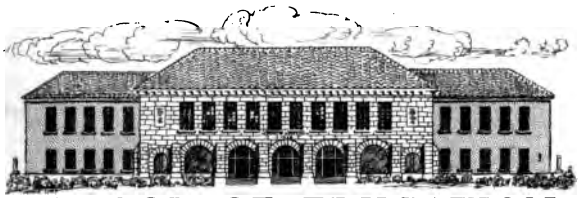
SUCCESSFUL TEACHING

FIFTEEN STUDIES
By PRACTICAL TEACHERS



SUCCESSFUL TEACHING

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Fifteen Studies by Practical Teachers
Prize-Winners in the National
Educational Contest of 1905

WITH AN INTRODUCTION
BY
JAMES M. GREENWOOD

Superintendent of Schools in Kansas City, Mo., Author of "The Principles of Education Practically Applied," "A History of Arithmetic, Algebra, and Geometry," etc.

FUNK & WAGNALLS COMPANY
NEW YORK AND LONDON
1906

[*Printed in the United States of America*]
Published April, 1906

PUBLISHERS' NOTE

The essays embraced in this volume are the results of a contest initiated by the publishers in the spring of 1905. Cash prizes were offered for the best essays on the subjects named, all of which were to have close relation to modern methods in teaching, and in so far as possible were to be based on personal experience. Each essay was limited as to its length—in some instances to 2,000 words; in a few others to 2,500.

Responses came from all parts of the United States, the contestants being teachers in grammar and high schools, and in colleges and universities, both male and female. Owing to the large number of essays submitted, considerable time was found necessary in making an adequate examination of them with a view to the awards. It was not until the beginning of 1906 that a final disposition was made of the whole series, and the prizes were awarded and the amounts paid.

James M. Greenwood, Superintendent of Schools in Kansas City, Mo., was asked to read the essays and prepare for them an introduction, giving such co-ordination and coherency

to the whole subject of modern methods in teaching as, in his judgment, might properly be done in an article of moderate length, accompanying the essays.

The book thus brought together is now offered to the public, in the expectation that teachers and others interested in the most advanced and successful methods will find the essays and Mr. Greenwood's introduction of exceptional interest and value.

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Introduction

BY JAMES M. GREENWOOD

INTRODUCTION

THE OBJECT

THE essays in this volume are intended to help teachers in their daily work; to give them broader views of teaching certain subjects, better methods of presentation, and deeper insight into the thoughts, feelings, emotions, desires, passions, and aspirations of a developing human soul.

Each essay sets forth in clear language the view of the author, and how in theory and practise a certain phase of educational work, either of subject-matter, or the underlying principles upon which it is based, may be used by the teacher, or practised by the child to further his progress.

One of the chief benefits arising from thoughtful teaching is the grasp it gives the teacher over subject-matter, and in directing the energies of the pupils. Thinking is hard work, and education is not a matter of chance, but a purposeful effort toward a direct end. It consists

in what one can do, or is enabled to do, rather than what one is, or what one knows. Since education is a dynamic force, it implies skill to use what one possesses,—skill to use one's powers forcefully on new questions and situations as they arise. The underlying fact in educational systems to-day is to perfect the state by perfecting the individuals composing the state through culture, knowledge, wisdom, —into doing one's life-work well.

The science of education is founded on the hypothesis of a continuous period of growth. In this sense the human mind is a growth. In its working processes the mind is so constituted that in the act of acquiring knowledge by its own inherent energy, it thinks things or notions that are similar, into groups, while those having unlike or dissimilar properties are separated. As an illustration:—the pupil in analyzing a sentence in English Grammar, never literally separates the words, phrases, and clauses into essential, subordinate, and connecting elements, but he thinks them as separated; but in handling material objects, a physical division frequently occurs. Herein lurks a possible danger, namely, that a pupil may be kept so long working with *thing knowledge*, that he loses the power to work with perceptions, conceptions, inferences,

and of drawing conclusions from data given, or to take hold of a complex problem or situation, and divide each difficulty into as many simple portions as possible in order to examine each separately, and to reach eventually a correct conclusion.

This presupposes an orderly plan of investigation, beginning with the simplest and most obvious cases first, so that by easy steps one goes on building up a more complex whole, till all the parts are shaped into a symmetrical whole as constructed by the mind into a body of knowledge. Knowledge is thus built up in the mind into groups and masses, if it is to be of real value to the possessor.

MEMORY CULTURE

Not many years ago it became quite the fashion in many educational circles to decry memory education in season and out of season. This opposition, like many other ideas that have swept over the country periodically, had some foundation in fact for its existence. The real objection, instead of a wholesale condemnation of memory as an important attribute of the human mind, should have been filed against the abuse or misuse of memory itself.

A very brief analysis of the function of the memory will show what office it performs during the whole educative period. What the mind retains of all its former mental acts, states, and feelings as impressions received from the external world, is the raw material out of which one constructs the real world in which he lives. To observe sensations, perceptions, and conceptions, whether from the external or mental world, without the power of holding the knowledge thus gained, is to be a mental imbecile. Knowledge that is a momentary acquisition and then vanishes, is not knowledge in any sense, and the effect is precisely the same as if it had not been.

The object that produces the perception, whether of internal or external origin, may be removed, but the recollection of it abides, and is an enduring possession of the mind which may be used at any time. Whether an impression is made in the mind lasts or fades away, is an index of the mind's retentiveness, or its power of holding impressions in solution after the producing causes have been removed. This power depends primarily on the condition of the brain centers and their modes of activity. The retentive memory is that form which produces past impressions whenever they are needed, and produces them accurately.

Many hold an opposite opinion and contend that the child is to observe and feel, but he is to commit nothing to memory except as he wishes. Were it possible for humanity to act on this principle of learning exclusively, all knowledge would be swept away. Even the learner would forget his own name,—he would not know mother, home, or any of those associations which make up the greater part of life. There would be no data whatever for the mind to reason upon. Fixed or stored-up information would nowhere be found. All that could be possible under such limitations would be instantaneous impressions, vanishing as rapidly as they came. The memory acts as a sort of mental wheel-barrow for the transportation of experiences, but it is out of this gathered-up material that the mind, by virtue of its organizing and selective power, arranges and classifies its material.

The whole sphere of reproductive knowledge answers in a general way to what is called memory. To retain an impression of a thing is to remember it; to be able to reproduce a description of it in words, or in a picture, owing to the accuracy or faithfulness with which it is executed, is a test of one's retentive and reproductive power. To take hold of an object of

thought and make it a part of one's mental furniture by fusing it with knowledge already possessed, is the most important function of memory products. Before there can be reproduction, there must be acquisition, and repetition follows as the chief act in fixing knowledge after it has been once acquired.

To understand and to control these agencies with the view of getting the most substantial and abiding results in definite knowledge, should be the chief aim of teachers in directing the learner in the pursuit of truth, or the harmony of thought with its object. For knowledge to be lasting, the impression must be clear-cut and deep, and properly attended to at the time. Memory being preeminently the storage power of the mind, and perhaps most active in childhood and early youth, during this plastic period memory processes are the easiest,—hence truths, elegant and soul-inspiring extracts, principles and definite facts, should be fixed in the memory forever. Any system of education which depreciates the proper use of the memory in the acquisition and retention of knowledge, is to misconceive entirely the proper function of the mind itself.

In answer to the inquiry—what constitutes a good memory? the following characteristics, at

least, may be mentioned: First, quickness in applying the mind to a subject, and excluding all other subjects, in gaining knowledge; second, a good grip on what is once learned and retaining it; third, readiness in recalling exactly what has been learned, said, or done, and the ability to use it whenever it is needed. If education be the preparation for complete living, then a good memory of facts and principles is of great value.

The child needs to be guided by successive steps to right conclusions, not only about the things he learns from books and his own experiences, but to hold in check a tendency in some minds to give answers impulsively without having first thought them out, step by step, till a right conclusion is reached. Thinking should not be regarded as an objectionable process, even by children. A lack of patience to take hold of a problem and proceed with its investigation patiently, is one of the strongest evidences of the shallow training in too many of our schools. Education, then, in the final analysis, consists in training the pupil into right habits of thinking, acting, and sticking to a thing when one starts in with it, till the end is reached.

SELF-CONTROL

There is a wide diversity of opinion on the question of self-control of children, and to what extent it should be exercised over them. One idea is that it should be developed or impressed by unquestioning submission to parental or school authority; another is that untrammeled spontaneity is nature's method of teaching the necessity of self-control. Public opinion at home and in the school-room ranges over this wide area indicated.

There is something in the sturdiness of the Scotch character that challenges the admiration of all thinking men and women in this country. Unswerving adherence to a principle has been a marked characteristic of that people. The moral education instilled into their children made them strong, but sometimes very narrow. The lad is governed by the iron-will of the father. His dread of disobedience gradually develops into a warm veneration for the majesty of the law. The subordination to human law rises into a devout religious feeling,—the solid basis of the Scotch individual and national character, which places law against license, and recognizes the power of the Omnipotent as the highest expression of justice.

No one will deny that there is power in such discipline, and that it was this sturdy element in our New England ancestry that permeated so thoroughly the character of the American people. But another conception has grown up in many American homes of recent years in favor of the free spontaneity of childhood,—minus parental control. Uncontrolled impulses and desires too often mean moral and social anarchy. Children should be wisely controlled, for the wise and definite control by a superior will, developes the will-power of the child, and qualifies him to direct, in a large measure, his own will-power when he reaches maturity.

The whole school training, as well as the home training, should be a preparation for self-control. The child's will is not sufficiently enlightened to guide his activities and control his powers. Uncontrolled force leads to arrested development, a worn-out human remnant, or along a straight road into the human scrap-heap. Every conscious right act strengthens the child's will-power and self-control, and every wrong act weakens them. By degrees the external authority should be diminished till the young man or young woman has learned self-mastery; but the final upshot of it all is, that he who violates a law inflicts the penalty on himself.

NATURE STUDIES

To teach a pupil how to see, how to hear, how to join his thoughts together, either in spoken or written discourse, and how to express them in fit language, covers a large sphere of school work. Nine-tenths of all his knowledge of nature comes through sight and hearing, and perhaps six per cent. through the sense of smell. Education is preeminently the science which should interpret how children grow, gain knowledge from books, people, nature, and how they assort and assimulate what they learn. Nature, as a teacher, is unsympathetic. She does not care whether the learner hurts himself or not. At no time does she anxiously interfere to prevent serious consequences that follow certain actions. Nature's instruction is self-instruction without any explanations. The child through his own experiences, if he keeps his eyes and ears at work, assisted by his parents, teachers, playmates, finds out something about many things. Nature's teachings are also desultory. Lessons of all kinds are mingled in the greatest profusion as well as confusion. Her main business seems to be the training of powers rather than the logical acquisition of labeled knowledge. The child at six or seven is a bundle of all kinds of picked-up, unassorted knowledge. Owing to

the imperfect development of the special senses, nature's teachings to a particular child may be very defective, preventing a proper appreciation of any subject—even to the total darkness of the undertaking.

As much as ought to be undertaken with children in the elementary schools, is to teach them to see clearly and to describe accurately so far as any description may be necessary, whatever they see, hear, smell, taste, or feel. Such work should not be palmed off as science teaching. It is a simple preparation for real science which will come later. Nor is it just exactly the thing to do to transport the farm, including all that pertains to it, into the crowded city schools to teach these children scientific farming, stock-raising, and gardening, than it would be for the country school-teacher to attempt to teach his pupils elaborate systems of banking, practiced in the great commercial centers.

The country child learns much of the things he sees around him every day. He is restricted in his environment, and yet he may get glimpses of city life, and the same is true of the city child's learning something of country life. The swing of the pendulum is on the wane in regard to Nature Study as compared with what it was a few years ago, and there is great danger of its

swinging backward too far. The real place of nature study is as an adjunct to geography, history, and the reading lessons in all grades, and it should be incidentally used to illustrate and enforce moral and industrial instruction in conduct and character building.

READING

The teacher must keep in mind that the pupil is soon to help himself, and that he must become a self-reliant worker and interpreter of what he reads, and that words stand only for ideas, which he must get out of them. Hence the special work of the teacher is to draw out, stimulate, strengthen and develop the thinking powers of the pupil that he may interpret written thought for himself. Every lesson under the head of a skilful teacher should exercise all the intellectual faculties of the pupil. This is possible on the condition that the teacher prepares every lesson beforehand, and has studied it in all its bearings, and is ready to bring out all its striking points.

In reading, the pupil should be instructed not only as to what is proper in interpretation and expression of a selection, but how he may correct his own faults successfully, and to criticise

and avoid the faults of others. The thought element involves two phases, the thought of the author and the interpretation of this thought as understood by the reader. This is an important distinction. As preparatory to the expression of thought, it is assumed that the teacher has given due attention to the physiological conditions of breathing, position, and movements of the body, and has a complete and accurate mastery of all the sounds of the letters of our language. Thought is expressed by utterance and action in reading and speaking. Voice is sound produced by the passage of air through the vocal organs. In every sound of the voice there are certain attributes that are always present. They are technically called,—Form, Quality, Force, Stress, Pitch, and Movement.

There are three varieties of Form; six of Quality; four of Force; five of Stress; five of Pitch; and five of Movement, making twenty-eight in all. While it is remembered that these six attributes are always present in the utterance of every sentence, certainly a fine opportunity is afforded for the exercise of judgment in every reading lesson, to-wit: attention, analysis, comparison, identification, discrimination, classification, and synthesis.

It will be observed that not only the thought

element in the selection demands attention, but that the expression also takes equal rank with it. The first element asks the question, "What does it *mean*?" The second, "How is it to be expressed?" The third, "Can I express it?"

While it is not desirable to employ these formal terms in the lowest grades of reading classes, nevertheless the principles should be practised, and the pupils taught to use their own powers in applying them. The pupil must be taught to read so as to be *heard*, *understood*, and *felt*.

Reading is the most difficult branch in the course of study to teach properly, and it is in this subject that the best opportunity offers for the highest forms of artistic teaching.

THE TEACHER IN ACTION

Teachers must have clear conceptions of the school and of its functions; otherwise, they work at random.

The work of the teacher is narrowed to two sharp divisions,—Thought and the expression of thought, and to two kinds of facts—facts of nature and facts of mind. Broadly stated, all education has to do either with the development of thought or the expression of thought. They are radically different. It is the province of

the teacher to know this difference and to note defects of either kind if existing in any pupil, and how to apply the proper remedy. They are essentially different in nature, character, and mode of development. Thought relations are frequently seized intuitively. Careful expression is of slower growth. The painter works out his ideal long before he puts it on canvas; so of the sculptor, the architect in his building, the composer in the song, and the orator in his speech. By patient work, now here, now there, the great artists have produced their masterpieces. The idea realized in expression is the highest stroke of genius.

Hamilton says,—"all thought is comparison—a recognition of similarity or difference; a coninjunction, or disjunction; in other words a synthesis or an analysis—of its objects."

To think, then, is to bring together two ideas and compare them; note their agreements and differences. A thing is known only by comparing it with the idea already in mind. Comparison is the standard by which the pupil discerns likenesses and differences. The standard of comparison is kept in the mind as a measuring rule. By it, Jacotot was enabled to enounce his dictum: "Learn one thing thoroughly, and compare everything else with it."

Expression depends upon the arresting of thought. It is the power to hold a thought in the mind and dwell upon it to the exclusion of other thoughts, and to describe it with clearness and accuracy. This quality is clearly in opposition to vanishing thought. Opposition is a development, and is an element often overlooked in mental culture. Life, culture, custom, civilization, yea, revolutions, are so many struggles and triumphs against oppositions.

