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REHEARSING THE LESSON

CHRISTIAN EDUCATION

Vol. V

Washington, D. C., November, 1913

No. 3

Associating Bible and Science in the Class-Room—Article 1

BY O. R. COOPER, M. D., EMMANUEL MISSIONARY COLLEGE

EVER since we have operated denominational Christian schools, the problem of incorporating spiritual and intellectual culture into one practical, symmetrical whole, has been before us. In spite of the discussions and experimentations, there does not yet appear to be a satisfactory solution in sight. I have not reached the point in my experience that is ideal in any way. I hope that these articles will bring out suggestions and experiences that will gradually shape themselves into some tangible, workable system that will put this branch of our educational work on a better footing than it is at the present time.

By way of introduction, I wish to cite instruction contained in "Counsels to Teachers," taken from pages 425 and 426, and comment as I quote:—

When the student recognizes God as the source of all knowledge, and honors him, submitting mind and character to be molded by his Word, he may claim the promise "Them that honor me I will honor." 1 Sam. 2: 30.

Two conditions are laid down here. The first is that the student recognize God. It is possible for the student to see God better than does the teacher, but it is far better

for the class, and for the individual students, when the teacher is alive to the fact that "God is the source of all knowledge," scientific as well as spiritual. So, in the association of the Bible and science, the first requisite is that the teacher have full and unbounded confidence in all the statements of the Word of God, regardless of the "evidence" of "science falsely so called." The second factor is that student and teacher honor the Creator to the extent of complete submission.

The more studiously the intellect is cultivated, the more effectively it can be used in the service of God, if it is placed under the control of his Spirit. Talents used are talents multiplied.

The last quotation I wish to parallel by adding another, taken from page 51 of the book "Christian Education:"—

God wants the teachers in our schools to be efficient. If they are advanced in spiritual understanding, they will feel that it is important that they should not be deficient in the knowledge of the sciences. Piety and a religious experience lie at the very foundation of true education. But let none feel that having an earnestness in religious matters is all that is essential in order to become educators. While they need no less of piety,

they also need a thorough knowledge of the sciences.

From these and other references that might be cited, it is plain that "diligent study," even of the sciences, is not a mistake. Because God, the author of this universe with its attendant phenomena, has been unlinked from his works, there has gone up a cry of condemnation for the study of the created things of God. The exact truth of the matter is ably expressed by the following:—

God is the foundation of everything. All true science is in harmony with his works; all true education leads to obedience to his government. Science opens new wonders to our view; she soars high and explores new depths; but she brings nothing from her research that conflicts with divine revelation. Ignorance may seek to support false views of God by appeals to science; but the book of nature and the Written Word do not disagree; each sheds light on the other. Rightly understood they make us acquainted with God and his character by teaching us something of the wise and beneficent laws through which he works. We are thus led to adore his holy name and to have an intelligent trust in his Word.—*Signs of the Times*, No. 12, 1884.

From this we learn that true correlation should lead the student and teacher to have greater faith and trust in God. When we introduce some far-fetched and strained comparison in our attempt to make the Bible teach science, we drive many students into the dark, rather than strengthen their faith. I have been guilty of such work in the past, and I hope my eyes are open so as not to repeat the experience. Knowing that the Bible

and science should parallel, I felt under moral obligation to get *something* spiritual from every paragraph or line. The aim of the teacher is to lead the students to see God as the Creator and Sustainer of the marvelous things of nature. Then comes home the idea that we are of more value than all these wonders and phenomena, and that God is more willing to protect and direct us than we can ever comprehend. He reveals in nature his love, power, mercy, and long-suffering. I have not yet been able to see how to teach science with the Bible as the text-book *per se*, but I can see how to use the Bible as a standard by which to test every theory and statement of man, whether genuine or false.

The quotation just cited gives a principle for the association of Bible and science. It is that "each [nature and the Written Word] sheds light on the other." Whenever we reach a place in our study that one apparently contradicts the other, we can make the choice unhesitatingly. Here is the rule:—

His Word is given for our instruction, and there is nothing in it that is defective or misleading. The Bible is not to be tested by men's ideas of science, but science is to be brought to the test of the unerring standard. Yet the study of the sciences is not to be neglected. Books must be used for this purpose; but they should be in harmony with the Bible, for that is the standard.—"*Special Testimonies on Education*," page 57.

This tells us what kind of books should be used. Another point here: "Books must be used." Some would have us believe other-

wise. It is a lamentable fact that we still have to use books of the world in our higher classes. We endeavor to select those freest from error, but even these contain insinuations and an occasional paragraph not to our liking. In "Counsels to Teachers" there is another line added: "Books of this character [those in harmony] should take the place of many now in the hands of students." In providing this material for class use lies the key to success in teaching the sciences. Provision should be made for the production of such text-books.

Man says the Word is a myth, and that reason is surer than the story of creation. We can recall the "great discoveries" of man and the associated theories that have given place to greater discoveries because the old were proved false. When the great day of God shall come, many of the fine-spun theories then existing will vanish. Man said it never could rain, but it did rain in the days of Noah. The laws that are now quoted and used as the basis, or foundation, of science are permitted to exist because they are not successfully contradicted. Some of them will persist because "God shall send them strong delusion, that they should believe a lie." When these laws are opposed to the Bible in any way, it is time for us to stand by principle. There are many other laws, however, that are true. They do not contradict the standard.

They do not undermine faith in God, but emphasize the wisdom and power of God.

The words of Holy Writ say nothing of the independent laws of nature. God furnishes the matter and properties from which to carry out his plans. He employs his agencies that vegetation may flourish. He sends the dew and the rain and the sunshine, that verdure may bring forth, and spread its carpet over the earth; that the shrubs and fruit-trees may bud and blossom and bring forth. It is not to be supposed that a law is set in motion for the seed to work itself, that the leaf appears because it must do so itself. God has laws that he has instituted, but they are only the servants through which he effects results. It is through the immediate agency of God that every tiny seed breaks through the earth, and springs into life. Every leaf grows, every flower blooms, by the power of God.—*Review and Herald, Nov. 8, 1898.*

So in the study of the sciences in our schools we accept the fact that the Bible says "nothing of the independent laws of nature," and thank God that he opens the eyes of man to see a little way into his vast storehouse. In my class work I refer to all the writings of the spirit of prophecy as well as the Bible. Here I find many truths so plainly stated that any one can comprehend.

[In the next article Dr. Cooper discusses the teaching of hygiene in the physiology class. He gives in full detail his outline on "Exercise" used in connection with the "Muscular System," and with less detail his plan for teaching "Diet."—Ed.]

Vegetable Gardening in Our Schools

BY S. A. SMITH

I. A General View of the Vegetable-Garden Industry

THERE are two great types of vegetable growing,—that which pertains only to home use, and that of growing vegetables for market or commercial profit. The market may be general, or, as in many cases, vegetables may be grown to supply a particular market. In the first case, the vegetables are usually sold in an open market, as is found in most of our cities. In the latter, they are usually sold to special customers, either from house to house, or to restaurants, hotels, groceries, etc. For the home use, quality and a uniform and constant supply are desiderata; in the market growing, quantity, attractiveness, and a bountiful supply at stated times or seasons are desiderata.

In many cases vegetable gardening for profit is not an easy business. In fact, nothing worth while is easy. Many times the margin for profits is small, then there is usually competition, the products are perishable, and prices are not high, owing to the fact that few vegetables are luxuries save when a little out of season. For example, early tomatoes will bring ten to fifteen cents a pound, while during the main harvest-time they can be had for from twenty-five to fifty cents a bushel. The old adage, "The early bird catches the worm," applies especially in vegetable gardening. It is also true in many cases that the late bird does also. In other words, have your vegetables when the other fellow has none.

There are market-gardening centers in close proximity to every large city, which determine, to a certain extent, the location of the business. Then again, owing to the special climatic conditions, there are market centers far removed from the great centers of population, but of easy access by water or rail, which determine largely the prices paid in the local market. For instance, the trucking centers of the South supply winter and early spring vegetables to the large cities to the north, while the Northern trucking centers supply the summer and fall vegetables.

The southern coast of Florida sends vegetables north during January, February, and March; central and northern Florida and Mississippi supply the markets largely during March, April, and May; while Texas, Indian Territory, and Arkansas send us vegetables and strawberries, especially to the Mississippi Valley States, during April, May, and June. Van Buren, in western Arkansas, in 1899 shipped 400 cars of strawberries and 500 cars of cantaloupes to northern markets during the early season, while Jacksonville, Tex., shipped 500 cars of tomatoes. The State of Alabama produces more melons than all the other States of the Union combined.

Regardless of these facts, every gardener of the North knows that the home-grown vegetables supersede those from afar, and in the production of early vegetables the

greenhouse, hotbed, and forcing-hill play an important part.

