

# The YOUTH'S INSTRUCTOR

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ELI AND SAMUEL





FIVE hundred thousand tons of beet sugar were produced in this country last year.

"OWING to the excessive humidity on the Canal Zone, good housekeepers burn an incandescent lamp inside their pianos at all times to keep the wires from rusting."

"A TRINIDAD sugar planter is said to be making paper from sugar-cane stalks with such excellent results that it will pay to grow cane for paper alone, and make sugar as a by-product."

It has been ascertained that in a town in Spain where no bull-fights are allowed, the criminal cases averaged only thirteen to every ten thousand inhabitants; while in places where the greatest number of fights are held, crime averages one hundred twenty-nine to every ten thousand inhabitants.

"NICHOLAS, of Montenegro, who has lately made himself a king, exercises a fatherly supervision over his subjects. Every man must carry a loaded revolver, and if the king finds one without his weapon, he is as likely as not to give the offender a severe trouncing. To carry an umbrella is as grave an offense as to be without a revolver. The king not long ago seized the umbrella from the hands of a Montenegrin whom he saw on the streets, and gave him a thrashing with it, after asking 'how a hero dared carry a woman's sunshade.' If he should go to Rome, where his daughter is queen, he would have to do as the Romans do, or he might find himself in the Tiber or in other trouble."

### The One Drop That Spoils

A VISITOR in a great mill where cottonseed oil is made, noticed that the wonderful pumps that drove the oil away across the room into receiving tanks were lubricated with the same kind of oil as that which they forced through the carrying tubes.

"Yes," the manager, to whom the visitor spoke about this, said, "we have learned that if we use any other kind of lubricant, now and then a drop may find its way in with the cottonseed oil, and one single drop spoils the quality of our oil."

One single drop!

"This is not a very important matter. I will bend just a little this time. I know the rules are against it, and I would not do it with any one but you!"

Right there was a flaw in the life of the young man who said that. A drop of wrong had fallen into the chalice of his soul, and that drop would taint all that was there.

"That tree yonder leans a little to the east. Had you not better straighten it now?"

"It will grow straight by and by."

And yet, that tree never did grow straight. Always it leaned to the east. For it had that wrong slant in the wrong direction from the start. The time to be sure of straight trees is in the beginning.

The way to be sure that your life will always be right and strong and clean is to keep it so. Let not the slightest suspicion of evil come into your heart. Live so high that no one ever will dream of charging you with the failing of having two standards.

What do you do when you go out to shoot at the mark? Do you set up two targets a little way apart, and trust to fortune to carry your shot to one or the other? You know that would be to fail. The only way to be sure of hitting the mark is to have just one target, and aim for that as if the very life depended upon it.

Look out for the one drop of wrong in your life! Keep pure! — *Youth's World*.

### "New Education"

A SIXTEEN-PAGE monthly devoted to practical education in school and home. It contains each month questions for home study in theory and practise of teaching, American literature, history of education, physical geography, physics, psychology, algebra, and general history. These lessons are designed to aid young people in securing certificates for teaching. Published at Rogers, Ohio. Fifty cents a year; ten cents a copy.

### Siam's Exports of Bird's-nests

THE nests of a species of birds belonging to the family of swifts, inhabiting the islands off the coast of Siam, are delicacies which the Chinese consider very fine in the making of soup. The demand for the nests in Hongkong so exceeds the supply that the prices range from fifteen to twenty-five dollars a pound, according to quality, while the average price for the total annual product is about seven dollars a pound.

The export of bird's-nests from Siam during the last year amounted to 17,781 pounds, valued at \$109,848, most of which was used by the Chinese cities. The nests consist almost entirely of the salivary secretion of the birds, whose glands are much more developed than those of the ordinary swifts. The season for the gathering of the nests begins in April and ends in September.

The Chinese regard them as a valuable tonic as well as a delicacy.—*Popular Mechanics*.

### Priceless Treasures

LITTLE birds and little flowers, little diamonds, little pearls; But the dearest things on earth are the little boys and girls.

—*Selected*.

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# The Youth's Instructor


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No. 46

## Giving the Bible First Place

ERNEST LLOYD

NE of Mr. Spurgeon's biographers tells us that during a part of his life he read two new books a day. That could not mean careful reading of every page, but "he had learned by much practise, how to rapidly extract juice as he would squeeze an orange." Yet it was Spurgeon who said: "I would like to see a huge pile of all the books, good and bad, that were ever written, prayer-books and sermons, and hymn-books, and all, smoking like Sodom of old, if the reading of these books keeps you away from the reading of the Bible; for a ton weight of human literature is not worth an ounce of Scripture, one single drop of the essential tincture of the Word of God is better than a sea full of our commentings and sermonizings, and the like."