As the teacher's ideals are, so will the school be. Low ideals produce poor schools, and just in proportion as the teacher's notion of what good teaching is, will the school improve or degenerate in quality. If the teaching has the three qualities—of vitality, richness, and stability—there is a great teacher and it will be a great school.

KANSAS CITY, MISSOURI,
February 10, 1906.

Personality as a Factor in Teaching

BY H. MONTAGUE DONNER

PERSONALITY AS A FACTOR IN TEACHING

No OTHER calling or trade, I venture to assert, shows us its devotees so little amenable to the exigencies of hard and fast rules, as the profession of teaching: in no walk of life are the requirements of success so difficult of adjustment to the strict limits of axiom and dogmas.

That this is of necessity so is due to the fact that the successful educator, more than other men, attains his ends as much through unconscious influence as by conscious effort; in fact, this unconscious influence is wider in its scope and more far-reaching in its effects, if not more immediate in its working, upon the pupils coming under its subtle sway, than all the accompanying visible and systematic labor on the part of the teacher.

Of late years it has in many quarters come to be more or less of an accepted doctrine that in order to secure good and durable results from the pupil, his work must primarily be made interesting to him: a theory the exact applicaton of which has formed a bone of contention for many years past between the disciples of rival schools of educational thought. But amid all

the conflicting views as to the proper proportion of interest to be fostered as a rival incentive to the sense of duty or of necessity in the pursuit of knowledge, it has gradually come to be recognized that, after all, the most effective means of creating or of maintaining such interest abides in the personality of the instructor.

And when we try to gain a clear conception of this insidious and subtle influence, this mysterious something, this elusive quality, that we call personality, whose potency is more readily felt than easily expressed in set terms of speech, we are conscious of no little difficulty in seizing upon its constituent elements.

Yet, elusive tho it be, define it we must in more or less conclusive terms, if we are to come to an even partially adequate understanding of the real, the vital importance of this prime factor in educational dynamics.

To begin with, we can, of course, define personality as the sum of the attributes of mind and character that go to distinguish one individual from others of his class or station. That, however, is merely to take a dictionary definition, which will not help us in our consideration of the educational problem with which we are concerned. It is not definition we are in search of so much as it is comprehension: we must

take up our psychic scalpel, so to speak, and dissect and analyze carefully the various qualities or attributes that go to compose the individuality of him who deserves to be called a successful educator. Then, and then only, will it become manifest how paramount a factor individuality is in its influence over the immature minds with which it comes into daily intimate contact.

Our analysis will serve to show in the first place two great component qualities in such a personality: *character* and *culture*, in one or other of which all attributes will be found to inhere. First, as to character. This, the combined impress of nature and of habit through the continuous exercise of moral qualities, the sign manual of habitual uprightness of thought and action, manifests itself more particularly in the teacher in a stern sense of duty and of justice, in impartiality, in a mingling of firmness and gentleness, in an unwavering rebuke of all deceitful or slothful tendencies, in combination with a ready sympathy for the trials and difficulties of his young charges—in sum, in a high, abiding sense of responsibility.

Secondly, as to culture. Character of the highest stamp is lamentably rare, and so, it would seem, is true culture in this center of

rabid materialism in which we live and move—far too rare, even, in that profession where, next to that of the minister of religion, it ought to be most widely disseminated. For into culture there enters much more than mere mastery of intellectual accomplishments; more than painstaking perfection in one or two branches of scholastic study; something beyond the ability to impart information or knowledge, however skilfully and thoroughly; viz.: wide reading on a variety of topics in the worlds of art and letters; a consequent command of one's native tongue not only beyond the circumscribed uses of the school-room, but superior to the limits of slang and the shop-worn language of mart and ledger; an active interest in the doings of the world at large, entailing some acquaintance with men and women of note in other spheres of life; and with all these things an enthusiasm in one's profession that would seek the application, in some form or other, of these varied interests to the work of the school, so as to keep the latter vital and productive of results. The sum of all which is the cultivation, not solely of the intellect, but of the imagination and of the taste in the direction both of refinement and catholicity—the development and enlightenment of the mind and the training of manners.

How few teachers, alas! measure up to the full requirements of this high standard, in which the gentleman (or gentlewoman) and the public-spirited citizen are as much in evidence as the pedagog, any one of whom has made a study of our vaunted school system must be fully aware. Where such a condition of affairs prevails it is surely just to hold responsible for it less the teachers themselves than the system that evolves them—a system wherein all the stress is laid upon mere scholarship, as gaged by the ability to pass written examinations, so that the column of percentages becomes the sole measure of a candidate's worth; a system where a college degree tends more and more to become the shibboleth of initiation into the ranks of the elect; a system that, when the successful candidate has become the full-fledged teacher, persists in regarding him in the light, not so much of an adult man of brains and self-reliance, as of a grown-up school-boy, who must continue to be marked under a score of different heads by the arch-pedagog and his aides in the seats of power.

Who among us has not been made familiar with such a system, by means of which individual initiative is discouraged and enthusiasm crushed? Is it not true that in such a system

the test of the teacher's fitness is held to be the ability to force the largest possible percentage of pupils through the yearly and half-yearly examinations, and this despite the fact that he is called upon to heed a multitude of petty regulations in and out of the class-room, and to attend to a host of clercial duties! The essential, the vital, in the educative process is then inevitably subordinated to the mechanical; instruction is degraded into mere cramming, the *Ultima-Thule* of which is the desert isle of final examination, whereon the fatal percentage tree, the cynosure of teachers' and pupils' straining eyes alike, exhales noxious vapors like those of the fabled upas, deadening the faculties of the unfortunates that come within its baleful shade.

Surely, of all factors capable of effectively combating the deadly workings of this mechanical process of drill and cram so mistakenly dignified by the name of education, the most potent is to be looked for in the personality of the teacher. Consequently, I take it, it can scarcely be denied that any system which fails, in its scheme for the training of teachers, to lay due emphasis on the cultivation of those qualities of mind and spirit that distinguish the thinker and the planner from the mere animated machine, and so assure the evolution of the type of per-

sonality that I have sought to describe—which, in other words, fails to elevate teaching into the rank of a profession instead of the "sorriest of trades," is hopelessly, fundamentally, at fault, and needs to be born again.

For, while method in teaching, which every normal school or teachers' training college bends its energies to perfecting, is, of course, essential, it is only a step in advance of the aimless, desultory fashion of instruction which it is designed to supplant, and will not in itself alone be productive of the highest results, in the achievement of which the human, the personal element must enter. The minister, the actor, and the public orator sway their audiences by the unconscious magnetism of their personal power, and in the domain of statecraft it is becoming more and more an accepted truth that righteous government is less a matter of measures than of men.

In this connection, therefore, it may be well to call in mind an estimate, made by a contemporary, of one of the greatest educators of modern times, one who was essentially a man of practise, of action, rather than of theories. Says Dean Stanley, in his "Life of Thomas Arnold," the famous head-master of Rugby: "He was distinctively a practical man, an empiric of the

best kind. He was governed by two main principles. As a trainer of character, he aimed to make his pupils Christian gentlemen; as a trainer of mind, to make them think." And in another place: "But whatever interest attaches to the more external circumstances of his administration, and to his relations with others who were concerned in it, is, of course, centered in his own personal government of the boys. . . . It was not the master who was beloved or disliked for the sake of the school, but the school which was beloved or disliked for the sake of the master. Whatever peculiarity of character was impressed on the scholars whom it sent forth, was derived, not from the genius of the place, but from the genius of the man. Throughout, whether in the school itself or in its after effects, the one image that we have before us is not Rugby, but Arnold."

There, indeed, are we confronted with a brilliant example of the triumph of personality. We are thus led back to my starting point: that the true object of all education is to produce, not so much *scholars* as *men*—or *mothers* of men, as the case may be—and in the recognition of this fact depends the future welfare of our state. Now, in none of the provinces of man's activity that I have hereinbefore mentioned, save in the

case of the physician, is the personal relation so close as between teacher and pupil, and for every one person with whom the medical adviser comes into occasional intimate touch there are a dozen or a score of youthful minds in daily familiar contact with their instructor. A wealth of personal association is inwoven in the very web and woof of every subject the pupils study with him, and is ever thereafter inseparably active in whatever bearing such study has upon the problems of those students' lives. Thus, it is not too much to say that the teacher becomes in a very real sense a part of his pupils' life, and the influence of the educator who has a full realization of this momentous fact may be almost immeasurable in the formation of the character of his youthful charges, all the more so from the very fact of such influence being so unobtrusive, almost unconscious, in its daily, perhaps hourly, working. Scholarship, however thorough, as the sole equipment of the teacher, will not bring about this result. The bearing, the manners, the personal appearance, the choice of language, nay, the very inflection of the voice, become so many silent but deep channels of the spiritual sea whose waters shall gently overflow the virgin soil of a thousand unsophistocated natures, and fructify it to bear, through the successive sea-

sons of an honored life, a rich growth of the fruits, not only of the intellect, but of the heart and soul.

And the teacher who lives to see some part of such fruition of his sincere efforts and ideals, may indeed feel that he has won the dearest reward in life, conscious, with an ineffable inward glow, that generations to come will arise and call him blessed.

The Value of Psychology in Teaching

BY J. J. SHARP

THE VALUE OF PSYCHOLOGY IN TEACHING

THE success of any man in dealing with his fellows depends largely upon his knowledge of human nature. Experience and observation show that seven-eighths of one's knowledge of human nature consists of a knowledge of the capabilities and modes of activity of the human mind. The lawyer, physician, and clergyman alike, prove by their life-work the truth of these propositions. For, he who unravels successfully legal cases and wins verdicts, needs to know the facts of the mind and the laws according to which it acts and grows; he who deals successfully with bodily disease and weakness, must consider the preponderating influence which the mind wields over the body; and he who makes men holy and ministers to their spiritual wants, needs to know the laws of human thought and the use of arguments and motives.

But more than all others who deal with human nature, the teacher must know the laws of the mind's activity and the resulting processes for its guidance and growth. For it is the special work of the teacher to lead his pupils to know and to train them into right habits of thought

and action. How can he do this unless he understands the process by which the mind comes to know, and the process by which growth in right habits is secured? It is not enough for the teacher to know well the subjects to be taught, but, in addition to this, he must be able so to impart his knowledge as to arouse self-activity on the part of his pupils and induce growth. Very much of the poor work chargeable to the teaching profession is done by teachers who study the book and not the boy. As well expect good teaching under such circumstances as good music from a player who knows only the tunes to be played and not the instrument itself. But, to pursue the figure still farther, the school-room may be said to contain, ordinarily, a large number of musical instruments, each of which differs greatly from the others, on the first day of school, and grows daily into an instrument quite different from what it was the day before. To play on all these instruments and produce sweet, melodious music, without discord, is an Herculean task, and certainly calls for a knowledge both of the instruments and the tones to be produced. One might as well claim that a knowledge of the functions of the tooth is of no value to the dentist, or that a knowledge of the qualities of lumber is of no

value to the carpenter, as that a knowledge of the laws of the mind's activity is of no value to the teacher.

From the cradle to the grave, life is a succession of distinct stages. A study of these stages throws light on human nature, and gives a meaning to every look and action of the individual. It is useless to expect a person at one period to perform the functions of another period. For instance, at one stage the child's memory powers are on top; there is little or no reasoning at seven, eight or nine; abstract mathematics is out of the question then, but give the child history. It is economical to let education follow these periods.

The stages of most interest to the teacher evidently are childhood and adolescence. The former is distinguished by imagination and memory; the latter, by thinking and reason.

During the period of childhood the boy or girl enters school for the first time as a beginner, and receives impressions which are apt to be lasting. His or her whole future may hinge on those impressions. With greatest care and tact should teacher and parent proceed in laying the foundation stones, if the superstructure of future development is to be built with surety of success.

The phenomenal activity of childhood, so noticeable in the average boy and girl, is a direct result of the rapid growth of the body and brain. Every primary teacher is familiar with the exceeding restlessness of the first grade pupils. Indeed, there seems to be no such thing for them as standing or sitting still. They are irritable if confined, joyous if active. Wisely Nature ordained activity as an outlet for the child's superabundant energy, and the teacher who tries to suppress or restrain the child when Nature insists that it shall be free, not only injures the child but commits a crime against reason and sense. The child has a right to play by inheritance, and it is both wrong and cruel to deprive him of this legacy which has descended to him from time immemorable. He is a child that he might play, he doesn't play because he is a child.

One very noticeable feature about the activity of childhood is the exercise of the larger muscles which it invariably involves. The movements are of the whole body, and not of mere portions of it. The fundamental muscles, and not the delicate and finely co-ordinated muscles, are employed in all the movements. Such muscles as are engaged in fine writing, drawing and sewing, are developed later. Especially is this

true of the muscles of the eye. Ignorance of these facts has led to mistakes in training, chorea and other nervous disorders have been traced frequently to fine sewing and stick-laying in kindergarten work. The wise teacher will not compel or permit his young pupils to follow a fine copy in writing, but will encourage them to use the blackboard, where abundant opportunity will be given for exercising the larger muscles. For years, near-sightedness has been held to be inherited, but a close observation of myopia in children reveals the fact that this defect increases after the age of five, thus disproving the theory of heredity, and suggesting a plausible cause in the too close reading and visualization of early childhood. The visual interests of this period are for concrete things. The eye demands pictures,—pictures of real life and objects. This is exercise to the eye, and a proper form of activity.

Childhood has been called the language period par excellence, but this statement has reference to oral, and not written, forms of speech. Every teacher knows how easily and rapidly the child acquires a vocabulary at this stage. He learns language by imitation, and the whole epoch of childhood is, as psychology teaches and as William Wordsworth expresses it, "One end-

less imitation." It therefore behooves the teacher to neglect, if anything, reading and writing during the early stage of childhood, and make playing and story-telling the emphatic work in the years preceding eight. Why not let the child live in a world of sonorous speech, and hear and talk for himself each day? A proper regard for the future usefulness of the eyes of the child certainly requires that a departure be made from the method now prevalent of requiring a large number of essays and written compositions which appeal only to new and undeveloped powers of nerve and muscle. A realizing sense of the true nature of the child, as revealed by observation and experience, suggests a postponement of written language-work and fine reading until a time when the finer eye muscles are properly developed and able to bear the work.

We pass now to consider that period in which there exists a marked difference between the two sexes. To this period we have assigned the name of adolescence. Prior to this time there was no radical difference between the relative abilities of the boy and girl. Now, however, the girl develops faster than the boy, and therefore possesses less mental acuity. Later on, the boy forges ahead, physically, and for several years his intellectual faculties lag. These differences

make it difficult properly to arrange a course of study.

The physical changes of this period are familiar to all. The heart enlarges, and the arteries increase one-third. This large increase of the circulation seems even greater than is necessary to supply the extra nutrition for the rapidly growing bodily organs, and, as a result, there is a superabundance of energy which must have an outlet. The finding out of this outlet should be the particular care of the teacher, because, if left undirected, the outlet chosen is wholly the result of chance.

That this is an awkward age is well known. An adolescent will fall over a chair rather than walk around it. The growth of the muscles and nerves is faster than their organization, and this, coupled with the unsettled condition of the brain and muscles, produces a lack of coordination and thereby a want of self-control. Self-consciousness, blushing, and a desire to show off, are present as distinct adolescent phenomena. Laboring under the spell of mental storm and stress, the youth possesses an intense longing to do battle for himself, and craves to reap a harvest without having sown. Old interests die and new ones are born. He runs away from home, so great is his desire to see the world for

himself. Crime increases during this period, and most religious conversions occur.

"The hope of truth grows stronger day by day;
I hear the soul of Man around me waking.
Like a great sea, its frozen fetters breaking,
And flinging up to Heaven its sunlit spray.