II. Greenhouses, Hotbeds, Cold-Frames, Forcing-Hills, and Their Management

GREENHOUSE.—The greenhouse, for either vegetables or flowers, solves to a large extent the winter-work proposition for students, especially in the Northern States. Near many of our schools we have sanitariums, which afford a market for greenhouse products. The school home also assists in this way, and usually a good market can be established in towns near by. If properly managed, the greenhouse can be a source of revenue, in addition to being a laboratory for the students in various lines of agriculture, botany, chemistry, etc. It also assists wonderfully in securing early vegetable plants for the garden, and in the case of flowers, for the beautifying of the home grounds and campus. In our training-schools we do not hesitate at putting several hundred dollars' worth of supplies and equipment into a laboratory for the teaching of physics or chemistry, at the same time knowing that these departments never return to the institution one dollar in actual money, aside from a small fee to cover breakage and supplies. They are established for the teaching of science. But we hesitate at putting a few hundred dollars into a greenhouse, which will, if properly managed, provide education of at least equal value, in addition to providing a means whereby students may continue in school, and also pay from fifty to one hundred per cent net profit on the investment.

But here again we face the same problem as in gardening in general. It requires "proper and intelligent cultivation," or work. The question comes, How can we get some one to manage and teach this line of work?—In the same way that we get our science teachers for the physical or chemical laboratory. We must train them; not in the schools of the world, with the world's ideas of industrial education, but in our own schools, to meet our own particular needs.

In planning for a greenhouse, as in any other enterprise of importance, it is an excellent plan to consult men of experience in the immediate vicinity, in addition to reading the advice of experts upon the subject. The building of greenhouses, and their care and management, require expert skill if success is obtained. The same can be said of any branch of agricultural or industrial work, and the sooner we as teachers discover this fact the sooner the industries in our schools will be placed upon a plane where they command the respect of the students, parents, world at large, teachers, and even God himself. For he says, through the spirit of prophecy, "The work should be done under the guidance of experienced workmen." "All the land near the buildings is to be regarded as the school farm, where the youth can be *educated* under *well-qualified* superintendents." No slipshod workmen in God's plan! "The same God who guides the planets works in the fruit orchard and in the vegetable garden." "So when the students employ their time and strength in agricultural work, in heaven it is said of them,

'Ye are laborers together with God.'"

HOTBED.—With the hotbed and cold-frame, the work is not so difficult, nor is the expense of execution so great. Where it does not seem advisable to erect a greenhouse, the hotbed will prove very efficient in the production of early vegetables and flowering plants, and also an aid in the class-room work. In many localities a good, substantial hotbed can be erected at a cost not to exceed one dollar a running foot for a bed from five to six feet wide, which size is commonly used. The class in carpentry can make everything but the glass, which should be purchased from some wholesale dealer where a liberal discount may be received for quantities. The sash, and in fact the entire hotbed, should be made from lasting material, such as cypress or white pine, then thoroughly painted. The part below ground may be dipped in some tar preparation, which is cheaper and even better.

COLD-FRAME.—The cold-frame and cold-frame sash are made the same as the hotbed, aside from the part of the hotbed which is below ground and from the absence of the mulching, which produces the heat as is necessary in the hotbed. The sash should be made from lasting material, and large enough to contain three rows of glass, each not more than twelve inches wide. The common-size glass for hotbeds is 10 x 12 inches, lapped one above the other in the sash, rather than butted. Double-strength glass will prove much more economical in the end.

With both the hotbed and the

cold-frame for early use, it is well to bank around the outside with fresh mulching from the horse-barn, also to provide some covering for the glass during cold nights, such as straw mats, old rugs or carpet, or if nothing else, some of the same banking material.

FORCING-HILL.—The forcing-hill is another way of securing early plants of any desired kind which are meant to remain permanently in the ground. The principle is the same as in that of the cold-frame. The forcing-hill is a small cold-frame large enough to accommodate one pane of glass any desired size, but usually about 12 x 12 inches. In the case of forcing rhubarb or any perennial plant, the frame is placed over the plant and covered with litter to prevent the ground from freezing, but not until the cold weather has forced the rodents into winter quarters. In the spring the litter is removed, and the extra heat produced by the presence of the glass and the banking by fresh-headed manure will force the hill far in advance of those in the open. By placing these hills where melons are desired, and allowing the ground first to warm up, the seeds can be planted early enough so that plants ready to vine can be had before your neighbor plants in the open. Then when he is having "such a time" with the bugs, you can be selling melons at a fancy price. One man in Minnesota in a melon district cleared nearly \$400 an acre in this way. "The early bird catches the worm."

MANAGEMENT.—The management of the frames sums itself up thus: The things to be sought, so

far as the plants are concerned, are specimens, (1) which are ready at the required season, (2) which are stocky, and (3) which have made a continuous growth. The things to avoid are, (1) the chilling of the plants; (2) too hot and close atmosphere, which tends to make the plants soft; (3) crowding the plants, which tends to make them weak and spindling; (4) growing plants too far from the light, which also tends to make them soft and weak; (5) the scalding of the plants by the sun, an injury which is very likely to occur when the sun comes out after a long "spell" of dark or cold weather; (6) the wilting of the plants, due to too great heat and to too little moisture in the soil.

The questions of temperature and water are most important. These are largely determined in the case of the hotbed by the quantity of manure used in filling the hotbed. For detailed instruction on greenhouse, hotbed, or cold-frame work, and for construction, care, and management, read such as the following:—

"Greenhouse Construction," Taft; Macmillan	\$1.50
"Greenhouse Management," Taft; Macmillan	1.50
"The New Rhubarb Culture," Morse; Macmillan50
L. H. Bailey's "Forcing" book; Macmillan	1.25
"Vegetable Gardening," Green; Orange Judd	1.00
"Principles of Vegetable Gardening," Bailey; Macmillan	1.50
<i>Country Gentleman</i> magazine; Curtis Pub. Co.	1.50

The Poetry of Robert Browning

BY EMILY JOHNSON, LOMA LINDA

THE poetry of Robert Browning, with its purity of thought, depth of feeling, and high spiritual truth, cannot fail to convince the careful reader that it is the product of a great mind and a pure, sympathetic heart. The full beauty of his poetry, it is true, cannot be seen at the first reading, and is never to be discerned by the superficial reader; but what a wealth of truth and beauty awaits the diligent student in the writings of this noble man! We cannot enter sympathetically into the study of his work without feeling that he calls us to a higher plane of thought and life. We feel ashamed of our selfishness and ignorance, our low aims, and weak endeavors. We feel as if the writer, to use one of his own illustrations, has as-

cended high up the lofty mountain-side of life, "above the level of the night," where is given him a clearer vision of life and its meaning, a broader view of human experience, and as if from this Pisgah height he beckons us to follow, climbing higher and still higher.

Another characteristic that is clearly noticeable is the hopeful, optimistic spirit that pervades his work. It is true he recognizes the spirit of evil at work in the world, but he looks beyond all this to the Christian's hope; and to use his own expression, "My own hope as a sun will pierce the thickest cloud earth ever stretched," and though life may present some hardships, "How good to live and learn!"

With this power at the poet's command, one cannot fail to notice

the spirit of humility in all his works. His own feelings concerning himself are thus expressed in "Pisgah Sights:"—

"Only a learner,
Quick one or slow one,
Just a discerner,
I would teach no one.
I am earth's native,
No rearranging it!
I be creative,
Chopping and changing it?"

Among the many lessons a study of Browning has impressed upon my mind and heart is the important principle that character building is the great business of life. What is gold or silver, fame, or any other treasure when compared to a well-rounded character? I have also had it forcibly impressed upon my mind that character does not come by chance. God gives us the material, and through cooperation with him, character must be molded and refined as the cup is formed and polished upon the potter's wheel. This work of character building is the work of a lifetime; but perfection of character is unattainable without struggles and trials,—

"Then, welcome each rebuff
That turns earth's smoothness
rough,
Each sting that bids nor sit nor
stand but go!
Be our joy three parts pain,
Strive, and hold cheap the strain:
Learn, nor account the pang;
dare, never grudge the
throe."

Browning was an ardent believer in ideals. The fact that man does not reach his loftiest ideal is

no reason for discouragement. In fact, the ideal we have struggled manfully for in this life and come short of, we shall find waiting for us in the future immortal life.

"Ah, but a man's reach *should* exceed his grasp, or what is heaven for?" And in heaven, "All we have willed, or hoped, or dreamed of good shall exist." Progress and advancement must continue to life's close, and even in eternity we shall not cease to grow.

There is much in the character and works of Browning that reminds one of the great apostle to the Gentiles, who, in summing up the great things of life says, "The greatest of these is love." Love with Browning is more than a mere sentiment. It is the one thing needful, the thing without which life is barren and unlovely. When we have learned what love is in its true meaning, and have it embodied in the character, we have found the treasure that is enduring, the best thing this life affords. "For life, with all it yields of joy and woe, and hope and fear, . . . is just our chance o' the prize of learning love." Such love is revealed in service for our fellow men. Service that is given for love's sake does not look for compensation in this life, and seldom receives it; as the poet says, "Give earth thyself, go up for gain above."