*"Every young person who reads at all should regularly give to the Bible the highest place in his or her reading."*

Let the simple test for all our reading be this: "Is this paper, this article, this book better fitting me to appreciate and understand the Bible, or am I letting it take the Bible's place?" The thought is well put in the following quotation from an eminent writer: "The current page that tells of the world's progress, or of its misery and need, should lead back with whetted appetite to the pages that tell of God's plans for the world and of God's supplies for human need; the most abstract mathematics or logic should develop the accurate thinking that better grasps Bible truth; the observation of nature and her wonders should lead reverently to the greater wonders of revelation; faithful portraiture of human life and conduct should lead back to the one book which best describes men both as they are and as God means them to be. Do they do so in your case? If not, your use of them must be *misuse*."

It is related of Alexander Duff, the great missionary to India, who spent his last years in teaching in New College, Edinburgh, that he loved to tell his students this story of his outward voyage to India. He was a great lover of the classics, and took special delight in the library of carefully selected volumes which friends had furnished as a part of his missionary outfit. "In rounding the Cape of Good Hope the vessel was wrecked and nearly everything on board lost. As the passengers gathered about a fire on the beach, a sailor brought to Dr. Duff a book which had been washed ashore, and asked him if it was his. It proved to be his Bible, wrinkled and discolored by sea water, but still legible. He took it as an omen from Heaven, and from that hour, though always a leader in education, he made the Bible central in his thought and study and teaching."

*"The book to read above all others is the book that lives above all others."*

We should be aroused to realize and respond to the Bible's claim upon our time and thought. There would then be less weakness in our Christian life and

service. We must concentrate more on the Bible,—on the Bible itself, more than on books written about it or drawn from it. Many good books, intended as helps, may be so used as to crowd out the Bible. It has been well said that "religious people often read thin, superficial books of religious sentiment, but do not meet face to face the strong, exacting, masculine pages of their Bibles." And to the neglect of Bible reading and study can be traced the prevalent moral laxity and corruption of our day. But the Bible is never "superficial," never "thin." Simple indeed in great part it is, so that even a child or a plantation Negro may delight in it, but always profound. "In this book," said Ewald, the great historian, to Dean Stanley, "is all the wisdom of the world." "Why be satisfied with the water-jug or bottle when the spring itself is at hand?"

The chapter on "The Value of Bible Study," in "Christian Education," is well worth our careful perusal. Here are a few lines from it: "There is nothing more calculated to energize the mind, and strengthen the intellect, than the study of the Word of God. No other book is so potent to elevate the thoughts, to give vigor to the faculties, as the broad, ennobling truths of the Bible. . . . Go below the surface; the richest treasures of thought are waiting for the skilful and diligent student." Reader, give the Bible its due, and it will repay you a hundredfold.

### Decision

*"Cease to do evil; learn to do well."*

MANY fail to make a success of this life, and are in danger of failing to attain to the life to come, from a lack of decision, or from falling into the habit of carelessly making wrong decisions.

Many do not utter a decided "No" in the presence of agreeable temptations. They yield to inclination at the very moment when inclination should be denied.

Not only must we not do the evil, but we must energetically and determinedly do the right. The only sure way to keep out of mischief is to be fully occupied in doing good. We should put all there is of us into doing the right thing, at the right time, in the right way.

Many carry too much ballast; they will never attain altitude or speed, because of the weights they are carrying. Pride, fashion, sloth, love of ease, carelessness, indifference bind many to a mediocrity of attainment. They lack the courage to cut the cord of world-ties, world-praise, momentary gratification and pleasure, and so can not attain to a position of victory, of self-mastery and success.

So many content themselves with attaining a position far below what their natural talents, if rightly used, would qualify them for, that there is always "room at the top" for those who are determined to "aim high."

To consent just to pull through our daily duties in a way that will enable us merely to escape severe criti-



cism or dismissal, is to hold a low conception of life's claims and opportunities, or to have an entire misconception of how to rise to positions of trust and usefulness. Those who do thus are kept in employment merely on sufferance, and will be exchanged at the earliest possible moment for men and women with ambition and determination.

Persons who are chronically "out of employment" often wonder why they are not wanted, when so many and such urgent calls are constantly coming from all parts of the world for workers. But the answer is easy, the persons wanted are those with energy, high ideals, and a never-failing determination to succeed at any cost of personal inconvenience. The cause is not in need of persons who desire to be carried; who desire to be found places, moderately easy places, with comforts on every hand. No; persons are wanted, who, though surrounded by comforts of every kind, would be unhappy until they had shaken themselves loose from these, and had taken up their cross and were following closely to him who "came not to be ministered unto, but to minister."