And every hour new signs of promise tell
That the great soul shall once again be free,
For high, and yet more high, the murmurs swell
Of inward strife for strife and liberty."

—Lowell, *Sub Pondere Crescit.*

The grand pedagogical aim should be to utilize the tempestuous emotions of adolescence. The teacher should balance undue ambition by serious study. Adolescents require activity. There must be an outlet somewhere. The aim should always be to drift the energy off into healthful channels. Otherwise the same will be lost, or worse than lost. In some instances activity is the surest safeguard against suicide. In every case, if rightly employed, it is a saving of energy. It is a mistake to demand too much work now while the physical organs are developing. It is well to be sympathetic rather than swift in punishment. Every high-school teacher knows that any course which is not based on sympathy usually falls short of the mark.

Every youth passes through these stages. If they are normal types, the period of adolescence will come from 14 to 25 in the case of boys, and from 12 to 21 in the case of girls. Should the vitality be sapped by overwork or otherwise, the stage may be retarded several years, but come it surely will if the individual lives.

A study of the psychology of childhood is an indispensable part of the preparation of every teacher in the lower grades, and a study of adolescence should form a part of the education of every teacher in the higher institutions. The subject should be studied scientifically from the standpoint of physiology and psychology. From what has been said of childhood and adolescence it ought to be obvious that before we can train the mind we must understand the psychology of the age which we are dealing with. Epochs count for much in education.

Psychology teaches us to ascertain the moods of our pupils by a study of their bodies. The teacher who does this will find his vocation more congenial, the results of his labors brighter, and his pupils happier. A well developed chest indicates a mind unconscious of wrong doing, but once a sense of shame is felt, the chest falls, and a victory is gained for easy control. Fortunate, in truth and in fact, is that teacher

who understands the body as the book of the soul!

The teacher who is familiar with psychology is a better teacher, other things being equal, than one who knows nothing about it. There probably never was a successful teacher who did not have a knowledge of the working principles of psychology and who did not apply those principles in his teaching, no matter how crude that knowledge was, nor how crude the steps by which it was secured.

Every teacher should study the minds of the children under his direction; should understand the close relations which exist between mental and physical growth; should observe the mental and physical traits as manifested in the stage with which he deals. The teacher who does this will not make the blunder of giving mathematics in abstract form to a mere child; will not expect the reasoning powers to be developed at six, seven, eight, or nine; but will appeal to the powers of imagination and memory which are then on top, by giving history, mythology, and stories of fable. The teacher who appreciates with some degree of intelligence the psychology of children, will not punish a child for being a child; he will not look with dread and alarm upon traits which are purely reversionary; for

the student of psychology well knows that these traits will be outgrown normally and naturally when the time is ripe; knows that the child will learn to walk when the brain centers controlling the apparatus of locomotion are ready, and not before; knows that the child will talk when the lingual muscles and nerves are ready, and not before; knows that the boy or girl will begin to reason and think when the fibers of the brain and the modulation of the nerves are sufficiently established, and not before. When these various seasons arrive, and not before, is the proper time to exercise the child in the activities which are normal to those times. The teacher or parent who can relegate instruction and discipline to their proper epochs in the life of the child has the power, almost, of creation.

Psychology is, then, in brief, a beacon-light illuminating the vast sea of pedagogy, disclosing the rocks and shoals, and making clear the course to be pursued. It is within the bounds of sense to say that it is the greatest study ever instituted and destined to realize the grandest possibilities. It is to-day almost universally regarded as of the utmost importance in the preparation of the teacher, in arranging courses of study, in determining methods of instruction, and in deciding questions of discipline.

How Best to Develop Character in Children

BY MRS. EMILY S. LOUD

HOW BEST TO DEVELOP CHARACTER IN CHILDREN

CHARACTER is that quality of moral force inherent in an individual, which leads to a line of conduct conformable to that quality. Character is a positive, not a negative, virtue, and is developed through daily habits of self-discipline and high thinking, consciously and unconsciously practised from childhood. The man of character moves among his fellow men surrounded by an atmosphere of moral influence, of decided, but unobtrusive force, unless the occasion demands it, which makes itself felt wherever his duty may call him. It is to such men and women that individuals and communities instinctively turn in times of stress, and it is such men and women that we would like our children to become. How shall we set about the work of making them such?

There is much sentimental talk about the teacher having the child while its mind is as yet plastic, and that she can therefore mold her pupils as she pleases. It is on account of this often expressed sentiment, and a general expectation that schools should do even more

than churches to better the morals of the people, that so much dissatisfaction is now being manifested, even by noted university professors, at the seeming failure of the public schools as a moralizing force in the education of many of our prominent men.

But the causes of the lack of public morality lie deeper than in our system of public-school teaching. I venture the assertion that there is no public school in our land where the teachers have not time and again, as opportunity presented itself, urged the claims of moral obligations upon the pupils under their charge. That there has not been more time spent in the schools in this work is owing to the constant pressure upon both teachers and pupils to "get on" in the purely intellectual and commercial branches that crowd our courses of study, and which mark the educational standing of the teacher and her class.

It is expecting superhuman wisdom of children to surround them outside of their schools with an atmosphere of frenzied greed for commercial gain, no matter how obtained, graft, public and private breaches of trust, and immorality, and then expect to make of them the men and women you wish by saying to them, "Do none of these things that our men promi-

nent in political and commercial life are doing, but be honest, trustworthy, clean, and moral."

The teacher's opportunity lies in the fact that during the formative period of a child's character she is brought into closer relations with the child than are these outside influences. She must lay her foundations before he fully understands and takes to himself the evils that surround him.

To do this, the teacher must herself continually seek moral growth, and walk strictly and honestly in the path she wishes her pupils to walk. The children must see "how righteousness looks when it is lived." No teacher unwilling to do this should take upon herself the sacred task of guiding the young. Then she should so train her pupils that they may know right from wrong, and thus know how to choose the right.

Every teacher is presumably able to impart the technical knowledge of her profession. Her chief obligation then is to see that while doing this, under all and above all, she is inculcating those basic principles of right action that we call *character*. If from the outset she purposes this, each lesson, in whatever branch, will be one of a chain of links teaching obedience, self-control, thoroughness, and truthfulness. Many

times daily the child performs these moral acts of obedience and self-control, and strict attention should be paid as to how they are performed. It is not so much what a child learns, as what he actually does, that forms character.

Every child should be taught accuracy even in his first lessons in number-making, spelling, and writing. It may seem an unnecessary strictness to oblige a child to be accurate in the small details of arranging his work orderly on paper or slate. But the teacher who allows slip-shod methods of work to pass through her hands, is aiding that child along a slip-shod path of morality. Accept nothing but the best work of a pupil, and you are establishing a stable character, which will not only give the child a grip on material things, but will give the child a strength of character in ethical matters as well. Teach the child that nothing is right that is not *exactly* right, and you are training him in a respectful observance of moral duties that will keep him from imbibing the atmosphere of careless indifference to moral obligations that has made these duties seem of so much less moment now, than they were believed formerly to be.

Deal strictly also with any disposition to cheat. When you know that this has been done,

quietly reject the work, take the child to one side, and tell him why his work was thrown out. Take no excuse for it, and train him to see that while failure is a mortification, cheating is to act a falsehood, and is also a theft. Never blame a child for failure in lessons when you know that he has done his best, but give him similar work to do by himself and then see where and why he failed. Children will soon learn that you will accept no dishonest or slipshod work, and they will gradually become so established in accuracy, honesty, and thoroughness in their work, that they will scorn lying, cheating, and carelessness wherever they see them. Constant daily drill is necessary to accomplish all this, and it means, on the teacher's part, a daily renewal of self-discipline. But it is our necessity as teachers.

As nearly as possible, train the children in individual responsibility. Do not allow them to lay the blame of their own misconduct on some other child. Kindly, but firmly, show them that the choice always remains with them to choose their own line of conduct, and that it leads to its own legitimate result. It is well to let them see this in its practical workings. In every class there will always be a few, who, altho hearing instructions as to the lessons to

be learned, waste time in idleness, waiting for the prodding that so often comes from the patient or impatient teacher. If they are spoken to often enough, the lesson is done; but the learning of it has not helped the child along the path of character-making, since it has been done under the stress of the teacher's eyes and words. It is sometimes a good plan to let the child take its own way for once, and then visit him with some penalty, that will teach him that what seems the path of least resistance, may end in a quagmire of discomfort and regret, with the added consciousness that it was his own choice.

Past history and the events of the day are full of proofs that our moral, mental, physical, and material belongings are largely the accumulation of our own acts, and we should try to impress upon children, early and late, that the way to avoid the mistakes of others is to lay in youth the sure and safe foundation of good habits. Read and tell children stories that will give an opportunity to get at their ideas by asking, "What would you do in such a case?" and thus train them in thoughtfulness and discrimination. Children need this training in thinking and deciding for themselves, that they may not be kept too long in moral leading-strings, but learn that as individuals

they are accountable and responsible for their own acts.

Physical culture or military drill in school, from the prompt obedience it exacts, is also an aid to development of character. Memorizing poems and speeches that contain lofty sentiments, also have their influence for good. To have a child concentrate most attention on the study he likes least, until he has conquered its difficulties, is another aid to character-building, for the strongest characters are born of a conflict and victory.

Finally, let us not forget that while Paul may plant and Apollos may water, God must give the increase. The spring from which we draw our drinking water may not always be in sight, yet if its source is pure, its health-giving waters will permeate our bodies, washing away all waste matter, and fill our systems with daily renewed life and strength. So, while we may not have the Bible in our schools, if we, as teachers, draw our daily inspiration from its precepts, the children of our land are safe in our hands. As they leave us to take their places in the government and business positions to which they may be called, we may rest assured that our loved country shall not become a prey to those evils that fall upon the nations that forget God.

How Best to Gain and Keep Control of Pupils

BY A. J. GROUT

HOW BEST TO GAIN AND KEEP CONTROL OF PUPILS

In order to gain and keep control in the school-room, the teacher must have certain characteristics, natural or acquired. One must have self-confidence without conceit, self-control without coldness or stiffness of manner, a sound and active intellect, with good judgment and a keen sense of justice, and an unselfish interest in the welfare of others.

These are greatly to be desired: A pleasing person and voice, good nature of a sort that is not easily imposed upon, a quick insight into character, and an affectionate and confidence-winning disposition.

No one, of course, completely fills the bill, but the above is a good ideal to keep in mind.

Women are more often deficient in confidence and self-control, and men are more likely to lack in unselfishness, and to have an unnecessary amount of conceit.

Methods must vary somewhat with the age of the pupils, as the author has learned in an experience of twenty years, covering all grades below the college.

Children in the kindergarten and in the early

primary grades are more often troublesome from spontaneous activity than from any conscious motive, and must be treated very differently from older and more self-conscious pupils.

With the smaller folk plenty of physical activity and short periods for other exercises are necessary. Then, if the teacher can present her work in a way to hold attention and interest, and is firm but kind in insisting on obedience, little difficulty will be experienced.

With the older pupils the opening day is most important. Begin with the assurance of success firmly fixed in your own mind, or in as near that state of mind as possible. One who enters the room timidly and deprecatingly is bound to have trouble, and that soon. Even if you can not help "shaking in your shoes," use all your powers of self-control to appear unconcerned and as familiar with first days as with your breakfast. Every eye is on you for the first few hours and days, to see of what stuff you are made, and just as soon as the shyness of novelty has worn off, if not sooner, some irresponsible person will "Do it just to see what teacher will do." If you hesitate then you are lost,—for the time at least. Do something yourself and do it quickly, so quickly as to take away the breath of the insurgent.

You need not necessarily be harsh, a little quick, sharp sarcasm that will make the school laugh with you at the offender, is one of the most potent weapons you can use. If you are not sharp enough or quick enough and the pupils laugh *at you* instead of *with you,* you lose.

However successful a proceeding of this sort may be, do not always do the same thing; an unexpected punishment, especially if it have the elements of poetic justice, is often more effective than a commonplace penalty that is much more severe.

If, as not infrequently happens, a boy has a bad cough that sounds unnatural and proves very disturbing, it is much more effective to send him to the principal or to his parent, with a note stating that he has such a bad cough that he can not be allowed in the class-room until it is better, than to punish him directly. Under such circumstances I have seen some remarkably quick cures of distressing pulmonary affections.

If a boy persists in standing up in his seat or moving about at times when he should remain seated, I find that an hour or two of continuous standing is very effective. One who has stood through a performance at the theater knows something of the probable feelings of the youth. Of course he must be so placed and controlled

as not to be able to amuse himself at the teacher's expense and to the disturbance of the rest of the room.

In the hands of a weak teacher such punishments are almost sure to degenerate into a farce, to the great entertainment of the pupils, and the utter discomfiture of the teacher, but a teacher of this sort is pretty sure to make a mess of any kind of discipline. Because this kind of punishment may be abused is hardly a good reason why it should not be used.

I find boys more often need sharp, short checks than girls, as girls are naturally more tractable than boys. But a boy rarely bears ill-will toward a teacher for giving him his just deserts, while a girl's sense of justice is much less keen, and she may bear a long grudge for a punishment that was eminently fair and just. A great deal of care can be used to advantage in punishing girls, as they are very sensitive to ridicule, and a reprimand that will only make a boy grin sheepishly, will often move a girl to tears and a long period of sulks.

After one has won the first few trials of strength, things will settle down to a comfortable calm, broken occasionally by sporadic outbreaks that will occur, even under the best management. These should not cause the teacher

any anxiety, as they are almost necessary incidents of school life. A school composed of dullards and ninnys might never make any trouble; but a school of live, active youngsters is sure to explode now and then.

Make just as few rules as possible, and do not lay down exact penalties for offenses; if you do, you will find yourself in very disagreeable situations that might easily have been avoided. State that the penalty is likely to be enforced, if you like, but always reserve the right to use your own discretion.

State all but the most vital rules as requests or as requirements of ordinary good behavior, but when offenses against these requests or suggestions occur, do not argue or threaten what you will do next time, but inflict at once a just and adequate penalty. If you can be depended upon to say, "I will do thus and so if you do it again," the alert youth is pretty sure to yield to the temptation to "do it just once," feeling secure from danger the first time.

Avoid as you would the Evil One himself any appearance of personal vengeance, or even of purely retributive punishment. Strive in every way to show that your punishments are to prevent future offenses, not to "pay up" for past misdeeds.

Perhaps the two most vital requirements for success in school discipline are self-control and justness. These qualities will win respect and admiration for the strictest disciplinarian, while the good-natured "easy" teacher has neither.

If you can not control yourself, you can not satisfactorily control others. I have often seen teachers so easily aroused to a passion, which vented itself chiefly in angry abuse and threats, that their pupils would purposely stir them for the purpose of enjoying the degrading diversion furnished.

By sheer force of mind and tongue, or as a last resort, by physical force, one may keep order, but keeping order is no more controlling one's pupils than sitting on the safety valve is putting out the fire under the boilers. You do not control until you control mind as well as body. Here lies the danger of corporal punishment. It is often used to compel order and deludes the teacher into a belief that he has control when he has only the outward obedience due to fear.

Although quickness is almost imperative at times, it does not necessitate even the appearance of anger. Let the offense be treated as entirely impersonal and a detriment to the welfare of all. If matters are to be discussed as personal, let

them be discussed in a friendly way with the pupil alone.