Browning possesses the spirit of the true teacher, and they who fail to avail themselves of the instruction he gives lose much that goes to make life worth living.

Home-Made School Apparatus

BY LYNN H. WOOD

The Compound Pendulum

PERHAPS there is no problem in the first part of mechanics harder for the student to understand than is simple harmonic motion when applied to a compound pendulum of two or more motions. If the

the other, so fixed that they will vibrate at right angles to each other. Set the pendulum swinging from post to post, and you will at once observe its length to be AB. Set it swinging the other way, and only the pendulum of length AE will be seen to vibrate. Now set the apparatus in motion by starting it from one corner, and the motion of both pendulums is brought into action and compounded. The resulting curve is traced by the pencil of sand. By varying the

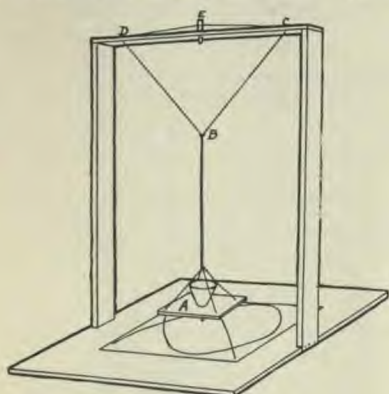


FIG. 5



FIG. 6



FIG. 7

student can but see the pendulum move, he can gain a clearer insight into the intricacies of this problem. The apparatus used in making these curves is frequently called the "sand-pendulum," because the figure is made by sand as it falls from the funnel. If Fig. 5 is closely examined, it will be seen that AB is one pendulum and AE

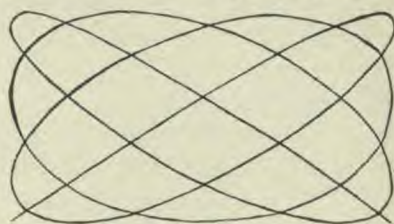


FIG. 8

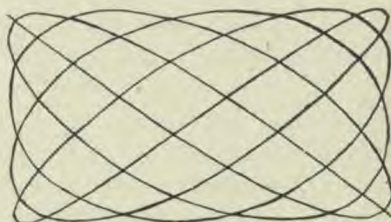


FIG. 9

ratio of pendulum lengths a great variety of figures may be obtained.

The apparatus should stand about 33 inches high. The peg at E is to aid in changing the ratio between the two pendulums. At B the strings are held together by a little tin button with a hole just large enough to permit the waxed string to pass through. It must not slide of its own accord.

To get the figures shown, use these lengths:—

Fig.	Dist. AB Inches	Dist. AE Inches	Fig.	Dist. AB Inches	Dist. AE Inches
6	22½	30	8	26¾	30
7	25	30	9	24½	30

EDITORIALS

The Bible and Science

THIS is a theme about which we have talked much and thought much and prayed much, but about which we can hardly say we have done much in the concrete. It is a pleasant-sounding phrase and an excellent topic for an inspirational address. It really does hold the two-leaved key to the determination of first things in the education of children and youth: "The Bible should hold the first place;" "The book of nature is next in importance." We must and do accept these assertions as the truth in the matter. We must have the talk and the thought and the prayer, but, What shall we *do*? is the pressing question. Some mistake the Bible for a treatise on science, and seek to formulate from its spiritual messages the "independent laws of nature." Some mistake science for a spiritual commentary, and hesitate to investigate natural phenomena and law without connecting with each — however remote the relation — some text of Scripture. Both are entirely sincere, but both tend to turn the class work into a mere Sunday-school exercise. We do not speak in this way because we have a satisfactory solution to offer, but because we are deeply concerned to see our science work strictly Biblical, yet not a whit less scientific in the true sense. It is for this reason that we have arranged for the series of three articles on "Associating the

Bible and Science in the Classroom," begun in this issue.

Dr. Cooper has been courageous enough to tell our readers what he is doing, and frank enough to say that he has not reached the point in his experience that is "ideal in any way." That he is not sparing himself any effort in the concrete to advance toward a better solution is evident. That every other teacher of science ought to come forward with the very best he has to contribute toward solving a problem of such vital importance to our educational work, is equally evident. If we understand Dr. Cooper's position correctly, he is basing his work on safe premises, — that the Bible is not to be used as a text-book of natural science, but as a guide in its study, and a touchstone of scientific truth and error; that science thus studied confirms and elucidates Scriptural truth, and increases faith in God. This would seem to suggest that when the Bible uses scientific terms or cites natural phenomena, it does so to elucidate or confirm spiritual truth — a perfectly legitimate and fruitful way to use all scientific knowledge. It would suggest also that the Bible is our guide-book when investigating science, just the same as it is when doing business or when searching human records of history, with the one primary advantage that God is the direct Author of both creation

and the Bible, which therefore sustain a very close relation.

It will help in this connection to bear in mind that creation came before the Bible; that if sin had not entered, the Bible would not have been necessary; and that the Bible is in part a record of creation and in part makes a free use of its phenomena in the furtherance of its own special mission — to shed spiritual light upon a darkened world. When we study nature, we are tracing back to their original source the life and power whose manifestations the natural eye can behold. Adam needed no other book. That many scientific investigators do not find their way to God by this means, shows that they need a guide-book to mark out the way. That Guide-book has been placed in our hands as educators. We would not for one moment lessen its value if we could, nor limit its intended scope in the slightest degree. It is too precious a daily companion to treat in this way. Yet we do earnestly desire to see it used to the very greatest advantage in association with science in the education of our youth and in the development of efficient workers. To help toward this end, we invite our readers to contribute from their experience while these articles are passing through the journal.

H.

Vegetables in the Dietary

It is unfortunate that for some reason — perhaps misguided or misapplied zeal in health reform — a prejudice against the use of vegetables in the daily dietary has grown up, especially among some who are now in middle life. If

there is any ground for such prejudice, it must be found in some modern Talmud rather than in the Bible, or in some human "hand-writing of ordinances" rather than in heaven-sent instruction for our times. What can be more appetizing to the unpampered palate, or more wholesome for the bodily functions, than plain baked potatoes with their jackets on, or plain steamed potatoes with their jackets off, or juicy boiled cabbage or spinach, baked squash, stewed onions, or fresh, crisp lettuce, radishes, celery, sliced tomatoes or cucumbers, asparagus, and a host of their congeners? Some of these have a marked medicinal as well as nutritive value, especially the uncooked ones. From radish juice the Germans make a popular and useful remedy for hoarseness and cough. The root of the radish possesses soothing, stimulant, and diuretic properties, and is sometimes used for a tonic. Lettuce is gently laxative and sedative.

But lay the emphasis on *plain* — a plain term, but what does it mean? In this connection it means especially *unobscured*, *unmixed*. When we have potatoes, for example, let us have potatoes — have them so we can see what they are! Let us not have them obscured in some kind of "hash," or their flavor killed with protose or nut butter; with these strong flavors you don't know what *potatoes* taste like, but you eat them for the sake of getting what goes with them. If you must have machine-chewed nuts, take them straight, and you will the earlier be satisfied. Give us potatoes plain, with a little salt or oil in the cooking, and with a

little cream or butter in the cooking or to be added at the table. Let each eater do more of his own mixing — put his butter or cream on his potatoes, or eat bread and butter with plain potatoes, alternating with lettuce salad or celery at pleasure.

But it is not enough that our vegetables be merely plain; if we are going to relish them plain and digest them easily, the cooked ones must be served hot, and as soon as possible after the cooking is done; and the uncooked ones must be served cold and crisp, and, in most cases, as soon as expedient after being gathered. This suggests the great advantage of having the source of supply near the place of consumption, at least on the same farm or its equivalent. It suggests also a reform, much needed in some parts, in the method of dining-room and table service. Even fresh, tender vegetables, if allowed to stand after cooking till they grow cold and tough, make about the same impression on the eater as if stale, wilted vegetables from the corner grocery had been supplied the cook in the first place. Fifteen minutes from pot to palate is too long a lapse of time. Five is a better maximum. The very sight of steam from food, with its exhaling odors, makes the mouth water, and summons the bodily forces to the rescue.

But *plain* and *hot* are not all. Vegetables must be *properly cooked*. Contrary to the usual opinion, these prosy articles in the dietary require the best skill a cook can muster. Far more useful to a school or a family is that cook who can make common garden edibles

eatable, and with relish, than is one who can merely prepare pastries and desserts for the pampering of the appetite and the probable derangement of the stomach. This is too large a subject to pursue further here, only to add this remarkable assertion made to Battle Creek College: "Of all the positions of importance in that college, the first is that of the one who is employed to direct in the preparation of the dishes to be placed before the hungry students." Also to add this, that the vegetables themselves are often made to bear the blame which should properly rest upon a poor quality to begin with, or upon improper cooking, or upon faulty methods of service. Give vegetables a chance! — raise them yourselves so you cannot blame the original articles, get the best cook in the State, and improve your dining service. H.