Boys with their hands habitually in their pockets, girls who spend more time before the mirror than on their knees or otherwise in converse with the "unwieldy Servant of man's necessities" who holds the key to the power and the grace needed to insure success,—these will continue in the ranks of the "not-wanted multitude."

But what are we personally going to do about this matter? Shall we read this article, as we have read many similar ones, and straightway forget it all? or shall we look directly up into the face of Jesus, and have a frank, open talk with him about our present position and the future? Heaven is daily weighing character, we are told, to see how much responsibility can be safely placed upon each individual.

Jesus is by our side. His eye is upon us when we are tempted to let ourselves down; when tempted to break a home rule, a school rule, or a custom of any institution with which we may be connected. Shall we grieve Him? We can not afford to do it—no, not for his sake, our own sake, or the people's sake.

And we *decide* not to do so, but to do the *right*.

G. B. STARR.

### Standing Before Kings

To the one diligent in business is given the divine assurance that he will not stand before men of low estate, but before kings. A modern demonstration of this truth occurred when Mr. John Wanamaker, the Philadelphia merchant, was introduced to William II, emperor of Germany and king of Prussia. The event is thus described in *Progress* magazine:—

"Utterly disregarding all forms and ceremonies, plain John Wanamaker, on being introduced by a court dignitary, strode boldly up to the somewhat astonished German monarch, and grasping him by the hand, said: 'I am glad to meet such an enterprising young man; that is just the sort of thing we admire in America.' The emperor was much entertained by the storekeeper's candor, and had quite a long talk with him. He afterward remarked to a member of his suite: 'In all my life no man ever talked to me like that.'"

The democratic spirit of Mr. Wanamaker is refreshing; although many times a millionaire, he is a man among men, entirely free from the spirit of lordship, of supremacy. One has but to visit the great Sunday-school in Philadelphia of which he has been superin-

tendent for a number of years, to know that he rules without making any one feel that he is being ruled. Mr. Wanamaker's business career reads more like fiction than fact. He was born in that section of Philadelphia known in colloquial parlance as the Neck, near the place where the Schuylkill River empties into the Delaware River. When but a lad, his father died, and for years he knew the pinch of poverty. And yet from this lowly beginning, by faith in God and the acceptance of every honest opportunity to increase his capital, he has risen until his name is a household word, not only in Philadelphia but in other cities and other lands.

But few can hope to attain the success of Mr. Wanamaker, yet there is a business in which we may engage which will bring to us infinitely greater honor than that enjoyed by the merchant of Philadelphia. Jesus was only twelve years of age when he declared that he must be about his Father's business. Diligently did he pursue the work assigned him; determinedly he met and conquered tremendous obstacles; before him the mountains became a plain, and at last, amid the convulsions of nature, he triumphed gloriously. He finished the work, making the eternal redemption of the human race a certainty. He sought not for earth's riches, but for the hearts of men and women and children. By the million he has secured them—an inheritance greater than gold and silver or the cattle upon a thousand hills. His diligence and success have both been recognized and honored, and for two thousand years he has been heaven's Prince, standing, not in the presence of one of earth's kings, but in the presence of the King of kings.

To the followers of Christ is given no assurance of houses and lands or great possessions, but rather poverty. The poor of this world are the ones more often rich in faith and heirs of the kingdom. The Father's business takes precedence over the world's traffic and trade, and to pursue it with diligence means that one day, as did the Lord and Master, we shall stand in the presence of the King at whose right hand there are pleasures forevermore.

JOHN N. QUINN.

### Effect of Confidence

THERE is nothing which quite takes the place in a boy's life of the consciousness that somebody—his teacher, brother, sister, father, mother, or friend—believes in him.

One of the most discouraging things to a youth who is, apparently, dull, yet who is conscious of real power and ability to succeed, is to be depreciated by those around him, to feel that his parents and teachers do not understand him, that they look upon him as a probable failure.

When into the life of such a boy there comes the loving assurance that somebody has discovered him, has seen in him possibilities undreamed of by others, that moment there is born within him a new hope, a light that will never cease to be an inspiration and encouragement.

If you believe in a boy, if you see any real ability in him (and every human being is born with the ability to do some one thing well), tell him so; tell him that you believe he has the making of a man in him. Such assurance has often proved of greater advantage to a youth than cash capital.

There is inspiration in, "He believes in me."—*Success Magazine*.





# THE HOME CIRCLE

Many of life's sweetest and most helpful experiences are, often for mere want of thought, sacrificed by the uncourteous.—Mrs. E. G. White.



## My Choice

SHALL I tell you whom I love?  
Harken then awhile to me;  
And if such a woman move  
As I now shall versify,  
Be assured 'tis she, or none,  
That I love, and love alone.

Nature did her so much right  
As she scorns the help of art.  
In as many virtues dight  
As e'er yet embraced a heart.  
So much good so truly tried,  
Some for less were deified.