Pupils are so different that the same offense by two different pupils must be treated in very different ways. Circumstances also alter cases very materially. It is often difficult to treat a case individually in this manner without laying yourself open to the charge of "partiality," but if you *attempt* in good faith to be absolutely just, while you may be misunderstood at first, unless you are woefully lacking in judgment, your intentions will, in the long run, receive as near their true estimate as anything human ever gets. For these keen-eyed youngsters of ours are as fair-minded as the goddess herself. If a pupil has the appearance of a genuine feeling of injustice, go far out of your way to explain the case until you are certain that your efforts are wasted. After your explanation, insist that all outward remonstrance be stopped at once.

We are all fallible and prone to make mistakes. When you find yourself mistaken, acknowledge it at once, fully and frankly. If your mistake has been of a personal nature, apologize and make as full reparation as possible. If this is done in a frank, manly way, you will always gain and never lose, unless you are a hopeless blunderer and unfit for the school-room.

You may have almost perfect outward control and the entire respect of your pupils with little or no affection toward you. Affection you can not have in any considerable degree unless you, yourself, have an affection for the untrained and chaotic, often rebellious, but essentially open and plastic natures, that look out at you from the windows of those unlined faces that greet you every morning.

Love is the greatest thing in the world in the school-room or out, and he who gives and gains has the key to the control of young minds and hearts, and he has it not for the hour or for the day, but for all time—and perhaps beyond.

How to Teach Children to Think

BY AGNES C. RALPH

HOW TO TEACH CHILDREN TO THINK

THERE are many phases of complaint on the lips of teachers and parents that imply the desirability of the "thinking" process on the part of their charges.

"He can not *think out* a problem for himself."

"Her examinations are poor because she doesn't *think*."

"He doesn't mean to (commit this or that fault), but he doesn't *think*."

"My daughter never *thinks for herself*."

"In their nature-study they do not *think*."

There are different shades of meaning in these various accusations. In the first, reasoning processes as applied to arithmetic and algebra seem to be in the mind of the speaker. One trouble with many children who are set down in the category of non-thinkers, is, that either as a whole, or in its parts, they fail to visualize a problem. Another almost insurmountable difficulty is self-consciousness, which is often replaced by an overwhelming consciousness of environment. A method of doing away with the two latter troubles, and furnishing mental pic-

tures until the child learns their value, and forms the visualizing habit, is a sort of "play-hypnotism," as follows:

Let the room be quiet—so quiet there is nothing to distract you. Require the children to lay their heads on the desks, shut their eyes, and rest for an instant,—not for long, for fear of day-dreams. Without allowing them to awake from their play-sleep, picture to them in brief, vivid sentences, without repetition or unnecessary detail, the parts of the problem in their proper relations. Ask the vital questions, and after a moment call for volunteers. Not all, but more than before, will be ready with the answer.

An apparent failure to think often arises from failure to understand the premises. Questions on premises only reveal the error, and the young person is placed in a position to reason to the end.

Ordinary class-work seldom develops thinkers. It is possible, however, to handle a class as a collection of individuals, but no one of the collection must be allowed to "suggest" to the others. Ideas developed should be written down. After the matter at hand has been exhaustively presented, and time for thinking allowed, then the written conclusions may be read aloud. This

leads to a sort of game of conclusions wrought out in some such way as this:

"There is a certain conclusion which I wish each one of you to discover for herself from the directions I am going to give you. It is like a nut hidden in several shells, and I want you to take them off, one by one, to see what is inside. You will not know what I am driving at, at first, but watch!

1. You may divide x^8 by x and write problem and answer on your paper.

2. You may write the fraction $\frac{x^1}{x^4}$ and its quotient.

3. This time I want you to put down the process by which you obtain the quotient. Do nothing mentally that does not appear on your paper. Solve $\frac{x^{42}}{x^{27}}$

(I expect from this to obtain the form $x^{42}-x^{27}=x^{15}$.

4. In the same manner as (3), solve $\frac{x^3}{x^2}$

Is number four in exactly the same form as number three? Be sure of this.

Is your quotient x with an exponent?

Do not tell me what the quotient is, but at the left of $\frac{x^3}{x^2}$ in (4), write the sign of equal-

ity. Now place at the left of that, what you would most naturally write as the quotient of $\frac{x^3}{x^3}$.

Study what you have and write a conclusion as to the value of x^0.

Substitute various values for x in expression (4), and see if this value is always the same, no matter what x equals.

(*a*) a^0—?
(*b*) y^0—?
(*c*) 5^1—?
(*d*) 1^1—?

Read me what you have written under one, two, three, and four, together with your conclusion and the answers to (*a*), (*b*), (*c*) and (*d*).

The second complaint cited at the beginning of this writing will never be relieved until the child concerned has herself developed the critical faculty. Her written work must be performed under circumstances accompanied by no nervous strain, so that the excuse of being "rattled" need not be offered. If possible, make it so pleasant that she enjoys it. Then persuade her to criticise it thoroughly before giving it to you.

I returned a paper to a boy the other day with the remark, "There are five mistakes on it."

"I can't find any," he growled, knowing that statement and illustration were as he had learned them. I said nothing, and in a few moments he had brought back the paper with two plurals and two missing letters where they rightly belonged.

"I can find but four," he announced, a little more pleasantly.

"There are five," I answered.

"Oh, capital P!" and he dived at his paper with an actual smile.

The practice of discovering his own mistakes is invaluable to this sort of boy, since he passes as a poor student, merely because of heedlessness. I should advise the criticism of each other's papers as a regular exercise in all classes.

Thoughtlessness of the third sort occurs because the wounds of former experiences do not cut deeply enough into the memory. A natural impulsiveness can be curbed by the recollection of former disaster. I do not intend by this to advocate severity of punishment; quite the opposite, but *impressiveness* of punishment, to the extent of affecting the memory, and arousing the sensitiveness so that it may not be indifferent to scars.

The mind that does not plan for itself, provide for emergencies, and arrange its future, be

that future limited to the little to-morrow of a school-child, needs stimulation. The habit of forethought will come, like other habits, by repetition. The natural punishment is that the child should go without what it has failed to provide or plan for. But beware of cultivating indifference. Simply give your daughter certain responsibilities and praise her for forethought in connection with them until it becomes a pleasure and a habit.

The last complaint, like the first, is of failure to use reasoning powers. Children do not readily see the problems of nature-study. A disgusted boy frequently meets you with, "I don't see anything there to study," when you give him a leaf or flower. Rouse his interest, first of all; perhaps by telling him something wonderful about the cells and growth, that can be seen with a powerful microscope, and that he shall see by and by, when he studies botany in the high school; perhaps by giving him a strangely marked leaf with labyrinthine tracery on it, and leaving him to discover why it differs from those his fellows are patiently studying. Let him find the tiny worm under the epidermis, and then present him with the problem of how it came there and what its future is to be. When his real interest in nature is aroused he will be

more content to plod on through the drudgery of shapes, margins, bases, etc.

The solution of a number of nature's problems will suggest others, and the children working with you may (I am not too sanguine) acquire the habit of reading problems in the Old Nature-Book for themselves.

How Best to Teach Concentration

BY KATE WALTON

HOW BEST TO TEACH CONCENTRATION

THE writer wishes to state, by way of introduction, that the ideas here stated are the result of experience in many grades, and in many classes of schools—country schools of New York and Indiana, village schools in the latter state, city schools of Indiana, New Jersey and New York, and in varied private tutoring. Most of the regular teaching was in seventh and eighth grammar grades, but recent substitute work, in classes ranging from second year primary to high-school seniors, has been an excellent opportunity for the verification or modification of theories previously held.

As a result of this varied work she is becoming daily more convinced that the power of concentration, under any given conditions, depends much more on heredity and training than on the will of the pupil. While substituting one day here and the next there, she offered special inducements for concentration, and often found that the pupils most anxious to do as required were the least able. Let the untrained child realize his need as fully as may be, and use his full power, his success is usually very slight

compared with that of the one who has had systematic training in concentration. In a few cases, it has almost seemed that the habit of careful attention had become so nearly automatic with regular training, that wavering attention was as nearly impossible to those children, as steady application is to most.

After teaching, as stated above, chiefly in seventh and eighth grades, and comparing pupils of various schools and cities, the writer is more than ever impressed with the need of beginning this drill with the first hours the children spend in school, and never forgetting through the entire course its fundamental value in present work, and for future power.

Any one who has had any experience with little children knows their very limited power of attention to one object, even when aided by the presence of bright colors and varied sound or movement, and realizes the futility of expecting children just entering school to concentrate for more than one or two minutes on work requiring mental effort only. To give a small child a book and tell him to study or read, is worse than loss of effort, for it is a sure preparation for lost study hours in the future. When pupils of these lower grades are left to work alone, as they must in the crowded city

schools and in the poorly graded country ones, and as they ought sometimes to be for their own development in self-reliance, let the teacher see that the time is short, not over fifteen minutes at the most, and that the work assigned is really busy work, work employing hands as well as eyes and minds, work so varied and alive with interest to the pupils that the tendency will be toward, not away from, attention to it. And let the beginning of study, as the term is meant in higher grades, be under the direct supervision of the teacher, that she may change the work as soon as she sees the children begin to turn to other things.

Grade by grade, as the child advances, this power should increase, both in intensity and duration, and, in the writer's opinion, this increase should be, in the mind of both teacher and pupil, the chief basis for promotion.

Altho the definite plans to be mentioned were used in upper grades chiefly, the writer believes that the principles apply, whatever may be the age of the pupils. It is assumed that each teacher has two divisions, which in some subjects recite separately, one studying while the other recites.

Let us first think of concentration during the recitation period. The first requisite is the ap-

preciation by both teacher and pupil of its value, for tho it is not the strongest factor in ability to concentrate, the voluntary action of the pupil toward that end is by no means an unimportant one. This voluntary co-operation of the pupils may usually be secured by talks with, not to, the class, with illustrations of the value of this power of concentration, given by them from various occupations. Later, individual talks may be needed with special pupils.

Above all, let the teacher constantly show her appreciation of its value, by her methods of work and discipline. With weak grades, in particular, as far as possible eliminate disturbing elements, such as interesting objects on the desks, movement by other pupils, visits from pupils and teachers of other rooms, visitors who come to see the teacher, the outside street noises, and numerous other hindrances known to every teacher. But if these must exist, try to help the pupils to concentrate their thoughts on the work despite them, and to look on the unavoidable interruptions as so many opportunities to acquire the power to turn again to work as if not interrupted, or to ignore entirely outside things. Once, when working in an unfinished building, amidst the din of hammers on iron stairways, the shouts of the workmen, the test-

ing of electric bells, and the talk of men putting radiators into the room, the teacher was surprised and impressed by the powers the sixth-year pupils showed of working steadily, even when directions had to be given from the blackboard, as the teacher's voice could not be heard above the uproar. Make the pupils feel that, for future life value, the passing of this test is of more value than 100 per cent. in arithmetic, geography, or spelling.

Be careful that the work is varied, alive, and interesting to your pupils, to assist them to attend steadily, but do not forget that, aside from the end in view, some of life's work is drudgery, and give your pupils a chance to become accustomed to work carefully and steadily on work in itself not interesting, as the drudgery of long computations in mathematics, or of learning new words in foreign languages. Make them feel that here is an especially fine chance to acquire the habit of attention, and in particular on the one or two subjects each child finds of little interest to him—his hard subjects. They cease to be hard when the boy or girl looks on them as the tools by which he may manufacture a wished-for power.

The teacher should not, except in extreme cases, interrupt the sequence of her work by re-

bukes to pupils reciting, or studying in another division. The loss of time to the one boy or girl idling is less serious than the loss to an entire class. Neither should she allow the attention to be drawn to side issues by some chance suggestion of a pupil.

Be sure that each pupil recites distinctly enough to be heard with ease by every other, and hold each child responsible for a knowledge of all that has been said. Keep your own words distinct, but as low as conditions allow, and don't, ordinarily, repeat. Remember we can not expect pupils to attend to what they can not hear, nor to what will probably be immediately repeated.

Substituting one day with a fourth-year class, the writer was surprised at the conditions during the study period, when two rows of pupils were very busy and others very idle. The answer to the problem was received, when at the beginning of the recitation, the teacher was informed that it was the turn of a certain row, (one of the studious ones), to recite first in geography that day. She then remembered that among the directions left her by the regular teacher were notices of whose turn it was to pass first to the board that day, and whose to recite first in the various classes. A few minutes'

work with a reading class in that room, when but one pupil apparently heard the teacher's directions, and that one the pupil whose turn it was next, were to her convincing evidences of the evil results of the "turn" method extensively used. There are, as every teacher knows, occasions when it is valuable, but it is certainly destructive to concentration, if habitually used.

When a class is not able to concentrate well, great care must be taken so to carry on the recitation that the pupils are steadily helped toward it. If the work be such as makes it possible, frequent answers written to hold the attention to what has gone before, and to call back wandering minds, will help. Often in mental arithmetic or in English, it saves time in the end, to have each pupil write each answer, call on one pupil to recite, have all compare, and report by standing, uplifted hand, or in response to his name. You are then sure that each pupil has done all the work, and no time has been allowed for inattention. This should be unnecessary in a trained class. A regular or frequent collection and survey of these papers by the teacher is often a great incentive to careful, attentive work. Don't let your pupils acquire the habit of inattention. If in helping one pupil, who is backward, the return to them and help the backward one privately.

In oral work, a glance into the eyes of each pupil as he completes his work, enables the teacher to be sure that no one is shirking, and it can be given so quickly that no time will be lost, if the pupils are accustomed to look up to her as the answer is obtained. The conditions during the study hour are very important, for it is difficult even for trained pupils to stndy while an interesting lesson is going on in the room. Try so to arrange your program that when the geography, history, or literature are being recited, the pupils studying have some hand work, as written arithmetic or English, on which it is much easier to concentrate than on mental work only. Then, too, have the pupils feel that this study time is the especial hour in which to gain power of concentration, and lead them to make an especial effort toward uninterrupted study.

The writer once used special drill in concentration for an unusually weak class with very encouraging results. The class was a 2B in a great eastern city, in an institution where destitute children and young law breakers were sent by the courts, and where the discipline was rigid. The class consisted of about fifty boys from six to fourteen years old, many of whom were unable to read the first pages in a primer. They seemed to have no power of attention to

work. Before a word written on the blackboard could be pronounced, and its meaning given by the pupils, half of the class were thinking of something outside. Before a simple one-step problem could be solved, half had forgotten its conditions. In reading, not the most fascinating story or fairy tale could long hold their attention.

Devices were used to hold eyes and thus thoughts; directions were spelled phonetically to catch recreant ears, and special attention drills were given at each pause in the work, for marching, roll call, and the other possible times. The decisive call "attention" was followed by "one" when the feet came into a certain specified position at once. "Two" was the signal for a certain position of body and arms, and at "three" the teacher expected to see directly into each boy's eyes as she glanced toward him. This position was required during any work calling her attention from the class, as attention to monitors, roll call, or writing on the blackboard, and was rigidly enforced. The time spent with the class was only five weeks, but the results in increase of power of concentration were encouraging enough to lead the teacher to decide to try the same plan again when she had a weak class. At the end of the time not one word

but two, three, and often four could be discussed without their minds wandering; two or three problems could be solved, and once or twice an entire lesson was read with the attention of all but one or two pupils steadily upon it.

To repeat the statement made at the start—the will of the pupils is a great help to concentration, but it can not take the place of systematic training, of a fixed habit of holding the mind steadily to one thing.

How to Develop the Conversational Powers of Pupils

BY FLORA ELMER

HOW TO DEVELOP THE CONVERSATIONAL POWERS OF PUPILS

In order to be a good speaker, one must primarily be brimful of thoughts that he wishes to express. Yet he may be well stocked with excellent ideas and not have the vocabulary or fluency of speech to enable him to make his conversation attractive and interesting.