A Vital Principle in Pedagogy

IN our Normal department this month we print an article entitled "Assigning the New Lesson," which we wish to commend to teachers in advanced as well as elementary schools, for the principle of pedagogy it embodies and elucidates. How many times blame for a poor recitation is laid upon the students when it really belongs to the teacher! Nothing is more indispensable to good results in class work, and to stimulation of the student to do his best, than a thorough understanding of what he is expected to do, and some hints on the most economic and effective way of doing it. Teachers in the college and academy often leave the assignment of the lesson till the

The Education of 10,000 Successful Men

What Kind of Education Helps Most ?

[Some time ago a little sheet fell into our hands, bearing as a heading the main title given above. It was prepared by Wm. W. Smith, chancellor of the Randolph-Macon system, and verified by the United States Commissioner of Education. These data are worthy of careful study by every educator and by every one who employs the living products of our schools. We therefore give them here complete.— H.]

THE editors of *Who's Who in America* have rendered the country a service by inducing more than ten thousand of the men now living in the United States who are "most notable in all departments of usefulness and reputable endeavor" to report their education. These men have won enviable distinction, and the facts they give will help answer the questions, "Does education help one to success?" and "What amount of school training helps most?"

According to the last census there are in the United States 14,794,403 males over thirty years old. The United States Bureau of Education estimates that these are divided educationally as follows:—

<i>Class 1. Without education</i>	1,757,023
<i>Class 2. With only common-school training or trained outside of organized schools</i>	12,054,335
<i>Class 3. With regular high-school training added</i>	657,432
<i>Class 4. With college or higher education added</i>	325,613

Omitting the few persons under thirty years old, the report from 10,704 notables shows: Without education, none; self-taught, 24; home taught, 278; with common-school training only, 1,066; with high-school training, 1,627; with college training, 7,709, of whom 6,129 were college graduates. That is,—

From the 1,757,023 of Class 1 no notable reported.

From the 12,054,335 of Class 2 came 1,368, one for every 8,812

[24 of these report themselves as self-taught; 278 as privately taught]

From the 657,432 of Class 3 came 1,627, one for every

From the 325,613 of Class 4 came 7,709, one for every

It thus appears,—

1. That from 1800 to 1870 *the uneducated boy* in the United States failed entirely to become so notable in any department of usefulness and reputable endeavor as to attract the attention of the *Who's Who* editors, and that only 24 *self-taught men* succeeded.

2. That a boy with only a *common-school* education had, in round numbers, one chance in 9,000.

3. That a *high-school* training increased this chance nearly twenty-two times.

4. That *college* education added gave the young man about ten times the chance of a high-school boy and two hundred times the chance of the boy whose training stopped with the common school.

5. That the *A. B. graduate* was preeminently successful, and that the *self-educated man* was inconspicuous.

From the nature of the case, it cannot be claimed that these classifications are exact, but they are based upon the fullest statistics ever obtained, and the necessary estimates have been made by government experts. It is also doubtless true that other circumstances contributed to the success of these trained men; but after all reasonable allowances are made, the figures force the conclusion that the more school training the American boy of that period had, the greater were his chances of distinction. How will it be in this century?

It is unnecessary to extend this inquiry to woman. Education is practically her only door to eminence.

DEPARTMENT OF THE INTERIOR, BUREAU OF EDUCATION,
WASHINGTON, D. C., March 22, 1904.

The above estimates have been verified carefully in this office, and are believed to be substantially correct.

W. T. HARRIS, *Commissioner*.

THE NORMAL

Assigning the New Lesson

BY NELLIE D. PLUGH

It was a tremulous sigh that came from the bowed head under the light. The sound was familiar, and unmistakably near to tears. Prompt action was necessary.

"Well, little sister, what is it?"

"It's this history lesson. Mr. Juneau gave it out just as we were dismissed, and I didn't hear whether it was the next chapter or half of it. I asked all the other girls and they didn't know. And it's such a long chapter!"

The tired sob that followed was not surprising, in the light of other experiences. Only two nights before it had been, "How far shall I

study? I don't know. He said, 'Begin the Punic wars tomorrow.'"

A series of poorly assigned lessons had succeeded in making a subject naturally unattractive to the child a burden, joyless and dreaded.

Of the common mistakes of teachers there is none more often committed than this. The teacher may be perfectly prepared in subject-matter, he may have taught well and brought enthusiasm and inspiration into his work, all to be shorn of their glory by assigning as the child's part of the lesson a

vague, indefinite something to be done, or a part so filled with difficulties as to be impossible.

There may be several reasons for poor assignments,—ignorance of the importance of definite assignment, lack of time, or indifference and lack of preparation. The last will not be true of the conscientious teacher, and when the first is understood, every teacher will feel that if he has time for any part of the lesson, he has time for its proper assignment.

An assignment should give a definite piece of work to be done, it should clear up unsurmountable difficulties, and so prepare the child for his work that he is eager to accomplish, to the best of his ability, the task set before him. At its close there should be left no doubt in the child's mind of what he is to do. The voice should be decisive, every word to the point and given deliberately enough for each child to hear it. It is a question how many obstacles should be removed from a lesson. Some believe that none should. Let the child overcome all difficulties and work out his own salvation. But it seems neither wise nor practicable to make this the invariable rule. There is before me the reading assignment for the first lesson in Ruskin's "King of the Golden River." It is a brief lesson, only enough to hold the attention and interest of the class, but there are sixteen words whose meaning and pronunciation are to be found in the dictionary. The study period is thirty-five minutes. Can the child in this time master sixteen difficult words and have time left for reading and thought getting —

the real object of the lesson study?

The first word on the list is *secluded*, and I find its dictionary meaning, "set apart by solitude," no simpler to the minds of the children than the original word. Will the wise teacher not tell his class that "a secluded part of Stiria" is a lonely part of the country, and save them the time of "running down" the meaning of the word?

Meanings of words, references, plan of written work, methods of study, all have difficulties which the thoughtful teacher can clear up in the assignment, by explanation, or by putting the child in the way of helping himself, and thus save for himself and his class worry, poor results, and disappointment.

Principles Governing Assignments

The assignment should —

1. Give a definite problem to be worked out. It must begin at some point with which the child is familiar and continue to some goal which the child will recognize when reached.
2. Clear up difficulties.
3. Give specific directions for written work, references, method of study, etc.
4. Appeal to the child's instincts, and stimulate him to the best effort of which he is capable.

A DEFINITE PROBLEM TO BE WORKED OUT.—Not only should the pages and the exact place to begin and end a lesson be given, but there should be something definite to work to, a problem to be worked out. It may be, for instance, the first assignment from the "King of the Golden River," which introduces the Treasure Valley and the

three brothers. After discussing the picture of the quaint little gentleman which is the frontispiece of the little volume, and the request of the small maid which called the story forth, to arouse interest, comes the problem for the day's study period: "Study the first three paragraphs of chapter 1. Tell how the Treasure Valley got its name. Describe each of the three brothers. We shall see tomorrow if each of you likes the same brother best." Here the child has a definite thing to do,—get the ideas from three paragraphs well enough to use as a basis for further thought. As a result, the child attacks his task, and finishes it with a sense of accomplishment and the confidence and power that such a sense brings. Far different are the superficial study and doubtful results of the one-time, "You must read your lesson five times today," or three times, or eight times, as the mood of the teacher dictated.

(Concluded next month)

Connecting the School With the Home

(Concluded)

BY GRACE O'NEIL ROBISON

IN one small town in Illinois there has been introduced weekly record cards which include cleaning the rooms, making the beds, setting the table and washing dishes, laundry work, sewing, mending, darning, and other things a child might do at home. The instruction is given in a systematic, organized way by the teacher at school, while the actual work is done at home; and when the weekly record is signed by the parent, school credit is given for it. Thus

the educational value of housework is recognized by both teacher and parent.

Household economics has now been introduced into practically every school in Chicago. This embraces not only the baking of bread and a knowledge of dish washing, but such things as fruit canning, domestic sanitation, care of milk, fraudulent and harmful preservatives; food requirements for people of different ages and occupations; exercises in planning meals for 10, 20, 30, and 40 cents a day, with special reference to economy of time, labor, and fuel; effect of carelessness and bad management upon the home and the community.

These things are being taught not only to girls but to boys as well. —One writer has put it this way: "A knowledge of housekeeping is not a matter of sex but of science, and since it is something we all ought to know, men and women alike, aren't the schools which we all attend the proper place to learn it? We are all forced to learn the measurements of land and principles of surveying, though few of us ever own a foot of our own land. We must study longitude and time, though we are content to set our watches by the factory whistle and not by the stars. Why should we not all learn the principles of housekeeping, on which we depend for three hundred and sixty-five days of the year? Ought they not to be a part of our race knowledge?"