Wit she hath, without desire  
To make known how much she hath;  
And her anger flames no higher  
Than may fitly sweeten wrath.

Full of pity as may be,  
Though perhaps not so to me.

Reason masters every sense,  
And her virtues grace her birth;  
Lovely as all excellence,  
Modest in her most of mirth.  
Likelihood enough to prove  
Only worth could kindle love.

Such she is; and if you know  
Such a one as I have sung;  
Be she brown, or fair, or so  
That she be but somewhat young;  
Be assured 'tis she, or none,  
That I love, and love alone.

— William Browne.

## Floriculture for Girls

S. A. SMITH

**K**NOWING the value of a personal acquaintance with the beautiful things of nature, the Saviour, in warning the disciples against worldliness, said: "Consider the lilies of the field, how they grow; they toil not, neither do they spin: and yet I say unto you, That even Solomon in all his glory was not arrayed like one of these." Matt. 6:28, 29. He did not say, Consider the lilies of the field — how many petals, stamens, and pistils they have — merely, but the more important thing, *how they grow*.

The wise man also has made mention of the flowers many times in his songs. For instance: "For, lo, the winter is past, the rain is over and gone; the flowers appear on the earth; the time of the singing of birds is come, and the voice of the turtle is heard in our land." Song of Solomon 2:11, 12.

The prophet Isaiah, in speaking of the desolation that shall come upon the enemies of the church, wrote these words: "And thorns shall come up in her palaces, nettles and brambles in the fortresses thereof." But of the flourishing of Christ's kingdom, he said: "The wilderness and the solitary place shall be glad for them; and the desert shall rejoice, and blossom as the rose. It shall blossom abundantly, and rejoice even with joy and singing." If the blessings of the gospel can bring about this final restoration, and cause the desert places to blossom as the rose, may we not enjoy some of these blessings while living here below, and thus get, as it were, a foretaste of the beautiful things of the earth made new?

In the book "Education," page 119, the author, in speaking of the flowers, says, "When they [the children] gather the flowers, lead them to think why he spared us the beauty of these wanderers from Eden." The Creator saw fit to spare us some of the beauties of the first home, that we might have something with which to beautify our own homes to-day. He did not leave us fancy carpets and beautiful furniture that

would fade with the first ray of sunlight; but how many of us will sacrifice these beautiful things from Eden, the things which our Creator made and gave us, for those things which some mortal man has made? We must settle this question first before we attempt to keep flowers in our homes, for flowers must have plenty of sunshine, and not sunshine only but the showers also, both of which will ruin our rugs and carpets. Perhaps we can settle the question by reading again the words of the Saviour: "Consider the lilies of the field, *how they grow*."

As many lessons can be learned from the lily to-day as then. I am glad the Saviour did not say, Consider the lilies in the field, for in our climate we could have them for such a short time that the lessons they teach us might be forgotten during their long absence. But it is possible for us to have them with us all the time, and not the lilies only, but many others of these "wanderers from Eden."

Remembering again the words of the prophet Isaiah, why can we not all clean out the waste places about our homes, get rid of the thorns, thistles, and tares, which are Satan's work, "the result of degeneration," and have instead some of the plants which our Creator gave us, for "he never made a thorn a thistle or a tare." When the chilling blasts of autumn come, remove these little wanderers from the outside, place them where, with sunshine and artificial showers, we can still have them to cheer our homes through the long, dreary months of winter, and to remind us that he who created them still lives, even though apparently all without is dead. Thus, while bringing sunshine into our homes for the flowers, we will also bring sunshine into the lives of those around us, and getting the thorns, thistles, and weeds out of the gardens and lawns will help us to get them out of our own lives; for we must remember that the flowers never become so beautiful that the weeds do not want to associate with them, neither do the beautiful traits in our char-



acters ever become so beautiful that the ugly ones do not want to associate with them. Thus we can learn some of the lessons the Saviour had in mind when he said, "Consider the lilies of the field, how they grow."

Sometime I will endeavor to tell you how you can care for the flowers.

### Filling an Order

(Read at the Holmes Breakfast, Boston, Dec. 31, 1879.)

To Nature, in her shop one day, at work compounding simples,  
Studying fresh tints for Beauty's cheeks, or new effects in  
dimples,

An order came: she wiped in haste her fingers, and unfolded  
The scribbled scrap, put on her specs, and read it, while  
she scolded.

"From Miss Columbia! I declare! of all the upstart misses!  
What will the jade be asking next? Now what an order this  
is!

Where's Boston? O, that one-horse town out there beside the  
ocean!

She wants—of course, she always wants—another little  
notion!