Children, from American homes, if not of a timid nature, have considerable ability in the line of conversation when they enter school. Most of the pupils in our large cities are of foreign parentage, however, and work in language must necessarily proceed very slowly.

Quite recently I saw a bright young teacher tell a long story to an infant class. She related her story charmingly, holding the little ones spellbound. But, alas! when she called for repetitions, or rather reproductions, none were forthcoming. I could not have repeated the story as interestingly as she did myself, and the little cherubs about us, no doubt, realized their lack in the power of expression. Finally, after much coaxing, one fair-haired maiden volunteered to reproduce the story, and succeeded ad-

miringly. "That is the way," said the teacher, turning to me. "Ada, or John, and possibly Harold, will tell a story for me, but I can't get the rest to talk. They won't even try."

I have gone through the same discouragement, always hoping that by and by more would attempt to imitate Ada and John. This does happen sometimes, but experience has taught me that all must have something to say in the language lesson. The work must be planned to benefit the majority. "From the simple to the complex," this is the most vital principle of all pedagogy. Therefore, proceed slowly, step by step. Begin a lesson thus:

To-day, children, I want each one of you to tell me something about your baby at home, something interesting, something that I would like to know and you want to tell. Quickly will come responses:

Clara: "Our baby can walk."

Bella: "Our baby can laugh."

Hans: "Our baby has blue eyes."

Carl: "Our baby has got two legs." Again *Carl:* "Our baby has two legs."

Gretchen: "Our baby sleeps all the time."

Every child will respond, if only to say: "We have no baby at our home." On the following days talk about papa, mamma, teacher, school,

home, etc. Every child begins his sentence with "Our house," which soon becomes monotonous, so I suggest: "Let me see how many of you can tell me something about your home and not begin with "'Our house.'" Now come sentences like:

The roof of our house is made of shingles.

The street car passes our house.

We live in a two-story house.

Before taking the regular reading lesson, we always read the picture. It tells us so much if we but stop to look.

Picture stories furnish excellent opportunities. Give the boy in the picture a name. Also name the dog. Now let John tell a story about the child and dog. Irma may then give her version of the same. This brings the imagination into play, tests the child's handling of words, but makes no tax on his memory.

During these early lessons I would entertain the children with stories, but as yet I would require no reproductions. They will come in due time, but will be very, very short for many weeks. In order to be able to reproduce a story, the pupils must have no difficulty in grasping the thought, and the incidents in the narrative must be of such a nature, that one step suggests the following.

Do not correct mistakes in these first steps. Lead the child to speak up lively and do not hamper him in any way. Later begin by calling attention to just *one* mistake. If *one* mistake is pointed out, it will probably make some impression on him, if two or three are corrected, the pupil becomes disgusted and will pay no attention to any.

After considerable facility in reading has been attained, pupils should reproduce many paragraphs that they read silently. Sometimes let the paragraph be read orally, but as many synonyms inserted as possible. Sometimes change the noun from singular to plural—verbs and pronouns correspondingly. Again change the name "Frank" to "Ella," then changing the gender of all pronouns.

Do not interfere with a narrative because some minor detail has been omitted; be content if the general thread of the story is continuous.

By the time the children have reached the fifth grade, expect a great deal of topical work in geography and grammar. It will be exceedingly difficult at the outset, but step by step you will eventually succeed. It has been my experience when teaching a fifth grade geography, that the first attempts at description were more than disastrous.

CONVERSATIONAL POWERS

After we have finished our study of the Amazon river, I expect a child to tell a great deal about it. Perhaps the first pupil called upon may rise and say: "The Amazon river rises in the Andes, flows east, and empties into the Atlantic ocean." Then he may hesitate, look about and expect me to ask some ten or twelve questions before I can pump everything out of him that he knows about the Amazon. Which latter action we are prone to call leading out a child. This is very good at times, but is much overdone by inexperienced teachers. The time comes when every child must be able to stand on his own feet and tell what he knows. I often make this remark: "Who can talk for five minutes on the 'Amazon river?'" Perhaps the first effort will give me a one minute recitation, and the next two, which will generally satisfy me. It isn't, you will understand, the time he speaks, but the fact that he has learned to tell what is in his mind—unburdened his soul—and poured out all he knows on the subject under consideration. At all times insist on complete sentences, whether the lesson be language, writing, arithmetic, or singing. Thus language is correlated with the other subjects in the curriculum.

In grammar, after the subject of nouns has

been taught, I expect a child to begin a recitation on nouns thus:

"A noun is a name, as: boy, John, desk, river, book. All nouns are divided into two classes: common and proper. A common noun is a name given to a class of objects, as: book, chair, boy, dog, table. A proper noun is a special name given to a person, place, or thing, as: John, Clara, Missouri river, Wisconsin, Christianity. Every proper noun must begin with a capital letter. Nouns are also divided into the two classes called singular and plural. A singular noun—at this point I would call upon another pupil to continue.

After a little practise of this kind the children become independent and interesting speakers. They daily gain confidence in themselves. If found difficult at the beginning, do not grow discouraged; remember my first answer to the topic: "Surface of Mexico," generally brings this remark: "The surface of Mexico is rocky." It is not a simple matter to describe intelligently so large a portion of land.

When the children have a good vocabulary at their command, call attention to the fact that the repetition of the same word makes conversation monotonous. Show the children how to avoid using "said he" too frequently by saying:

"replied the lad," "was the father's remark," "said the boy thoughtfully," or the like. Forbid the use of "and then," "after that," etc.

Occasionally have an informal conversational chat with the children. "Who has something he would like to tell us?" This question will bring forth many spontaneous remarks that will help the teacher get close in touch with her little charges.

Our most fascinating speakers are not always those who cling rigidly to form. Grammar is the least necessary of the four essentials to good conversation. These four essentials are:

Thoughts, Words, Style, Grammar.

Let it be our aim in the language lesson, therefore, to implant ideas, arouse thoughts; these to be clothed in a vocabulary of choice words pleasingly uttered with an originality of style, simple, forceful, and irresistibly charming.

The Place of Biography in General Education

BY GEOFFREY F. MORGAN

THE PLACE OF BIOGRAPHY IN GENERAL EDUCATION

"Not only in the common speech of men, but in all art too—which is or should be the concentrated and conserved essence of what men can speak or show—Biography is almost the one thing needful."—*Carlyle.*

"Every person may learn something from the recorded life of another, . . . the records of the lives of good men are especially useful."—*Smiles.*

All children are hero worshipers at some period of their growth. They are all attracted by any man who can perform or has performed some deed of which they, themselves, are incapable. This is why the boy who can wiggle his ears or stand on his hands is always such a center of attraction. But since most of us desire our pupils' aims to be higher than this, we must supply them with more exalted examples of conduct.

"Teach by example rather than by precept" is an old adage, and a true one. Instead of preaching to children concerning their duty toward God and their neighbor, let them learn from biographies of great men what really constitutes greatness. Thus, by the example of those who have gone before, they may be themselves led "to strive, to seek, to find, but not to yield."

Since it is claimed that children reproduce in their own lives all the stages of development through which the human race has passed, it follows that they will have different interests at different ages. The age of barbarism, which is not long passed the kindergarten, delights in warfare; therefore the soldier's biography may first be introduced.

But let us not be misunderstood in this. The soldier's biography is not, as many seem to think, a record of battle, murder, and sudden death. The actual warfare need be little touched upon, for it is the character of the man, his patriotism and devotion to duty which are to be studied, and not his record of slaughter.

Eggleston realized this when he wrote his "Stories of Great Americans for Little Americans," a book which may be used with success in the third grade. It is to be regretted that the literary style is not better, for the abrupt, jerky sentences are a barrier to good reading, but as biographies of a simple and direct type, they are ideal. It will be noticed that in his stories of Putnam, Marion, Wayne, and similar fighting heroes, he has said little of the warfare, but has sought always to emphasize the bravery, nobility and patriotism of the men who fought for liberty.

But the interest in military heroes does not slacken for some time after passing the third grade. In later years Abbott's biographies will be of interest, particularly those of Alexander, Julius Cæsar, and Alfred the Great. It is scarcely necessary to call attention to the value of these books historically; in fact, all biography must be largely historical in its nature.

At about the fifth and sixth grades the constructive tendency begins to manifest itself. Now take up accounts of some of the inventors. Howe and his sewing machine, Whitney and the cotton gin, Morse, Bell, Fulton, Stevenson; all these will be of interest. Franklin is so composite a character that he belongs in many groups. His inventive faculties only need be studied at this time, as other characteristics may be developed later.

Lives of explorers such as Boone, Pike, Fremont, Stanley, Livingstone, and Cook should be studied in these grades also. Lead the children to see and appreciate the service these men wrought for mankind by blazing their way into unexplored countries. Livingstone's life is an especially valuable one, and Blakie's "Personal Life of Livingstone" should be in every library.

A pupil once said to the writer, "I like to read about poor boys who work their way up."

He voiced opinions of a good many children of the same age, no doubt. (He was thirteen.) Since this is true, we can do no better than introduce pupils of the upper grammar grades to two of our master minds, Franklin and Lincoln. The former's life is best studied from his own account, which is received with enthusiasm by both seventh and eighth grades, while Lincoln's career has been set forth in numberless books suited for almost every grade. The manner in which these two men toiled up from poverty is a powerful lesson for every boy who shall study it.

We prefer to leave to those grades extended study of these two men in order that their splendid statesmanship may be studied and appreciated. Of course these distinctions and divisions are by no means arbitrary. We do not contend that pupils should be told nothing of these men until they come to the seventh or eighth grades. On the contrary, they should be taught to know and love the names of our country's heroes from their earliest years, whether they be heroes of peace or war. But the gigantic skill with which Franklin and Lincoln helped to steer the ship of state through stormy seas can not be clearly explained to primary children, nor would the record interest them if it were told.

For this reason it is better to keep the full account for the older grades.

Nothing has been said so far of the biographies of authors. We are always rather sorry to see third grade pupils laboriously reproducing the biography of Longfellow, especially as they are usually called upon to repeat the performance in each succeeding grade. Lives of writers do not possess nearly so many features of interest as other types we have named, and had best be kept for more mature grades.

Since the place which any study obtains in the curriculum is determined by its value, it is well to consider the benefits which may be derived from a study of biography. Dr. Samuel Smiles, whose own life, by the way, may be studied with profit, says in his splendid book, "Character:"

"The great lesson of Biography is to show what man can be and do at his best. A noble life fairly put on record acts as an inspiration to others. It exhibits what life is capable of being made. It refreshes our spirit, encourages our hopes, gives us new strength and courage and faith—faith in others as well as ourselves. It stimulates our aspirations, rouses us to action, and incites us to become copartners with them in their work. To live with such men in their

biographies, and to be inspired by their example, is to live with the best of men and to mix in the best of company."

And Longfellow expressed the same thought when he said:

"Lives of great men all remind us
We can make our lives sublime,
And, departing, leave behind us
Foot-prints on the sands of time."

The Art of Story-Telling and Its Uses in the School-room

BY MIZPAH S. GREENE

THE ART OF STORY-TELLING AND ITS USES IN THE SCHOOL-ROOM

As soon as the average child is old enough to read, literature of various kinds is before him, and he has the pleasure and privilege of reading to his heart's content. If his reading is carefully selected and rightly directed, it will prove a most valuable means of personal benefit and education to him. But altho reading matter, adapted to the years and understanding of the particular child, is so abundant, and children have so many opportunities of reading for themselves, the useful art of story-telling must not be overlooked or neglected, for much may be gained from a story told in a bright, interesting manner, which could not be received in any other way. It makes the story seem more real and vital to the child, more a part of his own life. It comes to him through the medium of the living voice and is thus a living message to him. It is presented perhaps with numerous gestures and apt illustrations, which hold his attention and arouse his ever active imagination. It is accompanied by a pleasant smile, or a look and accent of sadness, delight, surprise, dismay,

fright or excitement, as the occasion may demand, which makes him feel, sympathize, and act with the characters the story portrays, and learn the lessons which they teach. I have known many a child, during my years of experience as a public school teacher, who has been led to noble, unselfish action through the influence of some story character. I remember one dear little fellow in particular who willingly and gladly gave his last cherished dime to pay his younger brother's street-car fare to a school picnic, because he was anxious to be like "Brave Tom" in the bright, cheery little story I had told the children only the day before. Another child in the same room gave up the use of cigarettes because some story character was too manly to use them.

A story fascinates a child when it portrays for him the wonderful and the strange, the miraculous and the dramatic, for which he has a natural love, since they appeal to his imagination. The mind of a child is filled with strange fancies and images; they are a part of himself and often prove an inspiration to him. It is the duty and privilege of the wise teacher to direct many of these fancies into the right channels and make them a source of benefit to the child mind. She can often find no better way

than through the medium of a good story. A child's knowledge and experience are very limited. A helpful story, appropriate to his years and understanding, told in an entertaining manner, and in language which he can understand, will provide for him new thoughts and experiences to treasure up in his active little mind, and use in the days to come.

The child mind has a tendency to create ideals, and the story may furnish the right kind of material to develop this tendency, bringing the imagination again into play and turning the thoughts into new and pleasing channels. The ideal may not be the one in the mind of the story-teller, but it is none the less valuable to him, and tends to make his life fuller and richer.

A story to be interesting to children must be true to life. The characters the child finds in real life must not be lacking in the story. He wants something more than the child-life in his story to make it appeal to his idea of life, as he finds it. He has a tender, loving father and mother; his story-child must be helped and blessed in the same way. Perhaps he listens to his favorite stories at his grandma's knee; must there not be a dear old grandma in the life of his story friends? A dear little boy has lost

the father he loved with all the strength of his young heart. As he climbs on his mother's knee for his evening story, he asks pleadingly, "Mamma, mamma! tell me about the poor little boy, in the long, long time ago, who didn't have any papa." The little lad in the story had many wonderful experiences, which could never come to him, but they had one common link which made the story-boy very dear to the real boy.

I once asked a large class of primary children to tell me a story about a picture of two little girls that I held up before them. A thoughtful little maiden said anxiously, "But, teacher, where are the papa and mamma?" The picture just as it was contained no story for her.

One reason why the story arouses so much interest in the mind of a child is because it presents events to him in wholes. Thus, he is not satisfied with parts of stories; the beginning, the middle, or the end alone, but he insists upon hearing the complete story. A usually attentive little girl showed her evident discontent and lack of interest, while her Sabbath-school teacher was telling, in an interesting manner, the story of David and Goliath. The child's dissatisfaction was so plainly shown that at length the teacher asked a little impatiently, "What is the matter, Anna? Don't you like to hear all about

brave David and how he conquered the terrible giant?" "You didn't tell us about David as a little boy, and how he grew to be so strong and brave," was the child's reply, followed by a shower of tears.

Another reason why stories are so attractive to the child, is because they often take him far back to the happenings of the past. Children are always interested in hearing about things that took place "a long, long time ago," or "In the long ago time," and his favorite beginning for a story is, "Once upon a time."

A good story leads from the known to the related unknown. The child always delights in matching what he already knows with the new ideas and experiences that the story brings to him. With each helpful and entertaining story to which he listens, his knowledge is increased, and therefore his mind is broadened and enriched. The story develops the mind naturally and normally. The knowledge and helpful influence are not forced upon him, but gradually, day by day, become a part of himself. The story may remain with him for days and weeks, and even years, until, unconsciously, and without effort he has imbibed the truths and lessons the story aims to impart to him. From the story characters who are brave and honest and true,

the same traits may enter into the mind and life of the child.