What Shall We Do?

Shall we not seek more fully to combine the work of the home and the school? But whether this

work is done at home or at school, or at both, let us as teachers study more diligently how to do it intelligently, and well, and in such a way as to be productive of the highest results. And this work does bring results. It tends to bring about a greater respect for the ordinary household duties. Girls should not be allowed to regard their work as drudgery. As long as they regard it in this way, they will never do it well. If a teacher saw only drudgery in his profession, and the doctor ceaselessly complained of what a thankless task was his, they would never advance very far in their professions. Our girls should learn to respect the work that belongs in a special sense to women, and reach the stage where they will delight in washing dishes, getting breakfast, and caring for the house.

Through keeping a simple account at school of expenditures for manual training supplies, cooking, etc., children may become interested in keeping the home account for each month. Such items as rent, grocery bill, milk, light, fuel, clothing, school tuition, may be kept account of, and this will prove a valuable training to the child.

Many ways might be mentioned in which a knowledge of household economy is of value to our boys and girls. It is a question that affects both the home and the school, and as such should be receiving careful and prayerful consideration by teachers and parents alike. What a privilege it is for Christian teachers and parents to work with one common purpose in view—that of fulfilling God's plan in the training of the boys and girls!

Primary Bible Nature—No. 3

BY SARAH E. PECK

AS we view the work of the second term, the subject changes entirely. Instead of the perfect work of Creation, we meet the sad story of the entrance of sin. The beautiful picture is marred, and the need of the Redeemer is made manifest. Following is the message of salvation through the lives of patriarchs and prophets until the promised Messiah appears in person, himself to tell by the power of a sinless life God's great story of love's sacrifice. But even here it is not how much the teacher can tell, but how much the child will assimilate, that actually counts.

The Temptation and Fall in two stories, with one lesson left for review by giving the children the privilege of relating the story in their own language, or by giving special attention to the memory verses, is better than three stories on these subjects, with the language response omitted or the memory verse work but partly accomplished.

God's Love and Sacrifice are so closely related that one story on the part of the teacher, giving one day for the pupil's response, is better than two separate stories by the teacher.

Under the "Message of Salvation to the Antediluvians," Adam and Noah are two distinctly interesting characters, and each is deserving of an entire lesson story; but in the following topic, "The First Destruction of the Earth," we may easily combine the Flood and the Bow of Promise into one story, and thus provide one day

for the child's response by topic, question, or memory verse drill.

The topic "Old Testament Characters" offers several places where thought units may be grouped more symmetrically: "The Son of Promise" and the "Test of Faith;" "The Work of Angels" and the Story of Jacob; the Story of Joseph, in two parts instead of three; the Story of Moses, in two parts instead of three; and the Story of David, in two instead of four parts.

Under the topic "The First Advent of the Saviour," Jesus' home

life may be given in one rather than three stories; the Gospel to the children of all races may easily be given in one story instead of two stories, "Farewell Words" and "The Ascension" in one instead of two, and the entire term's work closed with that wonderful story of divine triumph over sin for us — the Triumphal Entry of our Lord into the city of God.

By thus combining we leave time for the child to express his own heart on these great truths — an experience of great spiritual value and an aid to oral composition.

OUTLINE—SECOND TERM

First Year	Second Year	Third Year
THE FALL OF MAN		
1. The origin of evil. Ex. 28: 17 (first part).	1. The dangers of little sins. Gen. 3: 3.	1. The value of obedience. Eph. 6: 1.
2. The temptation and fall. Micah 7: 8.	2. The results of Adam's sin, to our first parents. Gen. 3: 24.	2. The results of sin on the world. Rom. 5: 12.
THE PLAN OF REDEMPTION		
3. God's love and sacrifice. John 3: 16.	3. Jesus' love for us. Gen. 3: 15.	3. Why Jesus must die. 1 Cor. 15: 22.
THE MESSAGE OF SALVATION TO THE ANTEDILUVIANS		
4. Adam and his family.	4. The joys and sorrows of Adam's long life.	4. How the story of salvation was told from Adam to Noah.
5. Noah and his work.	5. More of Noah's work.	5. Enoch and Noah.
THE FIRST DESTRUCTION OF THE EARTH		
6. The ark.	6. More about the flood. Rom. 4: 7.	6. Review story of flood. Ps. 4: 8.
7. The flood and the bow of promise. Gen. 9: 13.	7. What this story means to us. Matt. 24: 37.	7. Plants and animals buried by the flood.
OLD TESTAMENT CHARACTERS		
8. Abraham. Gen. 15: 5.	8. Moses and the law of God. Ex. 20: 3-17.	8. Review the story of Abraham. Heb. 13: 2.
9. Isaac. Gen. 15: 6.	9. The child Samuel. Prov. 20: 11.	9. Review the story of Joseph. 1 Tim. 4: 12.
10. Jacob and Esau, "twin brothers."	10. King Solomon. James 1: 5.	10. Review the story of Moses. Heb. 11: 23-25.
11. Jacob and Esau (continued). 1 John 1: 9.	11. Elijah fed by ravens. Matt. 6: 31-33.	11. Review the story of ten commandments. Ex. 20: 3-17.
12. Joseph and his dreams. Ps. 34: 7.	12. Elijah by prayer obtains rain. Jer. 5: 25.	12. Review the story of Joshua. Joshua 1: 7-9.

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| 13. Joseph (continued).
Rev. 3: 21. | 13. The widow's pot of
oil. Ps. 34: 10. | 13. Review the story of
Gideon. |
| 14. Birth and childhood
of Moses. | 14. Elisha, the prophet. | 14. Review story of Eli-
jah and Elisha. |
| 15. Moses and the com-
mandments. Ex. 20: 3-17. | 15. Elisha smites Syrian
army with blindness.
Matt. 7: 12. | 15. Story of Ruth. Ruth
1: 16. |
| 16. The boyhood of
David. Psalm 25. | 16. Josiah—the boy
king. | 16. Daniel in the king's
court. 1 Cor. 10: 31. |
| 17. David and the giant. | 17. Esther—the girl
queen. Ex. 20: 12. | 17. Daniel interprets
king's dream. Dan. 2: 28
(first part). |
| 18. The little Jewish
medical missionary in
Syria. 3 John 2. | 18. Job—the patient
man. James 1: 2-4. | 18. Daniel in the lions'
den. Ps. 91: 15, 16. |

THE FIRST ADVENT

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|---|--|---|
| 19. The visit of the shep-
herds. Luke 2: 10, 11. | 19. Review story of birth
of Christ. Matt. 1: 21. | 19. Prophecy of Christ's
birth. Zech. 9: 9. |
| 20. The visit of the wise
men. | 20. Satan's attempt to
destroy child Jesus. | 20. Review story of
birth. |
| 21. The flight into Egypt. | 21. Review story of
childhood and youth. | 21. Review story of
childhood and youth.
Luke 2: 40. |
| 22. Jesus' home. Eccl.
9: 10 (first part). | 22. Review story of bap-
tism. | 22. Review story of bap-
tism. |
| 23. His visit to the tem-
ple. | 23. First cleansing of
temple. Matt. 21: 13. | 23. Jesus in the wilder-
ness. Matt. 4: 4. |
| 24. John the Baptist.
Matt. 3: 1, 2. | 24. The woman at the
well in Samaria. | 24. How to meet the
tempter. Matt. 4: 10, 11. |
| 25. Jesus' baptism.
Matt. 3: 16, 17. | 25. The leper cleansed.
Matthew 8. | 25. The centurion's serv-
ant. |
| 26. The first miracle.
John 2: 5 (last part). | 26. Parable of sower.
Eccl. 11: 6. | 26. Parable of tares.
Matt. 13: 30. |
| 27. Jesus as a teacher. | 27. Parable of the pearl. | 27. Parable of the net.
Matt. 13: 49. |
| 28. Jesus as a healer
(Jairus's daughter). Ps.
103: 2, 3. | 28. Feeding the 5,000.
Phil. 4: 19. | 28. The transfiguration.
1 Thess. 4: 16, 17. |
| 29. Jesus blessing little
children. Mark 10: 13-16. | 29. Healing the blind.
Luke 18: 35-43; 2 Peter 1:
9 (first part); Job 6: 14. | 29. The blind man
healed. John 9: 25. |
| 30. Children of all races
—the gospel to all the
children. | 30. The Good Shepherd.
John 10. | 30. Parable of wedding
supper. |
| 31. The duty of children.
Matt. 5: 16. | 31. Story of Lazarus.
John 11: 25. | 31. The ten virgins.
Matt. 25: 13. |
| 32. Why Jesus should
die. | 32. Parable of selfish
rich man who made greater
barns. Matt. 5: 7. | 32. The prodigal son.
Prov. 28: 13. |
| 33. The story of the
cross. John 1: 10, 11. | 33. The woman healed
on Sabbath. Luke 13: 11-
13. | 33. The ten lepers
cleansed. John 15: 3. |
| 34. The resurrection. | 34. The rejected city.
Matt. 23: 37. | 34. The last supper. 1
Cor. 5: 7 (last part), 8. |
| 35. The ascension. Acts
1: 11. | 35. Review story of res-
urrection and ascension.
Heb. 7: 25. | 35. Review the story of
the burial, resurrection,
and ascension. Rom. 6: 4,
5. |
| 36. The triumphal entry
into the city of God. Ps.
24: 7-10. | | |

Manual Training

BY ALICE OWEN RITTENHOUSE

Model XIII — Bed

DIAGRAM XIII. Take extra pieces for headboard and footboard, on which cut laps with which to join the bed. The bed is three and one-half squares long and two wide.