"This time, three geniuses, A1, to grace her favorite city:  
The first a bard; the second wise; the third supremely witty;  
None of the staid and hackneyed sort, but some peculiar flavor,  
Something unique and fresh for each, will be esteemed a favor!  
Modest demands! as if my hands had but to turn and toss over  
A poet veined with dew and fire, a wit, and a philosopher!

"But now let's see!" She put aside her old, outworn ex-  
pedients,

And in a quite unusual way began to mix ingredients,—  
Some in the fierce retort distilled, some pounded by the  
pestle,—

And set the simmering souls to steep, each in its glowing  
vessel.

In each, by turns, she poured, she stirred, she skimmed the  
shining liquor,

Threw laughter in, to make it thin, or thought, to make it  
thicker.

But when she came to choose the clay, she found, to her  
vexation,

That, with a stock on hand to fill an order for a nation,  
Of that more finely tempered stuff, electric and ethereal,  
Of which a genius must be formed, she had but scant ma-  
terial—

For three? For one! What should be done? A bright idea  
struck her;

Her old witch-eyes began to shine, her mouth began to pucker.

Says she: "The fault, I'm well aware, with genius is the  
presence

Of altogether too much clay, with quite too little essence,  
And sluggish atoms that obstruct the spiritual solution;  
So now, instead of spoiling these by overmuch dilution,  
With their fine elements I'll make a single, rare phenomenon,  
And of three common geniuses concoct a most uncommon one,  
So that the world shall smile to see a soul so universal,  
Such poesy and pleasantry, packed in so small a parcel."

So said, so done; the three in one she wrapped, and stuck the  
label:

"Poet, Professor, Autocrat of Wit's Own Breakfast Table."

—John Townsend Trowbridge, author of "Darius Green and  
His Flying-Machine."

### Rules for Right Living

FORGET self.

Trust in God.

Never mistrust your friends.

Make every duty a privilege.

Pity the other person, never yourself.

Try to bring happiness to those who often seem neg-  
lected.

Work hard and pray harder, leaving the result with  
God.

Think much of the love of Christ, keeping patient  
and sweet under all circumstances.

Do not dwell on the mistakes or failures of the past,  
nor worry about the future, but make the best of the  
present, with firm faith in an overruling Providence.  
—Selected.



### For the Instructor Band of Mercy

#### Unique Gifts to Birds

**E**VERY one has seen birds and squirrels in the parks fed and coaxed with crumbs, nuts, and all such things, but a certain man who habituates Stuyvesant Square makes a unique gift to his little feathered friends. Nearly every day he passes through with a wad of cotton, and tears it up, scattering it bit by bit while the birds gather round him. Not a single piece is wasted. As the little pieces float through the air, the birds catch them and fly away, apparently delighted at the idea of free building materials.—*New York Press.*

#### The Cattle Train

SOMEWHERE above Fitchburg, as we stopped for twenty minutes at a station, I amused myself by looking out of a window at a waterfall which came tumbling over the rocks, and spread into a wide pool that flowed up to the railway. Close by stood a cattle train; and the mournful sounds that came from it touched my heart.

Full in the hot sun stood the cars; and every crevice of room between the bars across the doorways was filled with pathetic noses, sniffing eagerly at the sultry gusts that blew by, with now and then a fresher breath from the pool that lay dimpling before them. How they must have suffered, in sight of water, with the cool dash of the fall tantalizing them, and not a drop to wet their poor parched mouths!

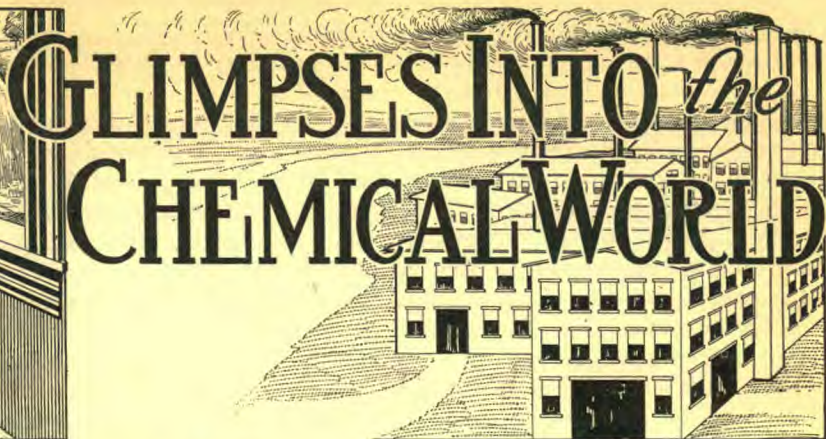
The cattle lowed dismally, and the sheep tumbled one over the other, in their frantic attempts to reach the blessed air, bleating so plaintively the while that I was tempted to get out and see what I could do for them. But the time was nearly up; and, while I hesitated, two little girls appeared, and did the kind deed better than I could have done it.

