titles *padishah*, grand seignior, *khan*, and *hunkiar*; though nominally absolute, his power is much limited by the *sheikh ul-islam*, the chief of the *ulemas*, who has the power of objecting to any of the sultan's decrees, and frequently possesses more authority over the people than his sovereign. The supreme head of the administration, and the next in rank to the sultan, is the grand vizier (*sadr-uzam*), under whom are the members of the cabinet or *divan* (*menasibi-divaniye*), namely, the presidents of the supreme council of state (*alkiami-adlie*) and of the *tanzimat*, the *seraskier*, the *capudan pusha*, or high-admiral, and the other heads of departments of the administration. The governors of the *cajlets*, or provinces, are styled *walis*; each *eyalet* is divided into *sanjaks* or *livas*, ruled by *kaimakams*, each *liwa* containing a number of *cazas*, or districts, and each *caza* a number of *nahiyehs*, composed of villages and hamlets.

According to the budget for 1875-6 (the year 1291, according to the Turkish calendar), the estimated public revenue was 4,776,588 purses of 600 piastres each; the expenditure, 5,785,819 purses. The foreign debt of Turkey amounted in 1875 to \$924,908,900; the internal and floating debt has been estimated variously at from \$65,000,000 to \$150,000,000.

The military forces of Turkey were in 1875 officially estimated as follows: on a peace footing, 157,667 men; on a war footing, 586,100.

The navy consisted at the end of 1875 of 20 iron clad ships and 70 other steamers. In addition to these there were 4 steam transports and a number of old sailing-vessels not fit for service. The total length of railways

open for traffic on January 1st, 1875, was 825 English miles, of which 654 were in Europe and 171 in Asia. The length of telegraph lines on the 1st of January, 1875, was 17,597 miles. The total number of despatches carried in the year 1874 was 910,130, of which number 102,987 were international messages.

Education was long neglected, but in 1847 a new system was introduced; and since then schools for elementary instruction have been established throughout Turkey, and middle schools for higher education and colleges for the teaching of medicine, agriculture, naval and military science, etc. In 1870, Constantinople had 415 public schools, which were attended by 24,000 pupils.

Spelling.

How to teach spelling still remains a problem, and learning still remains a task and will to the end. The philologist can hardly undertake a more difficult or more hopeless task than that of reducing English orthography to anything like uniformity and at the same time make it tolerable to the generation or two who will be compelled to know both the present and the reformed ways during the period of transition. However desirable a reformation may be, whether one which shall radically and at once put our orthography on a rational basis, or one which shall be content, at first, with correcting some of the most absurd and anomalous features of the present way of spelling and by the obvious and great relief of these changes reconcile all to further modifications, it must be, in order to either permanence or value, under the direction of men of science and judgment and not in hands of mere orthographic mutineers. At any rate, such a reform will not come in haste, and the present generation must learn the current orthography, and the question constantly recurs how to teach it.

Spelling, for the ordinary pupil, cannot be learned *without work*. A few seem to spell, as a few seem to read or to sing, by gift of nature, but they are very few. For most, spelling is the result of much study. The irregularities of the language impose this necessity upon very nearly all, and there is at present no escape. We may much prefer to be studying nature or to be studying Algebra; but if we would spell correctly and be sure that our letters and other writing will not disgrace us in this respect, we must pay the cost, we must learn the spelling lesson, and we must practise till we are perfect. The neglect of this will account for some of the poor spelling prevalent in schools and elsewhere; spelling is not practised to such degree and with such exactness of requirement as to make safe spellers.

Next, spelling, like anything else, is best learned *by children* when special and sole attention is given to it. Spelling, if it be only a part of an exercise, one of several things attended to, will make but slight impression. Here is the cause of failure in result of much teaching of spelling; it is an object-lesson in etymology, and the spelling is not sufficiently separate from other points of apparently—and if spelling is already known of really—greater interest to make any permanent impression; it is a "word-building" lesson, in which words are "built" rather than spelled; attention is divided among several objects and not concentrated on any; in these cases the *spelling* at least suffers. Grown up students may make spelling an incident in a lesson in philology, and may fix this in connection with other lessons; a class in physiology may fix this in connection with other lessons; a class in physiology may have a spelling lesson in the terms of the science, as incidental to physiology; compositions and every written exercise should make spelling an important incident; but children as a rule, and children of quite large growth will learn spelling only by attending to it as *spelling*. A set lesson, in which *spelling* is the only test of merit and is the only thing required, a lesson in which attention is fixed sharply on this one point, is essential for children; they may do all the rest beside, attended to all the accessories and whatever "gets up an interest," and get good from the variety of practice, but this they *must* do.