Children like to hear a story which strongly appeals to them, told over and over again, and each time it seems to mean more to them than ever before. The brave boy seems braver, the giant stronger, the deed more wonderful, each time the story is repeated. A wise teacher will rarely refuse to repeat a good story when the children request it, for in addition to the pleasure she is thus giving them, she may be impressing upon them by this repetition lessons which will influence for good their after lives. The real end and aim of all story-telling should indeed be character-building, and stories which tend to this result can not be too often repeated, as long as they appeal to the child's interest.

A good story for children must have plenty of action and progressive movement. Children like to have things happen and "happen quick." They want their story characters to be in motion; to be accomplishing something. They are not interested in long-drawn-out tales, with long, complicated sentences, and prosy descriptions; but bright, spicy, animated stories, full of spontaneous life and action, with a great predominance of narrative over the descriptive.

No story should be presented even to children,

and perhaps I should say, least of all to children, unless it has a well defined and carefully worked out plot or plan, leading naturally and easily from one incident to another; gradually unfolding itself step by step, until at last its winding up shall be the probable consequence of all that has gone before.

The language and material of the story should be characterized by perfect purity of thought and expression, and through all and in all, a true Christian spirit. It should form a point of contact with the child's life, guiding his thoughts naturally, until he is able to grasp the great truths and problems of life. With such a story one may hope not only to interest and instruct the child, but to make him a worthy representative of the race in every respect.

Finally I would impress upon all parents and teachers the inestimable importance of the art of story-telling, not only in the school-room but in the home and in all the haunts of childhood. I would urge upon all who are instrumental in the training of children, to make every possible effort to make their choice of stories and method of story-telling ideal; realizing that the real purpose of the story is not merely to give the children pleasure, altho that is of importance, but to become an essential factor in mind-training and character-building.

Nature Studies—The Various Methods of Teaching Nature

BY CAROLINE C. LEIGHTON

NATURE STUDIES—THE VARIOUS METHODS OF TEACHING NATURE

My first experience in attempting to interest children in the study of nature was to send them into the school garden, and the neighboring woods, to see how many different shapes of leaves they could collect. They returned with many-lobed oak leaves, finely-cleft silver maple, ribbon-like willow, broad plantain and heart-shaped lilac leaves. I asked if they noticed any other respect in which these leaves differed from each other besides in form, and they pointed out the serrated edges of the rose leaves and the smooth ones of the lily, the glossy surface of the white birch leaves and the woolly mullein. We then turned the leaves over and saw the network of veins so conspicuous in the maple, and the few parallel ones in the corn blade and the plantain.

I next directed them to a deep cut on the railroad, where some granitic rocks were freshly exposed, and pointed out in the specimens they showed me the glistening scales of mica, the reddish crystals of feldspar, the transparent quartz and black specks of hornblende. It was fascinating to them to search for varieties of rock. A serpentine quarry in the neighborhood fur-

nished fine specimens, sometimes streaked with silvery asbestos, or sparkling with little specks of sulphuret of iron, "the fool's gold."

Some of the boys, who belonged to a manual training class, made a cabinet to contain the specimens. The girls, not to be outdone, collected money to buy a microscope.

Not far distant from us flowed a sluggish little brook, the home of the ogre-like larvæ of the dragon fly, water newts, caddis worms, bearing their curious stone houses on their backs, snails protruding their inquisitive-looking horns, whirligigs and skippers. Here was a good chance to study transformations, both of insect and reptile life. The pretty orange and black caddis flies, that live but a day or two, hovered over the water, and many varieties of gossamer-winged creatures that had passed their youth in the black ooze.

Occasionally we spent an hour dissecting an insect or plant, in pressing and preparing flowers for the herbarium, or in arranging insects in drawers lined with cork. We were never at a loss for material. If there was nothing else before us there was at least the gutter, where often some charming little weed could be found, the spurry sandwort, the starry chickweed, or scarlet pimpernel, the poor man's weather-glass,

as interesting in their structure as any of the more pretentious plants.

In the rambles which I took with them, the boys equipped themselves with geologists' hammers, the girls with butterfly nets. They became quite skilful in the use of the nets and in mounting the specimens. As I watched them at their work I thought they could not but observe what a vast deal of ingenuity had been lavished upon these ephemeral creatures, with their exquisite decorations, and I felt as if it must give them a new idea of a wonderfully painstaking and beauty-loving Creator.

Every season furnished us with something to study. In the winter, provided with pieces of black velvet, we caught the snow crystals, noticed their beautiful and varied forms, and were somewhat successful in drawing the simpler ones.

In the early spring we gathered buds from the trees, observed the tarpaulin coats, which guarded some of them from too much rain, and the downy coverings which shielded them from frosts, noticed how skilfully they were plaited and folded to pack them in smallest compass, watched the ferns uncoiling, and every little moss in the woods stretching itself, doffing its night-cap and casting off the swaddling clothes, which had protected it through the winter.

In autumn came the cocoon harvest, when all bushes and fences were searched for moth cradles, to be carefully preserved and watched through the winter. We examined the minute flowers of the grasses, the microscope sometimes resolving what was utterly insignificant and unnoticeable to the naked eye, into a perfect little lily, of such delicate form and color that it seemed as if it must have come out of fairyland.

Autumn was the time to inspect seed-vessels, especially with the help of the microscope, to see how prettily they were sometimes ornamented with dotted geometrical designs, and the varied forms of the caskets in which they were stored and in how many different ways seeds are scattered—fine hooks for grasping, little wings, as in the maple and ash, thistle-down and dandelion-silk floating on the breeze!

Our first year's work was quite desultory, but the second year we formed ourselves into a natural history society, with departments presided over by curators, and the children kept note-books, recording their observations. Once a month these notes were read in school, in place of the ordinary compositions, and were listened to with much interest, especially the queries, some of them suggested by the teacher, others by the pupil, I having found by experience the

truth of the old idea of Socrates, "Ask any one a question rather than state a fact to him, if you would arouse his interest."

A pine twig called out the question, "Why has the pine only needle-like leaves?" Can you think of any reason why these leaves should be better adapted to it than more expanded ones, of a softer texture? Why is its bark rough and shaggy? What is its native home, and how do these peculiarities adapt it to the situations most congenial to it? Which of our trees are naturally mountain trees? Why are the leaves that first appear on many plants close to the ground —the root-leaves—quite different from the later ones, higher up on the stem? See the rosettes of the evening primrose for an illustration.

You have often been cautioned in transplanting anything to be especially careful not to cut off the ends of the roots. Do you know why? It is because the root-tip selects the food of the plant from the soil. It is, as Darwin says, the brain of the plant. You may have noticed that the rootlets are sometimes very long and straggling. This is because they have had so far to travel in searching for proper food or water.

I have often wondered why the butterfly should die directly after depositing her eggs. Many humble mothers in the insect world are

very attentive to their young. The earwig sits upon her eggs, and eagerly watches her brood, the wolf-spider carries her innumerable progeny about on her body. I am afraid it would be altogether inconsistent with the butterfly's gay nature to be waiting upon little caterpillars.

Who originated the idea of the Zoological Garden? It may have been Solomon, for we are told that the ships that brought him every three years treasures from Tarshish of gold and silver and ivory, brought also apes and peacocks. We know that he was a close observer of nature from his remarks on many animals, being deeply impressed by the wisdom of the ant "which having no guide, overseer, or ruler, provideth her meat in summer and gathereth her food in the harvest. There be four things," he says, "which are little upon the earth, but they are exceedingly wise. The ants are a people not strong, yet they prepare their meat in the summer. The conies are but a feeble folk, yet make their houses in the rocks. The locusts have no king, yet they go forth all of them by bands. The spider taketh hold with her hands, and is in kings' palaces."

Sometimes by way of impressing them with the practical value of nature study I read items from the newspapers, or reports of the Agricul-

tural Experiment Stations for instance, with regard to the ravages of the insect pests, brown-tail and gypsy moth, and the parasites, the Tachina flies, just arriving from Japan, that are expected to destroy them in the larval state, by depositing their eggs upon them. The coddling moth, the chief enemy of the apple tree, will find in the seedless apple that science drives him to other modes of obtaining a livelihood. The seedless apple, being propagated only by cuttings, has but a small insignificant flower, without scent or color, with no attraction for insects.

Current events in the natural world were also noted, as the success of the Australian experiment of cultivating clover by importing long-tongued humble bees to fertilize the flowers. When clover was first introduced into Australia it grew luxuriantly, showing that the climate was adapted to it, but it was soon discovered that it did not seed and seemed likely to become a failure until it was observed that the bees never emerged from a blossom dusted over with pollen, as they should have done, and by examination it was found that their tongues were too short to penetrate the deep tubes of the flower. Since the long-tongued bees have been introduced, clover has become one of the richest crops of the country.

One day I asked if any of the class could draw, from memory, a butterfly resting on a twig. I asked this question in order to see how many of them had observed that the butterfly always holds its wings erect in resting. Some of them represented it with wide-spread, others with slanting wings; only one with the wings erect. I asked if they could think of any reason why the butterfly should take this attitude, and they noticed that only the under side of the wings showed and that this was often mottled, grey and brown, while the upper was brilliantly colored. The butterfly would attract much less notice, and escape its enemies in this way. This led to my speaking to them of other protective devices and colorings, as in the attitude which some caterpillars take when at rest, clinging to their support with the hind part of the body, and lifting and bending the forepart, in this position remaining immovable and hardly to be distinguished from a twig. The little leaf-hoppers, at rest, might readily pass for knobs or excrescences on the trees.

Hearing the shrill cry of a locust, some one asked, "How does it make that sharp sound?" I explained his little violin, the strings being made by the projecting veins of his wing-covers and the bow being his hind legs. The cricket

clashes cymbals together, made by his wing covers. The grasshopper has a little drum on his back. With insects only the males are musical. The females have no musical instruments, but carry working tools. Most of our simple tools were in use by insects long before they were known to us. The saw-fly is a carpenter, making holes in the leaves with a kind of combination tool, saw and file together. It is to be found in a deep chink under the hind part of her body. She makes little slits with it in the stems and leaves of plants, and drops her eggs into them. You may find her on an oak tree. Do not mistake her for a hornet, which she much resembles.

Do you remember the little puffy, woolly ball, looking like a tiny pincushion, white, dotted with crimson, we found once on an oak leaf, and I told you it was called "the pincushion gall." This growth on the leaf was caused by a saw-fly having pierced it to deposit her eggs, that the little grubs might feed on the sap.

The mud-wasp is a mason and plasters her clay cells against the wall. Each one has in it a single egg and a great many living spiders, so liberally does she provide fresh food for her incipient children. The stump-wasp puts into her nest hundreds of horse-flies.

The female wood-wasp has a borer in a scabbard. It is like an awl. With it she bores holes into the trunks of trees. Look for her on a pine or fir tree. She might be taken for a wild bee. The borer is like a pointed bristle. Sometimes she drives it with such force into a tree that she can not pull it out, but remains fastened to the tree.

I gave them brief accounts of some enthusiastic naturalists, hoping to awaken a desire to know more of them, as the blind Huber who, with the help of an assistant, made such wonderful discoveries about bees; the German botanist Eprengel, who, noticing the hairs on a wild geranium leaf, first asked, "Is any purpose answered by them?" that question leading finally to the knowledge that every stripe, spot and variation of structure has a meaning; Sir John Lubbock, whose knowledge of ants is so intimate that he confidently looks forward to the time when he will be able to communicate with them; Luther Burbank, the California wizard, who has evolved the fadeless flower, and whose latest achievement has been to convert the prickly pear of the desert into an edible plant, furnishing food suitable for man and beast.

My chief aim was to awaken in the children

the idea of looking about for themselves, with their eyes always open for anything interesting. Sometimes we happened upon a truly novel sight, as when we saw the larvæ of the golden tortoise beetles with their tails turned up over their backs on a hot day, as if to shield them from the sun. We could hardly believe our eyes, it was such a droll sight, so we sent a few specimens to a learned professor in an Agricultural college, asking his views of their curious structure. He answered, "I do not know that anything has been positively ascertained in regard to it, unless their tails are used as parasols!"

One day we opened the big green pod of the milkweed, and saw inside the semblance of a little silver fish, covered with brown scales, made by the combined seeds. We had seen the drooping clusters of the flowers, but never dreamed of what was going on later under the green covering, how every flower was depositing its scale, with the silken thread, exactly in the right place to help fashion this curious little image. It was a lesson in nature's orderly ways, not soon to be forgotten.

With regard to birds and little animals, I early seized upon the opportunity to instil into their minds the idea of its being much more

delightful to study them alive, in their own haunts, than in the old-fashioned way, to shoot and stuff them, and told them of the Oswego boy who calls the birds to come to him by imitating their notes.

On the whole, my experience in trying to interest children in the study of nature has been that it is far easier to teach them from living objects than from books, and of immeasurably greater value.

The Teaching of Phonetics

BY ZYLPHA EASTMAN

THE TEACHING OF PHONETICS

In teaching phonetics, we must have at least three objects in view, namely: to teach the sounds of the letters, that the children may become independent readers, to correct errors in speech, and to form the habit of articulating distinctly.

Many children, on first entering school, bring with them more or less "baby talk," which has clung to them partly because the mothers have been too busy or too thoughtless to correct them; partly because it is considered cunning, and partly because they are expected to "outgrow" it when they start to school. Many children have similar sounds, such as *ĕ, ĭ, ă,* interchanged sometimes on account of not being able to distinguish between the sounds; sometimes on account of parents having a careless habit of speech, and slurring sounds or cutting them short. Many children of foreign parentage miscall words in everyday use. A greater number than we might at first thought suppose, mispronounce on account of illformed teeth, lips, and mouth.

Since it is the duty of the teacher to correct

these errors, she should carefully note the errors of each child's speech, ascertaining as nearly as possible the cause of incorrect pronunciation in each case. Perhaps I can give a better idea of what I mean by mentioning a few examples that have come under my observation. A certain boy who had been in mischief all the morning tickled his little seatmate in the side, and made him laugh in school. The teacher sent him upstairs, where he reported that "Mitt Willit tent him up tairs for tittling a boy in the tide." This child, like many others, had great trouble making the sound of "s,"—why, I have never been able to tell. By having the child watch carefully while he made the sound, and by showing him how to place teeth and tongue, this child was taught to pronounce words having the letter "s." Another example was of a child who gave the sound of "w" in place of "s,"—the only case of the kind I have ever known. He called his playmate Sam, "Wam" and, being sent to the store for a sack of salt, asked for a "wack of walt." This child had shed his upper front teeth and, perhaps, for that reason he got no nearer the correct pronunciation than "thack of thalt." A little girl wrote on the board such sentences as "This is the book *at* I had." "Mamma said *it* I could go." Both mis-

takes were the result of indistinct pronunciation on the part of the parents. Another child could not pronounce "s," hard c, hard g, long i, (calling even the pronoun I, *ā*, or *f*; in fact he made so many mistakes that he found it almost impossible to make himself understood. This child had a very peculiar mouth and teeth, making it very difficult for him to make them take the correct position for uttering the sounds.

It is not unusual to find in a primary grade of forty pupils, three, four, or even five, who need special work along this line. For this reason, if for no other, the phonetic work should be introduced as early as possible in the school-work—certainly during the first month of school. At this age the children are always ready for a game of some sort, and will readily try to imitate any sound given by the teacher. They are also wholly unconscious of what you are trying to do, and you may, without any fear of embarrassing the sensitive child, pick out pupils who are in need of special attention, giving them extra drill on their weak points.

Such work may be given very early, but the picking out of new words by sound should not be done too soon, as too much attention is then given to word-getting, drawing the mind away from thought-getting. Let the child learn to

read by the word method, or by a combination of the word and sentence methods, and gradually introduce the phonetic work in such a way that it will help, and not in any way be a hindrance to, him. This can be done if we do not get impatient for results. We must forever keep in mind that thought-getting, not word-getting, is what we want, and that the learning of the sounds is only an aid, not the object in view.