DIAGRAM XIII



DIAGRAM XIV

Model XIV — Cradle

Diagram XIV. Cut rockers, and paste on the head and foot; also cut down the sides and footboard.

Model XV — Dressing-Table

Diagram XV. Cut a standard for the silver paper mirror, and paste the frame over it. Paste the edges only of the silver paper. Cut the legs short.

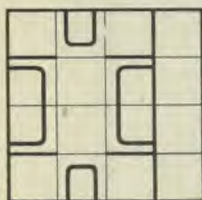


DIAGRAM XV



DIAGRAM XVI A

Model XVI — Dresser

Diagram XVI A. Foundation, square box. For the back and mirror frame see diagram XVI B. Make boxes for drawers, and place them inside the square box. Use paper fasteners for knobs.

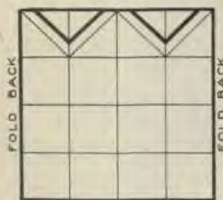
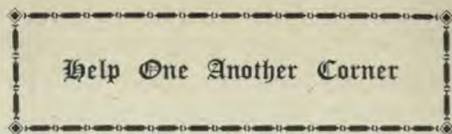


DIAGRAM XVI B

The next three models are for the kitchen.

It's a great pity to see so many people without any children to educate them.— *Dorothea Lummis.*



Drill Work

BY B. B. DAVIS

I HAVE been strongly impressed of late that much more drill work should be given. Teachers plead lack of time; but is it that? May it not rather be too much time spent on non-essentials? We are all acquainted with the graduated know-nothing. And because he is a know-nothing he is also a do-nothing. Why is he?

Many correct and widely varying answers may be given; but I wish to emphasize only one,—the lack of drill work. It is a psychological fact that owing to the plasticity of the neurons, a nervous impulse tends to follow the same course over which it has passed successfully before. If it travels the same path a number of times, a habit is formed.

This is what happens when a child is required to say over and over again, "Six times nine are fifty-four." He forms the habit of saying "fifty-four" when he hears "six times nine," as he forms the habit of tipping his hat to a lady.

Teachers assign review work, and this is essential; but it will not take the place of drill in class. Fix the important points of the lesson first; then use whatever time is left (if there is any) upon secondary facts. You may feel that this method will not hold the interest of the class. My experience has been that just as soon as each member of the class feels that he is mastering the hard places in

the lesson, his interest increases. When the hard places of today's lesson are mastered, point out the important things to be learned in the next day's assignment, and note the assurance with which he undertakes the next lesson.

It is not necessary that the drill be given in the same way each time. I think it is best if drill work can be combined with the development of the lesson. The teacher calls on each member of the class to give one important fact of the lesson. This continues until the children tell all the facts they remember. Then they may be given the privilege of referring to their books for any points omitted. The recitation would then be continued by the topic, or name, or seat method, as seemed best.

Occasionally the lesson would take the form of a "spelling-down." Sides would be chosen, and the questions asked first of

one side and then of the other. Better results are obtained when such lessons are announced the day before. While the fun element is needful in drill work, the amount used should be measured by the teacher rather than by the pupil. The pupil must keep his mind on the fact to be learned; that is, he must focalize it. Bagley has summarized the law of habit building thus: Focalization plus drill in attention.

Persevere in giving drills. Be enthusiastic. Let the principle of "This one thing I do" be your determination. Then the academic and college teachers will not sigh at the thought of receiving a new class "just up from the grades." More of the grade pupils will "go up," and when they have finished a course they will be among those who know, because their teachers have helped them form the habit of knowing by persistent drilling.

READING COURSE

Third Year

Part I: "Counsels to Teachers"

The Child's First School

1. (a) In what educational rank has the Lord placed the family? (b) What is the nature of its influences?
2. Mention some requisites to making the home school a success.
3. What key to educational results has Solomon given?
4. Outline what is meant by "the way he should go." (Pages 108, 109.)
5. What are children to be taught in "the church at home"? How? With what promised result?

Home Discipline.—1. What later conflicts are avoided by wise discipline at home?

2. In what exalted language is Christian home life pictured?
3. (a) For what reasons do many par-

ents fail in child training? (b) What evil results follow?

4. How can parents make their children most truly happy?
5. Point out various successful ways of making home attractive?
6. How are unpromising children to be dealt with?
7. What principles regarding punishment should be carefully observed?
8. What bearing does right home training have upon school advantages?

Safeguarding the Young

1. What is the key to safeguarding the young?
2. What special error should parents avoid?
3. Make a synopsis of this chapter by noting down under each of the six sub-heads the chief points developed.

What Shall Our Children Read?

1. What situation demands a serious answer to this question?
2. What pedagogical fact emphasizes its importance?
3. What tendency in youth calls for careful guidance in what they read?
4. Note carefully the instruction on this point.

Worthless Reading.—1. What is the character of the sensational books now deluging the world?

2. How do these books act on many minds? on the thoughts?
3. What are the effects of reading love stories and frivolous tales?
4. How far-reaching are these effects on many?

Infidel Authors.—1. What other type of reading imperils the soul?

2. To what degree should these be shunned?
3. Describe the best way to prevent the evil influences of pernicious reading?
4. What three definite agencies may be employed to help greatly?

The Parable of the Growing Seed

1. What was Jesus' method of teaching? Give an example.
2. How did he illustrate its lesson in his own life?
3. What traits should be cultivated in children? How?
4. In what practical way may culture of the heart be promoted? Are you doing it this way in your school?
5. What makes first lessons of so great importance?
6. Show that children are to be regarded as a heritage from the Lord.
7. How is the mother's work regarded in heaven?

Teaching Lessons of Helpfulness

1. What distinct aim will help correct the one-sided education usually given to children?
2. What is branded as an "artificial line of education"?
3. What should be the child's first lessons, and how should they be given?
4. Why should manual training be continued when school is begun?
5. What good example is set for children?
6. What reward does virtuous industry bring?
7. What class could be greatly benefited by it?
8. In what noble aims should parents and teacher unite?

9. What emphasis should be laid on domestic education?

Cooperation Between the Home and the School

1. Where should children be prepared for school life? How?
2. What qualifications should church-school teachers have?
3. What kind of school should the teacher conduct?
4. What is one of the reasons why church-schools should be established?
5. How may the teacher have "wise discipline"?
6. Point out distinct ways in which parents may strengthen the teacher's hands.
7. What sympathetic understanding should unite home and school?

Home Schools

1. Describe one important type of home school.
2. (a) What are the advantages of keeping young children under the parental roof? (b) What should they be taught? (c) How should home be made attractive to them?
3. What instruction should children constantly receive in the home?
4. What appeal is made to older children?
5. What cooperation will constitute genuine missionary service?
6. How may the weakening of the teacher's work be avoided by parents?
7. In what respect is the home superior to the church-school and the college?

Part II: "School Management and Methods"

CHAPTER IX — School Libraries

1. How should you create a school library for your school?
2. If you had a school library for your church-school, how should you manage it?
3. How should you use a school library in your school?
4. Write a list of fifty books which you consider indispensable to a church-school library for the eight grades. Grade your list.
5. How do you think a church-school "faculty" would aid the educational work in your conference?
6. How could you raise funds for a church-school library?
7. Answer the questions on page 90, paragraph IX.

HOME EDUCATION

Conducted by Mrs. C. C. Lewis, Takoma Park, D. C.

Study the Individual Child

PARENTS and teachers, study your children; study the individual child. O, the folly of treating all children in the same way, even children of the same family! The faculties are developed in different degrees. This is true not only of the emotions, but it is true of the senses also. Often a child is censured for stupidity when the fault is not mental, but a physical defect. An illustration of what study of the individual did for one lad, is told us by the principal of a city school. The story is one of his own experience: —

Five years ago at the opening of school a little six-year-old boy came to school and was placed in the first primary. Complaints came to me during the year of the boy's stupidity; he apparently "could not learn," so his teacher said. I knew his parents were poor and ignorant, and telling his teacher to "do the best you can with him," I dismissed the whole affair from mind.