Next, if spelling is not learned *in early life* it is scarcely ever learned thoroughly. Particularly is this the case with those

whose training in youth neglects this for other things. One beginning his book-education late in life may, if he takes the right course, learn this as well as he learns other subjects, though such a one always labors under the disadvantage of not having learned some things at the time of life in which they are most easily learned. But one who grows up through the grammar or high school with habits of inaccuracy will almost certainly carry them into business, and will reveal them in legal documents or in written sermons. The worst spellers I have known have been grown-up students in higher English and Latin, students who ever really learned any "common subject." And they seemed as insensible to the disrepute of such ignorance as they were incorrigible in the practice of it. They had failed in the early drill which teaches and fixes good habits, and they were unwilling to submit themselves to any process which might promise to remedy, in part, their fault, but promised only at a price of labor and perseverance which require a sort of heroism to undertake.

They are good spellers and they only—excepting the very few whom we call *natural* spellers, and they need the same drill though not to the same extent with others—whose attention is called constantly and sharply to the form of words while they are getting their vocabulary and are first coming into contact with written words as signs of ideas. Children now learn words as wholes and then separate them into letters. In this way they very soon learn to recognize in other words, not yet taught to them, the combinations which their eyes and ears first, and then their tongues, have already been made familiar with, and so are constantly reading and spelling ahead of the teacher's lessons. They learn to jump at pronunciation and meaning, and very early in the process of reading and spelling astonish and perplex the teacher by had knowing much more than has been taught. It is not possible, if it were desirable, for the teacher to keep the spelling and analysis and definition lessons, and whatever other lesson it may be the practice to connect with the acquisition of new printed words in the first stages of book learning, abreast with the child's own acquisition of a vocabulary. He will learn words in their use and in their meaning faster than the teacher can possibly furnish them in the usual manner of giving lessons, and he will learn them accurately, so as to know them and so as to reproduce them to the ear or to the eye in reasonably certain opposition to the exactness and accuracy of the attention which he is compelled to exercise on such as form the material of his daily drill. That is, he will speedily and accurately extend his spelling lesson and his pronouncing lesson to words which are similar or analogous to those which his lessons have fixed in his eye and ear. If these organs and his memory are drilled to see, to hear and to remember some words just as they are, he will for himself see and hear and remember many more, and if the drill is kept up long enough he will be a reasonably safe speller: but if this process is not begun early and persevered in rigidly during the first years of school life it is hardly possible that the child will ever learn to spell. The sharp sense and the ready verbal memory of childhood seem to be almost essential to the learning of this art.

On the other hand, those who have been drilled to see correctly the form, and have been accustomed to hear correctly the sounds of words and have at the same time been exercised in making the written form represent the sounds heard, that is, in writing words, will presently form the habit of learning the spelling of every new word, as a matter of course, the forms being accurately noticed as the meaning is for the first time ascertained, and the two being fixed in the mind so that the one shall always suggest the other. This cannot be said of those who have not been carefully drilled in spelling. They are as uncertain and as careless about new words, and words which come to their notice later in life, as of those they first neglected to learn. They can never learn to spell more than they can learn any thing else by *beginning in the middle and going backward*. The form of words can be remembered only by being seen just as they are and seen on *purpose* to be remembered, as the railroad conductor sees his passengers, or as the detective searches the face of a suspected person that he may know whether it answers to the description of the man he wants.

Now a days the almost universal method of spelling lessons is the written. The argument is good and the practice should be in writing. The argument is good and the practice is good. It is possible, however, to overdo this, or rather to neglect another aid. It is true that we need to see a word just as it

in order to write it in the same way ourselves; do we not also need to *hear* it just as it is for the same purpose? If both ear and tongue are accustomed to scrutinize words, and both pencil and eye are habituated to reproduce them, the habit of accuracy may have two points of attachments instead of one. We do not want to make the written spelling less abundant, but the oral a little more so.

What shall the spelling lesson be after children get out of the second or third readers? What shall be the daily *drill*? We can make secondary lessons out of the names of articles sold in a shop, or of the vegetables raised in a garden, or of the parts of a house, or of a taste of etymology, or of a list of all the words which begin with a certain prefix or end with a certain suffix. There are ten chances to one that the teacher does not know any basis on which to build any but the most precarious (etymology or word-analysis, he knowing no Latin and less Greek or French or Anglo-Saxon; and there are ten chances to none that the people has no knowledge of such things and will not get it under such teaching.

Spelling books, or set lessons arranged for the daily drill, made up of the "substance of doctrine" in this subject seem to be both a necessity and a convenience. The ordinary teacher will do far better with them than he can do without. Indeed, he will only make a caricature and a blunder of his spelling-lesson if he did not use them. He can make orthographical excursions and spelling picnics with safety, if he has some good guide to call him back when he gets too far away from work and too much engrossed with exercises whose main interest is not founded in spelling, but he needs and would better stick pretty closely to his guide-book and go out on such expeditions or raids as it may suggest and show the way to.