I could not hear what they said; but as they worked away so heartily, their little tanned faces grew lovely to me, in spite of their old hats, their bare feet, and their shabby gowns. One pulled off her apron, spread it on the grass, and emptying upon it the berries from her pail, ran to the pool and returned with it dripping, to hold it up to the suffering sheep, who stretched their hot tongues gratefully to meet it, and lapped the precious water with an eagerness that made little bare-foot's task a hard one.

But to and fro she ran, never tired, though the small pail was so soon empty; and her friend meanwhile pulled great handfuls of clover and grass for the cows, and having no pail, filled her "picking-dish" with water to throw on the poor dusty noses appealing to her through the bars. I wish I could have told those tender-hearted children how beautiful their compassion made that hot, noisy place, and what a sweet picture I took away with me of those two little sisters of charity.—*Louisa M. Alcott.*

"As daylight can be seen through very small holes, so little things will illustrate a person's character."





# GLIMPSES INTO *the* CHEMICAL WORLD

## Physical and Chemical Changes — No. 2

**S**INCE God first moved upon the waters, and caused the dry land to appear, the grass, herbs, and trees; since he commanded the waters to bring forth abundantly and the earth to bring forth the living creatures, there has been ceaseless activity, constant change. Plants germinate, grow, blossom, bear fruit, and die. Minerals disintegrate, and man passes through the varying stages of his existence. Change is everywhere.

But all changes, whether common or uncommon, are either of a physical or of a chemical nature. Those changes which do not affect the nature of the substance are known as *physical* changes. Those which change the composition of the substance are *chemical* changes.

If you turn the electric current onto the filament of an incandescent light, the filament becomes hot, glows, and emits a bright light. Turn off the current, and the filament cools, and is the same as it was before heating. Its nature was not affected; it is still a carbon filament; so the change that took place when the current was on was a *physical* one.



But if you hold a thread in the flame of a lamp, it, too, glows, and emits light. But when you attempt to remove it, you find it has been burned, has disappeared into the air, only the charred end being left. The thread no longer exists. Here a *chemical* change has taken place.

Expose in a camera a sensitive photographic plate to the bright sunlight for only one one-hundredth of a second, and a beautiful picture results. The chemicals on the plate are chemically changed. "The amount of change on the sensitive surface of the plate depends upon the intensity of the light that falls on it; more light comes from the lighter parts of the objects; and, therefore, the amount of chemical change is greatest in those parts of the plate on which the rays from the more lighted portions of the objects have impinged."

Water may be changed into steam by boiling, or into ice by cooling. But when water changes from one state into another, it does not change into another substance. The water is still water though its condition has changed. Here only *physical* changes have taken place.

If you magnetize a bar of iron, it will attract other pieces of iron, as nails or iron keys, to itself. It has a new property, but it is still iron. The change is a *physical* one. A stick of wood or a piece of coal put upon the fire is converted into ashes, smoke, and

gases. The wood or coal entirely disappears. There is therefore a *chemical* change. We eat bread. In time this bread becomes blood, as the result of a *chemical* change. It is the province of *physics* to deal with *physical* changes, and that of *chemistry* to deal with *chemical* changes.

Place some vinegar upon a piece of marble, and you will observe bubbles of gas escaping from the surface of the marble. A *chemical* change is taking place. Again, if you take a lump of starch and dissolve it in cold water, you have changed the condition of the starch, made a *physical* change in it. A lump of starch differs from a lump of sugar only in having more water in it than does sugar. But you could never in a lifetime get sugar from starch by merely mixing water and starch together. The molecule of starch must by some means be broken up, and two more atoms of hydrogen and one of oxygen (just the number required for a molecule of water) be allowed to enter the molecule of starch. Thus the molecule changes from starch to sugar. Such is a *chemical* change. In every *chemical* change the molecule is broken up as illustrated, and its identity destroyed. Chemistry tells you just what the change is, what substance was formed, and how it was formed. This science in its modern form is one of the youngest of the sciences; but it is one of the most important, because of its practical relation to the arts and industries. The term chemistry is thought to be derived from Chemia, an old name for Egypt. The term therefore signifies the Egyptian art, for chemistry was first practised in Egypt.

It is a trite but true saying that God is a God of law and order. Were this not so, there could be no science of chemistry. The chemist finds that the atoms and the molecules of every substance act as if they had received definite marching orders. They act according to certain laws, and under the same conditions always act in the same way. So constant are they in following a given course, that the chemist does not hesitate to predict what they will do under certain conditions. Atoms of a certain kind will readily unite with certain other atoms, but can not be persuaded under any known circumstances to unite with other substances; or they will unite with a given





number of atoms of that substance, and can not be persuaded to unite with more or less. An atom of hydrogen, for example, instantly binds itself to an atom of chlorine whenever opportunity offers, but will never, even under the most favorable circumstances, unite with an atom of gold.