When Archie's first year was ended, it was found by "examination" (?) that he knew but little if anything more than he did when he started to school; so he was accordingly "booked" for the first primary, the *second year*. The second year rolled around and found Archie *physically* larger and stronger, but *mentally* weaker.

Archie's two younger brothers started into school the third year, and of course were put in the same class with Archie, for he still was in the first primary. The third year passed away, and Archie's

two brothers had done their work nicely and were to be promoted to the second primary, but poor Archie was in the same condition as at first, dull, careless, and we thought brainless. Disliking to mortify him by promoting his younger brothers over him, I violated the iron-clad ethics of "grades," and passed him along with his two brothers into the second primary. But the fourth year came and went and found Archie just as dumb apparently as ever; so per force we had to start him — his fifth year — in his "old second reader" again, and his teacher informed me that "he ought to be in his primer.

But by this time I said to myself, I will study Archie. One day I began noticing him; *I had never seen him before*: there he was, a boy eleven years old, sitting in his seat, idle, his under jaw hanging down, vacant-eyed, and that utterly expressionless face which we find in idiots. When called upon to read, he had lost his place, and his teacher would scold him for his *carelessness*. The next morning I found Archie in one of the stores with some other children, looking at Christmas toys. I began talking with him in regard to what he wanted Santa Claus to bring him; he bashfully pointed to a little "dumb watch." But I said, "Archie, why not wish for a watch like mine that will tick loud, and will run? Just listen now and hear my watch tick." I found that he could hear my watch tick only within *three feet* of either ear, while I could hear it easily at *twenty feet*. I took him up to my physician's office, who found at the back of the nose the adenoid

growths which had affected his hearing; in a moment he removed them, and the boy went back to school. The doctor and I told no one of what we had done. In about three weeks from the time the operation was performed, my little son said, at the dinner-table, "Papa, you just ought to see how fast Archie is learning; he gets all the 'head-marks' in spelling, and he is just beating us all in reading." Next his teacher came to me and said, "What have you done to Archie? His improvement is wonderful; he is the brightest one of his class." I then told her what had been done for the poor little fellow whom we had abused for almost *five years*.

At the close of this term's work, Archie stood at the *head* of a class of *twenty-two*, where for almost *five years* he had been at the *foot*.

The "dunce cap" worn by poor little Archie *so long* now rests in its *proper place*, on my own head.

How to Avoid Colds

BY D. M. CANFIELD, M. D.

[The following article from the pen of Dr. D. M. Canfield should have appeared in the October issue. Although belated, the suggestions are so valuable that we print the article, believing it will still help some.—MRS. C. C. L.]

As the autumn season advances, the busy mother dreads the frequent colds which afflict Johnnie and Mary, and which interfere with the routine of the household, as the children must be given treatments for cold. Possibly at school the youthful teacher was thoughtless in letting the windows be open at a time when the children were very much overheated from the playground, or in some way one of the children has contracted a cold, and the mother knows very

well that it will go "through the family." At bedtime she wearily gets out the camphorated-oil bottle, the fomentation cloths, the foot-bath tub, and proceeds to doctor the cold. Johnnie's throat is sore; the tonsils are swollen. Of course he is too young to gargle his throat. Mother married at the close of her high-school course, instead of at the close of the nurses' course, and she does not think to swab Johnnie's throat with listerine, or what is better in tonsillitis, equal parts of olive-oil and tincture of guaiac. This she can apply by winding snugly just a bit of cotton on a toothpick, or a larger stick if the tonsils are difficult to reach, and just touching these parts with the preparation, always pressing out the excess of the solution on the applicator against the bottle, and using a fresh applicator for each dab at the throat.

So the dear mother struggles away, knowing that Johnnie will not be over this before Mary will have it or the precious baby will be down with it, and the thing must be gone over again with them. And visions of enlarged tonsils, adenoids, deafness, and rheumatism, of which she has heard, and finally distressing excursions to the operating-room for the removal of the adenoids and tonsils, fill her worried imagination as she goes to sleep.

Now, my dear sister, it may be that some of those frequent colds might be avoided if you were careful to put the little long-sleeved and long-legged undersuits on at an earlier date. This should be done, especially if the child is delicate or takes cold easily. There is no fire

yet in the dining-room. The children shiver around until the sun comes out if they are outdoors; then the evenings are long, and they are still out at play until late, and finally come in chilled. Better let them sweat a little in the middle of the day with too much on than to take frequent colds. The prime cause of tonsillitis and adenoids is taking cold.

Frequent, repeated colds! How shall we avoid colds? Keep the clothing so distributed that the body is kept warm. To be sure, the feet should be kept dry and warm. Then, as a rule, children do not take cold unless the surface of the body is chilled. So if they are dressed to suit the weather, fed with simple, good food, and permitted to live much outdoor, these may prove the "little way-marks to the foot-path to peace" for the weary mother.

Worth a Year's Subscription

I ALMOST exclaimed aloud for joy when I read the very helpful instruction given in the September number of CHRISTIAN EDUCATION by Miss Hale and Miss Peck. They are among the leading normal directors of our denomination, are very capable teachers, and both are authors of some of our school readers. Miss Hale's article on the teaching of phonics is so simple and so complete that no one can fail to understand it. I am sure it will be a great help to every mother who is trying to teach her children to read.

There are many parents all through our ranks who are anxious to give their children a little start in reading before they send

them to school. There are also many who long to give primary Bible lessons to their children, but feel unprepared for the work. I want to give a word of encouragement to these earnest parents. It seems to me if I were beginning the work of a mother, I should be willing to give a year's subscription for those two helpful articles on primary Bible and primary reading.

"As Our Day Our Strength Shall Be"

ONE mother says: "If ever I longed to make a success of anything, it is the training of the lambs entrusted to my care. If I had only realized the responsibility of motherhood before, it seems to me I should have made some preparation for it. But I am glad my Saviour has promised wisdom to those who lack."

It is a precious thought that we mothers are, in a special sense, workers together with God. He is interested in the salvation of these children, not alone because they are our children, but also because they are the souls for whom he gave the life of his Son.

In the humdrum of our everyday life we are liable to lose sight of the importance of our work. Do we not sometimes look on the lot of foreign missionaries with longing eyes, and think they are doing a great work for God and humanity? If we could only do such a work as they are doing! Of course the Lord loves them, and hears them when they pray; and so we are apt to look beyond the work the Lord has given us to do. Now the Lord is just as willing to help

us in our work for the souls he has entrusted to our care as he is to help the foreign missionary or any one else.

Is it not a precious thought that "the everlasting God, the Lord, the Creator of the ends of the earth, fainteth not, neither is weary," and that "he that keepeth Israel shall neither slumber nor sleep"? We know for ourselves that this dear Father takes note of our earthly affairs, and sometimes when we are greatly perplexed and do not know which way to turn, by his Holy Spirit he enlightens our minds and makes the path plain before our faces.

"A Wise Selfishness"

[Under this heading an old copy of the *Ladies' Home Journal* contains the following good advice, which is worthy of careful thought by every mother.]

CAN a mother spend herself too freely for her children? Hundreds of thousands of good mothers all over the land will answer unhesitatingly: "No! there is nothing too much for a mother to do for her child." It is true, but like all truths, it has its limitations. What does the wise mother desire for her child?—Perfection of character. She wishes to guide and train it so that it may pass through this life a blessing to itself and to those with whom it comes in contact. Can she do this by always yielding to its desire for pleasure and personal comfort? by making its own ease the first? by removing every roughness from its path?

"When the question is put to her, she says: "No; of course not; no

one would be so foolish as to expect it." And yet, when it comes to be a question between her gratification and her child's, does she not always put her own aside? The woman who sits in a darkened room, evening after evening, rocking her baby to sleep because the small tyrant will scream if she leaves it, is sowing seeds of selfishness. If later she tries to educate it more wisely, she has to trample down or pull up the weeds which ought never to have been allowed to sprout.

It always seems to me intensely sad to see faults in children which are the consequence of overindulgence by those in authority over them. When a child speaks impertinently to his mother or rudely to his brother or sister, when he lifts his hand to strike his mother, or persistently disobeys her, one knows without the need of long explanation that the early training has been defective. Is there a sadder sight than to see a young girl taking the best of everything for herself, to the utter disregard of the mother who has spent her life for her? The girl has been brought up to place herself first and her mother second in everything; she is scarcely to blame if she does it almost instinctively. Unless she has a very noble nature, she will do it without any compunction.

If the family means are small, she must have the prettiest dress, the freshest ribbons, the most expensive hat. Her mother says, "O, it is no matter about me!" and the daughter echoes the sentiment, which should never have been uttered. When both cannot go on a pleasure trip, it is the mother who

stays at home, saying to herself, "Young people ought to have a good time; the cares of life come soon enough to us all!" She does not remember that the selfish spirit she is fostering is a bad preparation to meet them. If there is disagreeable work to be done, the mother assumes it, because she cannot bear to see the pretty hands roughened or the fair complexion reddened. Household work should be a delight to a healthy girl, and one of her sweetest pleasures should be to save her mother.