Shall he learn by rule? If the language would conform to rules, this would solve the question, but it will not till the reform comes. Scarcely any rules, which are not more confusing and misleading than helpful, can be given. Three or four perhaps half a dozen, may be of help, but beyond this they are almost worthless. For example; to determine which of the two letters of the diphthong *ei* precedes the other, we are told by some that if the preceding consonant have an *s*-sound, *e* comes first; this will spell many words and would be a great help but for such bothersome exceptions as *siege, sieve, cuirassier financier, &c.*, and if there were not so many words in which *e* comes first, though the combination is not preceded by an *s* sound: as *foreign, reign, vein, mullin, neigh, &c.* Kerl says: *always c-ei*; how then about *deficient, proficient, sufficient, conscience*, not to say *glacier* and *species*? Another says (Westlake) *cious* is the spelling for words which pertain to matter, for all other *cious*. I find no exception to the first half of this rule; but how about *spacious, meretricious, luscious* and *capacious* in its first meaning? It can hardly be more than a chance that the rule is as nearly true as it is, and it is only half a rule at best, for its legitimate extension to include another preceding consonant, *t*, with precisely the same vocal power as *c* in such cases, puts us at sixes and sevens, as there as many *teous-es* as *tious-es*. No principle of orthography is involved and hence no safe and comprehensive rule can be made. A very few rules, however, are of service.

A principle of arrangement of a spelling book may be found in the classes of errors almost universally made. These are the interchange of alphabetical equivalents, double or single consonants, the vowels of obscure or unaccented syllables, and words of similar or nearly similar pronunciation. For example; the child does not know, unless he *knows*—that is, he cannot guess, or determine by any rule—whether to write *s* or *c* in the last syllable of *supersede* and *intercede*, one *g* or two *g*'s in *maggot* and *fagot*, what vowel to write for the second syllable of *separate* and *origin*, and whether to write *beach* or *beech*, *principal* or *principle*, as detached words, undefined. If he were drilled in miscellaneous collections of words, a rule being thrown in now and then where a really helpful one can be made and a foretaste being offered of the way in which words are made from other words, just enough to suggest that a very inviting field lies not far outside of his spelling lesson, and not neglecting a full collection of phrases containing homophonous words, would he not be taking, about as direct a road to correct orthography as can be found? Thus: if all the words, or a good share of them, containing *ei* and those containing *ie*, and those which have two *n*'s or *g*'s and those having only one, and those which double the consonant or drop the final vowel on undergoing some modification, &c., were put together, and were followed by a collection of those which cannot be made to go

together under any general rule or principle, and if it were made up of spelling lessons only, would not the ordinary teacher have a good spelling book?

But let it be repeated that faithfulness and persistency of drill, on some plan, is essential, and that as a rule, boys and girls who are allowed to spell inaccurately or to neglect it altogether will not spell correctly. The way to learn to spell is to spell.

X.

OFFICIAL NOTICES.

Department of Public Instruction.

APPOINTMENTS.

Quebec, 23rd November, 1876.

His Excellency the Lieutenant-Governor has been pleased, by order in council, dated the 1st November instant, to make the following appointments of school commissioners, to wit:

County of Bagot, Saint Théodore d'Acton.—Ambroise Duncan, esquire, *vice* Mr. Louis Robichaud.

County of Ottawa, Buckingham.—Donald Urquhart, esquire, *vice* the late John Higgins.

SCHOOL COMMISSIONERS AND TRUSTEES.

Quebec, 29th November, 1876.

His Excellency the Administrator of the Province has been pleased, by order in council, dated the 25th of November instant, to make the following appointments, to wit:

COMMISSIONERS.

County of Beauharnois, town of Beauharnois.—The Reverend Louis David Charland and Messrs. Louis Raymond Baker, Cyrille Guimond, Eugène S. Manny and John Sullivan.

County of Berthier, saint Michel des Saints.—Jérémie Laporte, esquire, *vice* Charles Bellarmin Brassard, Hilaire Gendron, esquire, *vice* Louis Narcisse Ferland and Japhet Ferland, esquire, *vice* Olivier Hétu.

County of Drummond, Saint Fulgence.—Fulgence Prefontaine, esquire, *vice* the Reverend Thomas Quinn.

County of Hochelaga, Cote St. Paul.—Messrs. Joseph Dun, Peter Jackson, Godfroy Provost, Céselin Lalonde and François Tary.

County of Pontiac, Sainte Elizabeth de Francktown.—Messrs. James Dolleham, Thomas Martin, Morgan Kavanagh, John Sloan and Patrick Quinn.

TRUSTEES.

County of Shefford, Sainte Pudentienne.—Charles Leclair and Charles B. Smith, esquires.