Let us now turn our attention to the methods of teaching phonetics. We see a great many little devices, most of which are good. We are quite familiar with the story of the child on the farm, who heard the geese say "th," "th," the cross dog say "r-r-r," the angry cat say "f-f," the hot iron say "s-s" when put in water, etc.; ă being the sound the baby makes; b, water pouring out of a jug; c, fish-bone in your throat; d, the dove sound; ĕ, the deaf man's question; h, the tired sound; l, sound heard near the telegraph pole; m, the cow's call; n, the calf's answer; p, the puffing of the engine; t, the ticking of the watch; w, the wind sound; z, the bee; ch, the baby sneezing; sh, the keep quiet sound; wh, blowing out the light.

The method which I have found most successful in my own work is as follows: After

the pupils are familiar with a good many words, and can read short sentences, write a number of familiar words—bat, ball, chair, baby; for example, ask some one to bring you the b-a-t, taking pains to give a natural pronunciation, the b-a-ll, etc. When the children can respond readily, turn to the board and write slowly the word "bat," pronouncing each letter as you make it. You will probably find the children pronouncing with you. After much drill on familiar words, let them note the number of sounds in each word. The pupils will, by this time, very readily see the connection between the letters and the sounds, and will have acquired the knowledge in an easy, natural way. I have found that using the above method for foundation work, with the story of the sounds, for varying the work and keeping up the interest brings good results. Many object to the use of diacritical marks in the first grade, but I have found marking the long and short sounds of the vowels a very great help, when given as we find need for them.

The Value of Word-Study and How to Direct it

BY E. S. GERHARD

THE VALUE OF WORD-STUDY AND HOW TO DIRECT IT

"Who is this that darkeneth counsel by words without knowledge?"—Job 38: 2.

Nothing seems more familiar and is so little understood; nothing is more interesting and is so little known; nothing seems so insignificant and is so powerful; nothing is used more lavishly and frequently with so little effect, as words. The American people have justly been accused of having little linguistic pride; there is a hasty unconcern in their speech; the haste is a national characteristic, while the unconcern arises from a feeling of lazy indifference and a lack of ambition and of worthy ideals. People in general give too little heed to a proper use of words. It is painful to hear how some of the common, pure, sturdy words are mutilated, like "dump" and "stupid," "party" and "person;" and people who misuse these words very likely commit the still more unpardonable sin of qualifying every statement they make with "nice," "awful," and "lovely," the three lonely adjectives in their meager vocabulary. Such a corruption of language arises either from innocent ignorance, lazy indifference, or affected knowledge. In either

case, a study of words might correct their ignorance, remove their indifference, and shame their affectation.

It is by means of language that we share the lives of other nations and profit by their example. It is through language that we enter into the inheritance of the past with its treasures of human knowledge, the discoveries of science and the achievements of art. Surely it is worth while to study the mechanism of such a vehicle of expression as language, and especially of such a composite language as the English, which has borrowed words from every quarter of the globe and has an unparralleled power of assimilation.

Language indicates the life and character of a people; it reflects their history and mental habit. The study of words will often reveal history not recorded by language itself. It will disclose secrets which would otherwise have been lost forever. That demand is creative, is a principle that holds true in language as well as in economics. The horseless carriage, which made its first appearance about fifteen years ago, seems to persist in retaining its questionable name of "automobile;" and with it have risen the still more questionable term "autoist" and "motorist." So the presence, or absence, of a certain

word in the historic languages of the Indo-European races is of valuable significance. These races surely had no words for things that they did not possess. When one finds that they have common words for the domestic animals, "dog," "ox," "horse," one may conclude that the object was familiar to all the races, provided it can be shown that they did not at a later period borrow such words from one another. The inference would then be, that these tribes must have left the hunting and fishing stages of their life and taken to grazing cattle before they migrated. What a world of history is wrapped up in the words "heathen," "pagan," and "matinee," and in many others. History may be distorted and falsified by words, but the history which lies latent in a word is not to be perverted. "Murder will out." One of the richest sources of historical knowledge is the study of words. Philology has done much to further the cause of history and of knowledge in general. It is very likely that some of the most perplexing problems in history, if they are to be solved at all, will be solved by a study of words.

One of the most interesting and amusing as well as the most profitable studies of words is etymology; it will give the student the history,

biography, and primary meaning of words. What a history many of them have. Take the word "cheap;" none is more common or used more frequently, yet very few people know the change the word has undergone in its meaning. Originally it meant a market place where things are bought and sold. It still retains this meaning in the word "chapman," a merchant. The original meaning is also retained in the proper names "Cheapside" and "Eastcheap," at one time the great market places of London, the history of whose trade is brought up at the mention of these names. "Pecuniary" and "fee" tell us of "ye olden time" when the tribes in the immense forests of Germany in their barter used cattle as a medium of exchange. And long after the sand in the arena has ceased to be stained with human blood from gladiatorial combats, and long after cordage has ceased to creak on vessels in the naval battles of the Romans, we are told that this or that man has distinguished himself in the arena of debate or on the rostrum. People are said to be capricious and scrupulous; that is, they are in certain respects like goats, and that they may have grains of sand in their shoes. Thus the penetrating study of etymology will finally bring us to the point where all language becomes figurative.

This study of the origin of words secures an accurate and enlarged vocabulary. Word-study increases one's vocabulary and with this increase there will be a growth of thought-power. The power of observation will become greater and that of expression freer. A small vocabulary indicates a narrow range of thought. No two things are more closely related than poverty of words and poverty of thought. The individual has just as many words as he has thoughts. A limited number of words at one's command indicates a narrow range of thought; it also hampers expression. If the same word is repeated continually the language becomes monotonous and wearisome. A vocabulary may be very simple, but its variety will charm the reader because of its novelty. No one need expect to become a successful writer or speaker without having command of a large vocabulary. It gives variety to style because it enables the writer to select the proper words to express his thought. Irving's description of Hell Gate is a fine illustration of this statement. A rich vocabulary means a wealth of thought, a variety of expression, and the ability to understand correctly those who use many words to express their meaning.

The definitions of logic are disputed and vari-

ous; whatever the definition may be it resolves itself in the last analysis to a definition of words and terms. And upon the definition of words and terms depends the whole system of knowledge. A man's knowledge is limited by the number of words he understands. It is impossible to impart to a man knowledge of a subject if he does not understand the words which contain that information. And he who does not know the meaning of words does not know anything. Whatever we think or do turns on their meaning. Many of the quarrels and disputes the world over arise from a misunderstanding of words. The great theological and ecclesiastical disputes of the Middle Ages were nothing more than verbal quibblings; yet what persecutions and tortures followed in their wake. The basis of a good education can be formed only with words well chosen, carefully arranged, and firmly fixed in the mind.

No language is richer in synonyms than the English. There is hardly a language from which the English has not borrowed some form of expression; and because of this composite character it is very rich in synonyms. For this reason the English language has the distinction of expressing every shade of thought and feeling. These synonyms also give the language a

freedom and variety, a beauty and effectiveness of expression which would be impossible without a large assortment of words kindred in meaning but distinct in use. Nothing will show the accomplished writer or speaker to a better advantage than a fine discrimination in the choice and use of words. Style is after all nothing more than the finding of the right word for the right idea. The charm of Gray's "Elegy" and of Whittier's "Snow-Bound," and of many more masterpieces of literature depends upon the effectiveness, suggestiveness, and exactitude of expression. This is just what a study of words will impart to the student, if it is pursued in the right attitude of mind. The use of apt words is the secret of the successful and effective writer.

It has been said that a man is known by the company he keeps and by the books he reads; with equal emphasis it may be said that he is known by the language he uses. A man's language reflects his character; in fact, it reflects the man himself without any regard for what he says. "By thy words thou shalt be justified and by thy words thou shalt be condemned." One unfailing index of a person's knowledge, of his acquaintance with literature and the best thought of the world is his vocabulary; it like-

wise indicates his mental habit and power of discrimination. A man's language is a better measure of his culture than his manners are. Whoever has acquired a command of the mother tongue has attained the highest discipline and culture. This command of language embodies that growth of mental development and esthetic feeling which sees in all things the true, the beautiful, and the good, and developes a taste for the eternal fitness of things.

The study of words is a subject deserving of more attention and effort than what is usually bestowed upon it. Want of time, inadequate knowledge on the part of the teacher, and a feeling of apathy on that of the pupils, are some of the things which have to do with the neglect of this important topic of study. The teacher who would direct word-study must be well read; and above all, he must be a student of languages. No language is a dead language unless it is killed in the teaching. He must be a scholar in the strict, technical sense of that term. He also needs the keenest power of discrimination so that he may be able to distinguish the finest shades of meaning, different forms and words, as well as appreciate the niceties of speech with all their delicacy and precision. These are among the essentials of education and culture.

From what other teacher may the pupil be expected to acquire a taste for the fine things embodied in words? To direct word-study properly is to direct the student toward that which will enable him to find more pleasure and profit than anything else in the whole curriculum of education.

This is the day of dictionaries and reference books. There are several first-class dictionaries; they all have some prominent, distinguishing features which make them almost indispensable and invaluable. To urge the study of the dictionary may seem preposterous; yet pupils should be familiar with a few of these dictionaries, if with not all of them. Of all the commendable habits to be formed at school none deserves more encouragement than the habit of "looking-up" what you do not know. The teacher who can direct and inspire his pupils to develop this habit bestows upon them something that will be of inestimable value to them in later years. They ought to use the dictionary with frequency and ease. They should be sent to it whenever a question arises in regard to the meaning of a word until they have formed the habit of challenging every word whose meaning is not clear. Too many pupils are not familiar

enough with the dictionary to know its full value as an aid to English composition.

Word-study should also be directed toward an increase of vocabulary. A good systematic use of the dictionary will be a real help in increasing it. Another good plan is to keep a note-book for the express purpose of recording a few new words each day. To add two or three to one's vocabulary every day may seem a very insignificant number, but it means several thousand during the high-school period. These new words should be followed by as many definitions as the pupil is able to formulate for himself, and then he should resort to the dictionary for any others. But a vocabulary is not fully one's own until one knows how to use the words correctly. Pupils should therefore be expected to use the newly acquired words in sentences to show that they understand their use.

Another place where the note-book is almost indispensable is in reading the English classics. In this note-book should be entered all words whose meaning and connotation are not clear, and whose history and etymology are interesting and important. This does not mean that the beauty and literary charm of the selection read should be mutilated by turning it into a gram-

mar exercise or into a treatise on etymology; but if the definition of a word or the grammatical structure of a sentence is not known, the only thing to do is to find it out. And why not? Does it spoil the effect of the selection to discover the hidden meaning and suggestiveness of some particular words? These words should be selected beforehand by the teacher for the next day's recitation. It may be necessary for the teacher to make frequent inspections of the note-books to see that the proper entries are made.

Etymology may be made a formal study by the use of some textbook. If not, much valuable work of the kind can be accomplished in other subjects of study. It is a trite saying that every recitation should be a recitation in English, but English needs to be emphasized in every recitation, whether in physics, geometery, or geography. A search for the etymology, history and primary meaning of many words and terms will often be more helpful, and the results more easily retained than a formulated definition, *e. g.*, of "atom," "capillarity," "hydrostatics," "peninsula," "arctic," "equilateral." Latin is taught in all high schools and where etymology is not a separate study fruitful and profitable work can be done while studying the Latin, both

in finding English derivatives and in observing the discriminations in the meaning of the Latin words themselves; for this latter purpose there is no better Latin author than Cicero. In the beginning Latin class one lesson a week should be devoted to the study of the etymology of the words derived from the Latin words found during the week. The same plan may be followed in the second year Latin class. In the succeeding two years it may not be so necessary to have special recitations on words.

There yet remains the subject of synonyms; no study will repay anyone better. Every school library should have a few volumes of synonyms. Crabb's "Synonyms" is a good old standard. A book of more recent date and better suited for practical purposes is Fernald's "Synonyms." The questions and exercises in the second part of the book afford excellent practise. But the best textbook is the one the student makes for himself by gathering the words from his memory or dictionary, and from his reading. Glance down a page of Macaulay's Essay on Milton and you will find such words as "reverence," "dexterous," "convert," "commemorate;" all of these are fruitful in synonyms. A method similar to the one suggested for the study of etymology may be adopted. Words should be as-

signed and the pupils should be asked to find synonyms and to construct sentences illustrating their correct use. All in all the student will be benefited most by putting into actual use the words he studies.

The Educational Influence and Value of Manual Training

BY BURTON M. BALCH

THE EDUCATIONAL INFLUENCE AND VALUE OF MANUAL TRAINING

Not long since the writer heard a mother, who was bringing up a family in a remote and thinly populated county of the state of New York, express regret that the life there afforded such narrow opportunity for "school education." This woman was not versed in modern pedagogical literature; yet the emphasis placed upon the word "school" showed plainly that her good sense recognized the fact that "school" or "book" education was not the only kind. Again the good old-fashioned phrase, "book larnin'" contains for us, and evidently contained for the generation that used it so frequently, a very palatable reference to some kind of "larnin'" that was not "book." The old schoolmasters, or some of them at least, did not think that these homely sources of education could be organized and harmonized with school life; tho even in those days there were some who did not agree with the conservative schoolmen. In his essay on New England Reformers, published in 1844, Emerson very emphatically called attention to the one-sided nature of an education whose sub-

ject-matter from first to last was words, and words only. In 1883 Charles Francis Adams, Jr., of Harvard, and George S. Merriam, of Yale, joined the protest, voiced by Emerson. Each of these scholars bore public testimony before his Alma Mater to the effect that his education had been sadly deficient in the training of the perceptive faculties. And so the recipients of what was then and is now regarded as the highest culture, and the men and women who could lay claim only to common sense, were practically agreed upon the proposition that a part, at least, of one's education should be obtained from other sources than books.

On the other hand, one of the distinguishing marks of modern progress in educational endeavor is the employment of those agencies for the development of youth referred to by implication in the phrase, "book larnin'," of which agencies not the least is manual training.

But no criticism should be passed upon the old schoolmasters. Education is so vital a thing; so closely connected with life, if it be not life itself, that changes and reforms in its practise are only modifications made to fit new conditions of living. In the homes of our grandfathers in both town and country, where all the children under one roof observed and participated in

many of the occupations of life, there may have been no need for manual training. But child-life in the modern city flat is different. So convenient is the baker, the delicatessen shop, the cheap restaurant, that very little is seen of even the commonest household occupations, and nothing at all of such employments as spinning, weaving, soap-making, preparation of milk products, and scores of others in which every child fifty years ago played an important part. In any consideration of the necessity of manual training, therefore, these two sociological phenomena must be taken into account: first, the difference in modes of life that has resulted from mechanical inventions and improved means of transportation and distribution; second, the fact that our population is becoming urban—much of it in residence and nearly all in ideals and manners of life. These conditions may not be ideal. The modern home may be shirking some of its obvious duties, but the education of the young can not be enforced in the home, and so there is demanded of the school to-day that peculiar service which to a degree the city home used to afford, but which now-a-days even in unpretentious country homes is rarely to be obtained. To meet a part of this demand is the function of manual training.

What, then, is the influence and value of manual training, whether obtained in home or school, and what definite educational values does it possess? In the first place let us consider what it is not and some things it does not do. It is not a panacea (which word I use for want of a better) for all the mental ills of childhood. It won't make dull pupils bright nor lazy ones active, tho it may serve in either case for the fulcrum of the lever interest. It is only one of many factors whose product is development. In other words, any course which sought to make it the principal part of the curriculum would fail woefully in its attempt to adjust its pupils to their environment. Witness the country boy who can do things with his hands but can find in no other way that graceful self-expression which is so necessary to happiness and success.