As a person follows thoughtfully the workings of this unique force known as chemical affinity, one feels that one is in the presence of the Creator and Ruler of the universe. It was this appreciation of the constant working of an infinite God in the things of nature, that caused that great scientist, the first secretary of the Smithsonian Institution, Joseph Henry, one day when making an experiment, to say to a noisy assistant, "Be still, I want to ask God a question."

The cause for the union of atoms with each other is ascribed to an attractive force called *chemical affinity*. Those elements that differ most from each other generally have the strongest affinity for each other, that is, they will unite the most readily. Generally heat, light, electricity, or some chemical substance is necessary to cause the elements to combine; sometimes mere contact is sufficient. If a piece of potassium is floated upon a dish of water, a chemical reaction almost immediately takes place. The molecule of water ( $H_2O$ ) is broken apart, the oxygen and half of the hydrogen unite with the potassium, forming potassium hydroxide (KOH). The rest of the free hydrogen and the residue of the potassium are set on fire by the heat generated during the chemical change. So great is the affinity of potassium and sodium, kindred metals, for hydrogen and oxygen that these substances have to be kept constantly under naphtha, a liquid containing no water and no oxygen.

**Reagents: Sulphuric, Nitric, Hydrochloric, and Hydrofluoric Acids**

Nitrogen iodide, prepared by the action of iodine on ammonia, explodes violently on the slightest provocation. When dry, the tread of a fly, or the merest touch with a feather, is sufficient to cause an explosion, breaking up the molecules, and setting free the nitrogen and iodine atoms. Again, "mercury fulminate, a shining white crystalline substance, can not be kept in glass-stoppered bottles, for the mere friction between the stopper and the neck is sufficient to cause it to explode."

When one substance is used to act upon another and cause a chemical change or reaction, that substance is called a *reagent*. Sulphuric acid is a most important reagent. As iron is the basis of nearly all mechanical industries, so sulphuric acid lies at the foundation of the chemical arts. One chemist says that scarcely any of the products of civilized life have been brought to perfection without the use, directly or indirectly, of this acid; so the amount of its production indicates somewhat the status of the nation. It is estimated that Great Britain manufactures no less than a million tons annually. "By means of this acid the chemist, either directly or indirectly, prepares almost everything with which he has commonly to deal." It is employed extensively in the manufacture of common baking-soda, bone fertilizers, nitroglycerine, and in the refining of petroleum. "Directly or indirectly it is also employed in the preparation of compounds for bleaching, dyeing, printing, electroplating, telegraphy, galvanizing iron plates and wire, cleaning metals, making shoe-blackening (which consists of bone black, oil, sulphuric acid, sugar or molasses), glucose, mineral water, guncotton, and cellu-

loid." Ether is made by distilling alcohol in the presence of sulphuric acid. This acid is also used in "pickling coin. All coins pass through this process, which follows the annealing operation. The pickling hardens and cleanses the coins. After their removal from the sulphuric-acid bath they are dried in sawdust and passed on to the die machines which stamp the figures on the two sides."

This important acid is a thick, heavy, oily, sour, and corrosive liquid, without color or odor, if pure. You can readily see, then, that one of the first reagents to be purchased for chemical experiments is sulphuric acid. It has to be handled carefully, for it chars wood, cloth, and sugar, abstracting the water, or the elements of water, hydrogen and oxygen, from these vegetable substances, and leaving the black carbon. It has a violent action upon the flesh, and if gotten on the skin, it must be removed at once by copious washing with water.

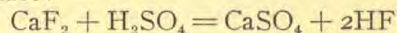
If the experimenter wishes to use a mixture of sulphuric acid and water, he pours the acid into the water in a very thin stream, never the reverse. If he should pour the water into the acid, so much heat would be likely to be generated that the test-tube or glass containing the mixture would break.

Other important reagents are ammonia, nitric acid, and hydrochloric acid; the last is a constituent of gastric juice, the digestive agent of the stomach. Aqua regia (royal water) is a reagent formed by mixing nitric and hydrochloric acid. These two together will dissolve compact gold, though this metal is unaffected by either one of them if used alone, or by any other common acid.

Hydrofluoric acid, a dangerous poison, will dissolve glass, while no other acid will affect it. This acid is therefore used in etching the gradations on thermometer tubes, and in ornamenting glass objects with etched patterns, such as globes for gas chandeliers, and articles of table glassware. In graduating a thermometer tube the glass is first coated thinly with wax and then the divisions scratched through the coating with a sharp needle, laying bare the glass. In this condition the tube is exposed for a time to hydrofluoric acid gas. When the wax is removed, the divisions are found etched on the glass.