ERECTIONS AND ANNEXATIONS OF SCHOOL MUNICIPALITIES.

Quebec, 29th November, 1876.

His Excellency the Administrator of the province, has been pleased, in virtue of the powers conferred on him by the 30th clause of chapter 15, of the Consolidated Statutes of Lower Canada.

1. To erect into a distinct school municipality the parish of Saint David, in the county of Lévis, with the limits which have been assigned to it for civil and rural purposes, on the 14th of February last (1876), to wit: On the west from the summit of the Cape the line between the lands of François Bourrassa and Benjamin Lemieux as far as the depth of the first range of the said parish, a distance of forty two arpents; thence following the said line a length of ten arpents and eight perches in the concession of the continuations (*allonges*), as far as the meeting of this line with that which divides the said continuations from the range Potage or petit Saint Henri; thence towards the south west following the said division line between the continuations and the range Potage or petit Saint Henri as far as the river Etchemin, a distance of twenty arpents; thence following the sinuosities of the said river going

towards the east as far as the division line between range Potage or petit Saint Henri and the parish of Saint Henri de Lauzon; thence following this latter line going towards the north east, twelve arpents and four perches to the point where this line intersects the line of division between the numbers one hundred ninety one, of the plan of the seigniorie of Lauzon; thence towards the north west about one arpent two perches on the line of division between the said numbers one hundred and eighty nine and one hundred and ninety one to the intersection of the river Pintendre; then following the sinuosities of said river Pintendre to the intersection of the division line between the range Coutance and the village des Coutures; thence thirty arpents towards the north west following the line which divides the range Coutance from the said range Potage or petit Saint Henri and from the said continuations; then following towards the north east an irregular line, being the division between the lands of Thomas Samson and Augustin Samson to the summit of the Cape, north by the limits of the town of Lévis.

2. To erect into a distinct school municipally the parish of Saint Telesphore, in the county of Lévis, which, however, shall contain for school purposes, only the part which is outside the town of Lévis, revoking thereby the proclamation of the 17th of June last (1876), which erected it with the same limits as those assigned to it as a parish.

3. To detach from the municipality of Saint-Stanislas de Kostka, in the county of Beauharnois, on the south side of the river Saint-Louis, starting from the land and residence of Jérémie Mouette, coming to the road which separates the said parish of Saint Louis de Gonzague, in the same county, that part of the parish of Saint-Louis de Gonzague, on the south side of the river Saint-Louis, in the eighth range of Ormstown, starting from the land and not from the residence of Bellarmin Laberge inclusively, to the road which separates the said parish from that of Saint Stanislas de Kostka, that part of Saint Louis de Gonzague, north of the river Saint Louis from the land and residence of M. Narcisse Menard inclusively, coming to the Larocque road, to annex them to the municipality of Sainte Cécile, in the said county of Beauharnois, for school purposes.

4. To detach from Notre-Dame de Lévis, in the county of that name, the part hereinafter described: bounded on the east by the village of Bienville, south by the government property, west and north by the town of Lévis, to annex it to Lévis for school purposes.

Quebec, 7th December, 1876.

His Excellency the Administrator of the Province has been pleased, in virtue of the powers conferred upon him by the 136th and 137th clauses of chapter 15 of the Consolidated Statutes of Lower Canada.

Gaspé, Glaude Arbour.—To revoke the appointment of the 9th of August and to allow the one of the 9th of June last, to stand, the persons named on the 9th of August aforesaid not residing at Glaude Arbour.

County of Gaspé, Aubert.—To revoke the appointment of the 20th of September last, relative to the Revd. M. Chs. N. Boudreau and to Mr. Alexandre Coruier, an election return having been sent to the department in the meantime.

County of Maskinongé, Saint Elio.—To appoint Mr. Benoni Gardeau, *vice* Mr. J. B. Plébert.

Quebec, 15th December, 1875.

His Excellency the Administrator of the province has been pleased, by order in council, dated the 11th of December instant,

1. To erect into a school municipality the village of Cowansville, in the township of Dunham, county of Missisquoi, comprising lots Nos. 24, 25 and 26 of the fourth range of Dunham; and the west half of lots 24, 25 and 26 of the third range of the said township, said erection to take effect only from the first of July last, according to a special agreement with the commissioners of Dunham.

2. To erect into a distinct school municipality, and under the same name, the mission known as *Lac Noir*, in the county of L'Islet, reaching from townships Lafontaine and Garneau, to No. 1 of township Ashford and Fournier, on range A.

3. To detach from Tadoussac, county of Saguenay, and to erect into a distinct school municipality under the name of "Moulin Beaudé," the territory hereinafter described, to wit: commencing on the south west side of Richard Morin's property, and running to river Beaudé, on the north east, and comprising the Saint Michel and Saint Joseph concessions.