Manual training does not prepare young children to use tools effectively enough to warrant their employment as artisans, tho it should inspire them with a great respect for the master craftsman and arouse laudable ambitions in the directions of the crafts. Indeed, if ever the skill of the workman should be obtained by the pupil the particular exercise wherein it is achieved loses its educational value and the child should be started on the way to get skill in a

new one. One must crave pardon for a reference to the meager education of the man who has become an expert at pegging heels on shoes or running the machine that does it.

Manual training does not give much instruction except in connection with other studies. It does make vital and therefore interesting many subjects which are otherwise wearisome to some pupils. For example, if a class engaged in communal work makes a model of a watershed or a planetarium, what a flood of light is thrown upon the geography lesson?

Manual training does not make a good center for concentration. It should be incidental and subsidiary to the arithmetic and language lesson. It affords, to be sure, a considerable field for the practise of measurement and computation; but the child should be well grounded in principles before he is allowed to apply them in the manual training lesson. Otherwise he may make unnecessary mistakes resulting in the waste of material and thus defeating one of the ends which the teacher of the subject should have in view, the development of habits of careful economy. In the same way accurate verbal descriptions of operations and objects are of value, very much as are rigid statements of proof in demonstrative geometry; but the teacher should make

sure that the child is able to give them before requiring him to do so. Otherwise habits of inaccurate and careless statements may be formed. In fine, the teacher should not attempt to use manual training as a means of direct instruction in other subjects. Considerable stress has been laid upon this point in view of the claims made for manual training by the builders of some educational Utopias.

So much for what manual training does not do, tho a desire to be accurate has made necessary the statement of many ways in which it is of value. A good negative is likely to be a promise of a good positive. If there are certain things that men or methods confessedly can not do, there are usually other things they can effectively accomplish. In stating the case for manual training, an attempt will be made to avoid the anti-climax.

The recreation and relaxation obtained in the shop are considerable factors in its importance and factors upon which it is unnecessary to enlarge. The implications of the words, recreation and relaxation, are sufficient and apparent even to the uninitiated. "Rest without idleness" are the suggestive words of one writer.

In the schoolroom the training in muscular coordination, which results in dexterity and should

result in a degree of ambi-dexterity, is organized with a useful end in view. In the school yard the boys play among other sports the time-honored game of mumble the peg, which name refers to the penalty imposed upon the boy who is beaten at throwing a knife into the ground from a variety of positions. In the school-room his occupation is a miniature of life—activity with a useful end in view. In the yard it is pleasure for himself. The first is altruistic; the second egoistic. Both are good for developing skill. Whittling with the knife has the added advantage of a tangible result when the work is done, tho this be only a willow whistle. The effect then upon the physical make-up of the child is two-fold; recreative and developing. While the brain is resting the hand and eye are being trained.

It has been said elsewhere that manual training does not give instruction, and with this statement what follows may not seem consistent. It does not give much direct instruction, and to impart knowledge is in no way its *raison d'etre*. However, any course in manual training that does not give the pupil both ideas and ideals is a failure; ideas of the use of tools, of the nature, adaptability, and strength of materials and somewhat of their value in money, of the common devices in joining woods, and in simple tex-

tile arts, of the necessity of co-operating with one's fellows if good work is to result; ideals of neatness, accuracy, truthfulness, economy and helpfulness. Then, too, there is no greater tributary to the stream of interest than curiosity. What is so well designed to arouse this as an occupation that makes necessary actual handling of materials gleaned from various parts of the earth? By whom were they gathered and how? By whom shipped and how? The questions that arise are legion. So manual training may link with the work-a-day world geography, history, government, language, and other subjects that often seem to the mind of a child remote from any practical use. It may make another lesson real and vital and therefore interesting.

Handicraft consists in making something with the hand to conform to a preconceived mental picture. The excellence of the product depends upon two things: the excellence of the model, and the faithfulness with which it is followed. The former is the manifestation of a more or less clever constructive imagination; the latter very largely of minute observation and fidelity to what is observed. In advanced classes even in elementary schools pupils are taught first to create their mental pictures, then to make their

working models or drawings, and finally to follow their models. Some of the results obtained in the grades in New York city, which are in no way exceptional, as shown in the educational exhibit at the St. Louis Exposition, speak more eloquently for the training in imagination, observation and execution given by manual training than can the pen of its most ardent advocate.

The ability to form sound judgments is certainly an important desideratum in education. How often do we hear the complaint "He knows nothing but books." The judgments by which we regulate the ordinary affairs of life are not formed as a rule by literary references. A distinguished teacher of Greek once fell from his bicycle, and in falling turned the front wheel around. He pushed his bicycle home, a distance of some four miles, because he did not have enough mechanical sense to turn the wheel back. If he could have acquired in school the ability to make as good a judgment in mechanical matters as it is required to recognize in an aorist participle the first Greek form from which it is derived, he would have been spared much humiliation in addition to a long walk on a hot day.

But important as are the physical and intellectual aspects of the development to be obtained by instruction in the manual arts, they

are far less worthy of consideration than the ethical values. Let us regard ethics as applicable to modes of thought as well as to direction of action. The tendency to-day among the young people of urban environment is to look down upon manual occupations. The school course is very likely to divert the energies of the workman's son away from the channel in which the employment of those energies would be most remunerative to him and useful to society. Very often, too, does the hauty possessor of wealth scorn the practitioners of those homely arts who make it possible for him to enjoy his patrimony. It is claimed by its advocates, and with reason, that instruction in manual arts will restore to the crafts that place of dignity and honor which is theirs by right of age and service. It may avert the struggle, which some prophets see approaching, between capital and labor.

From the lowest to the highest grades the self-activity of the child should be allowed range and freedom. The teacher may suggest, expose, explain; never direct. Thus through the exercise of self-activity, very likely over-baffled effort and discouraging experiment, the child achieves one of the essentials of character, self-reliance.

As Dr. Adler points out, impulsive and desul-

tory volitions are characteristics of the criminal classes, and the wills of children are of this nature, which observation may form a rational basis for the somewhat outworn theory of original depravity. Only by the process of education does the will become the servant instead of master. One of the most effective agencies in will development is manual training. Here the child has to reach an end some distance off, the attainment of which requires patient, persistent, organized effort. The road to this goal is enlivened by interest, and many a child that balks at the idea of reaching an end through books will follow with delight the path hedged by motor activities. And so it learns to plan and work and wait to reach the port of heart's desire.

These are some of the educational values of manual training. The same pertain to other subjects when taught by the genuine teacher; but no other subject connects lessons intellectual so closely with life; no other so well serves a great purpose of education, to adjust to the complex industrial practical life of to-day in which the paramount economic principle is division of labor, the simple creature of God's making, known as the child.

How Best to Acquaint Pupils With What is Going on in the World

BY JOHN M. VAN DYKE

HOW BEST TO ACQUAINT PUPILS WITH WHAT IS GOING ON IN THE WORLD

This is the most fascinating of all subjects to teach; so, at least, has it been to the writer during his years as a teacher in private and public schools, both graded and ungraded; a subject that was apt to interject itself constantly into every branch of study that he taught in the school room, a hobby that had to be curbed, and all teachers must learn to curb their pet hobbies. Yet the necessity of teaching systematically the world's current events does not seem to be recognized by pedagogy; for, upon how many schools can one put his mind's finger, in which a certain period, however short, is set apart for the special study of these matters, or where it is introduced into general class work in other than the most perfunctory manner?

Not being willing to give up his hobby altogether, and never having in the school room sufficient time at his disposal to give a full study-period to the subject, the writer, early in his work as a teacher, cast about him for a plan, a device, a means, by which his pupils, small as well as large, might obtain a reasonable knowl-

edge of what was going on in the world from day to day.

Much, it was evident, could be taught in the various class recitations, particularly those in civics, history, and geography. But this did not go far enough. The ground was not covered as the teacher wished it to be. Could not something additional be devised by which the important events that were daily happening might be brought forcibly to the attention of each and every pupil in the room from the youngest to the oldest, and that without taking up too much time? As an answer to this question, the writer devised and used in his school work what he called "The Daily Bulletin Board." It was a novelty in school work; indeed, so much of a novelty that its use is unknown in pedagogics. Yet from the first day of its birth in the writer's school room it was an unqualified success; and it always was a success, no matter whether used in the graded room of high-class work, or in the undergraded country school. May the writer briefly explain his method?

One of the blackboards should be set apart permanently for the work. In the modern school room there is generally abundant blackboard space, sufficient at least to allow one board

for the purpose. If not, a roll-blackboard can be bought cheaply; or one constructed of slate cloth on a light folding frame. Let that one board be used for no other purpose. It is the school's "Daily Bulletin Board." Each scholar has his right, title, and interest in and to its surface. Upon it are to go the world's events of the preceding day. Whatever has been going on in the world that is of general public interest may find a place on its surface. Each scholar is invited to furnish the "news," and to have put down, in few words, what he or she deems to be of the most importance.

Since, if possible, the items are to be written on the board outside of school hours—before the opening of school in the morning, or at recess, or at the noon hour—at first few may respond, and the teacher may have to assign two or three of the more willing and advanced pupils to do the work. But this will not be for long. If there are two pupils who have items for the board to-day, there will be four to-morrow, while the close of the week will, in all probability, witness a dozen struggling for space for their "news." The board has already become too small. There will have to be an "editor." This high and honorable position will be filled by the larger pupils, selected from those whom the

teacher judges worthy by reason of good scholarship and general ability. Let it be a high honor to be a member of the "Editorial Corps." From this corps an editor is chosen each week. If he or she be a poor blackboard writer, an assistant may be appointed to do the manual work of writing. Or, the teacher himself may think it best to be the editor; in fact, if he does not have advanced pupils, he will probably have to take general supervision of the news. In all cases, he will have to furnish the guiding hand, and keep the board up to his high level, and his suggestions and advice will be more or less necessary all the time.

What shall go on the board? At first, perhaps, everything that is submitted by the pupils. This state of affairs, however, will soon end. There will be an abundance and an overflowing abundance. Of course, the great events that are happening throughout the world will have the right of way. But room should be found also for what is going on in the county, and even at times in the township and the immediate neighborhood. The daily events connected with the war with Spain had the call for prominence in 1898. Lately the war between Japan and Russia called for its daily space. But war is at an end—for the present—and it is as well for the board that

it is so; for there are many matters of importance other than war demanding every square inch of its surface.

As illustrations, from the great roster of events might be named the following: The opening of Congress; important proceedings in Congress; the same in the State Legislature; Cuban independence; the St. Louis Exposition; the Lewis and Clark Expedition; the Panama Canal; the deaths of noted personages, as Queen Victoria, President McKinley, William M. Evarts, Gladstone, Kruger, Verestchagin, Maurus Jokai, Abram S. Hewitt; the coal strike; the Baltimore fire; the discovery of the body of John Paul Jones; the separation of Norway and Sweden; the Chinese boycott; the late eclipse of the sun; the county fair; the fall election; the late great storms in the West; the railroad wreck near town; the finding of an Indian stone-hatchet and Indian arrowheads by Mr. Smith in the field above the schoolhouse; the first robin; and—Tommy, of the sturdy leg, solemn visage, and seven birthdays, hands up *his* slip of paper: "My Angora cat has 4 kittens." This will have to go on the board, because Tommy has his space and he must not be disappointed; besides, Angora kittens are rare birds in this section of the nation, and are therefore worthy of mention.

The board should be completed each day by the close of the noon hour. At some convenient time during the afternoon session, the teacher will devote fifteen minutes, or even ten minutes, to going over with the whole school the events as they appear on the board, calling attention to their geographical and historical relations, to their importance to mankind in general, and to their interest to the immediate community or even to the school itself. He will ask a few questions if he thinks proper; and it may often be advisable to assign subjects to some of the scholars to look up and report upon the morrow—but not too much of this. The teacher will also call the attention of the school to those important events that have been omitted from the board. For the board's duty is to bring out the scholars—it is *their* board—and hence the teacher may find it best to give no aid whatever in furnishing the matter for it; his only office being to select the best that is offered, and to reserve his criticisms for the few minutes given to him in the afternoon.

In placing the news on the board the editor will need to acquire the art of brief expression; following closely the style of the headlines as found in the daily newspaper.

On Friday afternoons, or once a week, there

should be a general review of the week's chief events. This review should be in the form of questions and answers, and should be made a regular lesson as near as practicable.

A last question will arise: How can the pupil obtain the items, the news, that he is to provide for the board? The writer never found any trouble on this score. Hardly a scholar but has access to a daily newspaper, morning or evening edition, or at least to a tri-weekly. The teacher is surely a subscriber to some daily, which will be useless on the morrow, and which he will be glad to hand over to his pupils. Then, there are the parents—the home folks—upon whom it will do no harm to turn loose the inquiring mind. If the pupil once becomes interested in the subject, there will be no end to the energy with which he will browse around for news. Not all will do it? Certainly not; surely not. But there will be enough and to spare. As has been said, the trouble will be not a dearth, but an overflow.

It must not be understood, however, that the "Daily Bulletin Board" was devised as the sole recourse for giving instruction in the world's current events, or as a substitute for teaching them in the regular class recitations. There is hardly a subject taught in any school curriculum

that does not offer constant opportunities for bringing the subject forcibly to the pupil's mind and attention, opportunities for which the teacher should be constantly watching, and which he should use freely.

Civics, history, and geography are the chief studies that bring them oftenest and most prominently to view. But they are not alone. A few e. g.'s will show how numerous are the teacher's opportunities.

In geography: The recent discovery of the great natural bridges in Utah; the camphor production and market, greatly affected by the war between Japan and Russia; the war itself; the return of Fiala from the north; the departure of Peary for the north. In Physics: The "X" Ray (electricity); the airship (æronautics); the danger that is menacing Niagara (hydrostatics). In composition and rhetoric: The spelling reform; the new style of omitting periods and other marks of punctuation at the end of titles, etc.; the admission or the banishment of a new word. In physiology: The mosquito and the yellow fever. In civics: The recent exposures in the government service in connection with the publication of cotton statistics; the selling of advance information concerning crops to certain speculators; the election of

Mayor Dunne of Chicago, and its relation to public ownership of franchises; railroad rebates; the beef trust. In mathematics: The late eclipse of the sun, with an explanation of the general method of calculating the distances between the celestial bodies (trigonometry). In bookkeeping: The troubles in insurance matters, and the methods by which the business of great companies have been mismanaged—or, had we not better pass by all explanations by which books and accounts can be manipulated to show false accounts and statements? Is it ever well to aid the young mind in learning how to violate the laws of our land and still keep out of jail? Is it not better never to let crimes, no matter how great they may be or how much space they may fill in the daily newspaper, come up for discussion in the schoolroom? Certainly they can not go on our "Daily Bulletin Board."

But while the method of teaching the world's current events in class recitations has its value, and is, so far as the writer knows, the only one in general use, it has its objections and its defects. Chief of these is its lack of system—continuity—order. It is not a *regular* subject, a *regular* study for the pupil to look forward to. His mind is not impressed: he is not interested. To-day he may learn much; to-morrow nothing;

and much is left out altogether. The observant teacher soon perceives that he is not covering the ground nor securing satisfactory results. Yet what remedy does he have? To form separate and special classes is clearly an impossibility.

So, while in no way neglecting this method, while employing it to its fullest usefulness, we return to our device, our plan, our means, by which our pupils, small as well as large, may obtain a reasonable knowledge of this all-important subject.

Is the Daily Bulletin Board only theory? is it impracticable? No; it is not. Try it and see.