A mother does spend herself too freely for her children when she gives up her own rights to them, effaces herself so that they do not recognize her superior claims, makes it difficult for them to "honor" her, as the fifth commandment demands they shall do.

It is a wise selfishness that makes the mother insist upon keeping her proper place in the family as the crown and center of home, tenderly loving her children, serving them in all legitimate ways, but seeing that they take their fair share of the burdens of life.

PARENTS frequently pet and indulge their young children because it appears easier to manage them in that way. It is smoother work to let them have their own way than to check the unruly inclinations that rise so strongly in their breasts. . . . It is a wicked thing thus to shirk responsibility; for the time will come when these children, whose unchecked inclinations have strengthened into absolute vice, will bring reproach and disgrace upon themselves and their families.—*Mrs. E. G. White.*

Chats With My Correspondents

Mrs. E. C., Knoxville, Iowa.—I was very much interested in your letter, which came a few days ago. I am sure, with all the duties that you have upon your hands, you are indeed a very busy woman. But these two little girls if rightly trained can be a great help to you. I am sorry to tell you that we do not have Grade 2. The Department of Education felt they could not provide this year for more than two grades; that is, Early Education and Grade 1. By having Grade 1, however, you may be able to get suggestions for the fundamental work, so that you would be able to carry your older daughter with no other help than the books furnish, or such suggestions as we might give you privately. I am glad for your courageous tone "that we never know what we can do until we try," and I am sure there is no place where that is more true than in this home training of our children. It is simply marvelous how much small children may be taught to do to help themselves and their parents. I should be glad to have you write me as freely as your time will permit about your work and your children.

Mrs. W. S., Hendersonville, N. C.—I am much interested in what you say about your children. The calendar, which has been sent to you under separate cover, will give you a description of the mothers' normal courses, so that you may be able to decide if you need both courses. I think, however, they would both be helpful to you if you feel that you can take them. The first covers that early period from birth to four or five years, and Grade 1 covers the years from 7 to 8. After you read the description of the courses, I should be glad to hear from you, and I should be glad to have you tell me if you have had any experience in teaching. If you have had, you might get along with the first grade alone, but if not, I think you would find much help in the Early Education course. The future education of a child depends much on these early years. It is worth a great deal to him if he is taught how to use his faculties. You have the first opportunity of "waking up his mind." Amid all the cares that come to a busy mother, it is sometimes hard to find time to give the little ones all the care they should have, to answer all their questions, and to help them in their investigations; but it is time well spent.

Notes From the School Hygiene Congress

A Sane Use of Battle-Ships

THE preamble to resolutions regarding the use of discarded battle-ships states that nearly 1,000,000 tuberculous children are attending public schools, and there is hardly accommodation for 1,500 to receive instruction in the open air. The congress, it states, is convinced that the open-air school is one of the most powerful agents in the prevention and cure of tuberculosis in childhood, and that it has been demonstrated that nearly all climatic conditions, provided the air is dustless, lend themselves to the prevention of tuberculosis in the predisposed and to the cure of the afflicted. The resolutions follow:—

"That the Fourth International Congress on School Hygiene petitions the United States government to place at the disposal of the various States of the Union as many of the discarded battle-ships and cruisers as possible, to be anchored according to their size in rivers or at the seashore, and to be utilized by the respective communities for open-air schools, sanatorium schools for children, or hospital sanatoria for adults.

"That the congress expresses its appreciation to the Italian government of the example it has given by consecrating three of its discarded men-of-war to the combat of tuberculosis.

"That this congress expresses the sincere wish that other governments may follow the example of Italy.

"That copies of these resolutions be presented to the American and other governments represented at this congress."

School Inspection in New York

Dr. S. Josephine Baker, director of child hygiene of the department of health, New York, referred to the fact that 824,547 pupils are attending schools in New York whose health is under the supervision of the system of school inspection. The city has appropriated for 1913 for this work \$364,300.

Dr. Baker described the school inspection system, showing how much it has grown in New York City, from simple supervision over contagious diseases until it includes a physical examination of every child at least once every two years, home visits to show parents how unhygienic conditions may be overcome, and to urge proper treatment of the child, and the establishment of various clinics where children who are unable to pay

may be treated free of charge. During 1912 it was necessary to exclude only 4,000 children from school, and in no instance has an epidemic of contagious disease become sufficiently serious to close the school building. In fact, *during the four years since the division of child hygiene was organized, no public school in the city has ever had to be closed because of contagious disease.*

During the last four years there has been a marked decrease in the number of cases of eye and skin diseases. Trachoma, which was found in about twenty per cent of the children examined in 1903, was found last year in only three per cent. Scabies and ringworm have occurred during the last year in the ratio of only about five cases in each school. Each child entering school for the first time is examined physically, and thereafter receives a repeated physical examination on an average of once in every two years. Whenever physical defects are found, the nurse visits the home and explains to the parents the need of treatment. The number of cases of physical defects has decreased markedly in the last four years, but there is still a sufficient number of children who need attention to warrant close supervision over their health by the health authorities.

In the public schools of New York at the present time there are approximately 60,000 children with untreated defects of eyesight, 65,000 with defective nasal breathing, and 82,000 with enlarged tonsils, while over 400,000 have defective teeth. This represents an average *decrease of over 33 per cent* in the number of similar cases found four years ago. Owing to the educational efforts of the nurses in the homes, an average of 80 per cent of the children found with physical defects have been treated each year for the last four years.

Infection in School

The way to prevent infection in school is to teach personal cleanliness. Abolish the drinking-cup and the towel in common use. Keep careful watch of contagious diseases, and exclude them.

Health of Athletes

A comparison of 625 star athletes of the Naval Academy with 580 non-athletes, in both cases from the classes of 1892-1911, shows that apparently the non-athletes are in better physical condition than the athletes.

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J. L. SHAW
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Editors

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Educational Notes

PRACTICAL work in sewing, cooking, and other household arts is required in all English schools for girls above the infant grade.

Seven hundred home gardens were started in Port Ewen, N. Y., this year under the direction of the school authorities.

"To till the soil, to train the children, to make the home, a work of continuous human service,—I count these the greatest privileges that can fall to the lot of man."—*Ambassador W. H. Page, in a bulletin on "Education in the South."*

In Minnesota the need for trained teachers of agriculture and domestic science is so great that the School of Agricultural Technology at the State university has taken for its main work the preparation of teachers for these subjects.

School officials in Beverly, Mass., recently calculated the money gain for their pupils in vocational education. They found that an expenditure of \$800 per boy in industrial training had raised the capitalization of the boy's economic value from \$6,000 to \$15,000 or \$18,000.

Of the 6,572,000 schoolchildren in Prussia, 3,815,000 are in Protestant schools, 2,383,000 in Roman Catholic schools, and the comparatively small number of 368,565 in the non-sectarian schools, where the pupils take most of the subjects in common, but receive religious instruction separately in the faith to which they belong.

"The school garden movement has shown us one way of solving the child labor problem," says Dr. P. P. Claxton, United States Commissioner of Education. "It has proved that children can make things grow, and grow abundantly. A tiny plot 4 by 8 feet, such as a child has in the city farm, grows vegetables enough to supply a family of five with a different vegetable every day for five days in the week."

The Potato

(*Solanum tuberosum*)

THE word potato is probably from the Indian word *battata* as used by Sir Walter Raleigh. This plant, with the tomato and the petunia, is a member of the nightshade family.

De Candolle thinks the potato has been cultivated in Peru for two thousand years. At about 1550 the plant was carried to Spain. In 1586 it was carried to Ireland by Thomas Herriot, who probably obtained it from the Spaniards. Herriot was a member of one of Raleigh's expeditions. Long afterward the potato was carried from Ireland to England. In 1718 the potato was brought to New England by some Irish immigrants. The fact that the Irish used the potato long before the English were familiar with it seems to explain the name "Irish potato."

Bailey states that next to rice the potato is the most extensively grown and the most valuable crop in the world. About 5,000,000,000 bushels are annually grown. About 30,000,000 acres are grown in Europe; of these Germany has 8,000,000 acres. The United States has about the same acreage as Europe, with a yield of from one third to one half as much. From the United States Census of 1910, it is evident that during the previous year 376,537,000 bushels were raised in this country. Of this amount New York raised 45,000,000 bushels, and Michigan 35,000,000 bushels. Pennsylvania followed closely.

The average composition of the potato is about 75% water, 2.8% ether extract, 2.5% protein, 20% starch, 1% ash, .33% fiber, and .75% other nitrogenous matter. The composition is, however, quite variable.—*The Rural Educator.*

EDUCATION is a better safeguard of liberty than a standing army.—*E. Everett.*

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