Since this acid has such strong affinity for the constituents of glass, it must be stored in vessels of lead, platinum, leather, vulcanite, or hard paraffin. Wounds caused by it on the flesh are very difficult to heal. An eminent French chemist, Professor Nickles, died from injuries received by the accidental inhalation of hydrofluoric acid vapor while studying the properties of the substance.

In 1788 the French Academy of Sciences was presented by Puymaurin with an "elegant glass plate, upon which there was a beautiful fluorine etching representing Chemistry and Genius weeping at the tomb of Scheele, who had contributed much to the history of hydrofluoric acid. It was he who recognized this acid as a special one, and gave it the name of fluorine acid. He prepared it from fluor-spar ( $CaF_2$ ) by the addition of sulphuric acid ( $H_2SO_4$ ). The hydrogen atom of the acid quickly seizes upon the fluorine in the mineral, and hydrofluoric acid (HF) results. The following equation indicates the reaction that takes place:—



Our next lesson will deal with some of the common gaseous elements and their compounds. F. D. C.





**Overhanging Pendulum on Electric Clock**



PERFECTION as a timekeeper is claimed for a clock recently made as an experiment in St. Louis, which is operated by electricity instead of gravity. The pendulum is swung over the works instead of under them, and its action is controlled by an electric lever. Every time it swings backward

and forward, a pin, inserted in the pendulum ball, engages the fork of the movement, on the order of a chronometer escapement. The pallet, which is fastened to the fork, will move the escape wheel every second, as the pendulum swings back and forth. The current operating the lever which governs the pendulum is always the same, and therefore the movement of the clock can not vary the fraction of a second.—*Selected.*

**Electric Irons Used for Repairing Furniture**

It may be possible for the housekeeper of the future to iron out the scratches and dents in her furniture as she does the creases and wrinkles in her clothing. By the use of an electric iron and a specially prepared paste, a firm of New York furniture manufacturers are now able to do all manner of minor repairing of this character, economizing thereby in both labor and material. The process simply requires the filling of the crack or nick with paste, after which an ordinary electric flat-iron is passed over the spot thus treated. This causes the wood to swell, and the rubbing or smoothing with the iron restores the original surface. The result is that the damaged piece of furniture regains its original finish.—*Selected.*

**A Big Tree**

A SECTION of one of the largest and oldest trees in the world, a remarkable example of one of the big trees of California, a giant Sequoia, from the western

slope of the Sierra Nevada Mountains, from the Kings River grove, at an altitude of 8,000 feet, is shown in the illustration. The big tree was 300 feet tall, symmetrical, and entirely free of limbs for nearly 200 feet. Eight feet from the ground the trunk was 62 feet in circumference, while



THIS TREE SPROUTED NEAR THE TIME OF THE FALL OF ROME

at the ground it measured 90 feet. The section shown in the photograph was cut twelve feet from the base, and is four feet in thickness, weighing 30 tons. The specimen is 16 feet two inches in diameter, measured inside the bark, which in places is nearly a foot in thickness. The small cards which are seen on the tree

mark the successive centuries and give the growth of the tree during each hundred years. The rings show that the tree was 1,341 years old when cut down, and began its life A. D. 550, or only 74 years after the fall of Rome.—*Technical World.*

**A Famous Hippopotamus**

THE body of Caliph, who was for thirty years the undisputed hippopotamus king of Central Park, New York, has just been mounted at the Museum of Natural History in that city. Caliph was the largest and most famous hippopotamus in the world, being twelve feet in length, and weighing four tons. The great skin, which contained one hundred square feet, was fitted over a manikin cast obtained from a modeled figure of the big animal. This is the first hippopotamus to be mounted by the new method of plastic taxidermy, and the work was executed by Frederick Blaschke. Caliph's six sons are now distributed among the leading zoological gardens of the world, one at present in the New York Zoological Park, having been sold for three thousand dollars. They are the only hippopotami born in captivity that have lived and thrived. Caliph was captured in the River Nile in infancy, in 1877.—*Harper's Weekly.*



From Harper's Weekly

CALIPH, THE CHILDREN'S FRIEND

**Only Woman Physician in the Country**

DR. MARY EDDY, of American parentage and reared in Syria, has the distinction of being the only woman physician in the Ottoman empire.

Armed with diplomas from three medical colleges, she appealed several years ago to Alexander W. Terrell, then American minister to Turkey, to help her get the governmental license to practise. It was no easy task. The sultan's consent had to be obtained first, and after that ordeal was over, Dr. Eddy had to face an examination by a score of the most distinguished physicians of the empire. Mr. Terrell, in describing the incident in the *Interior*, says: "The first question was in French, and uttered in a contemptuous tone: 'Who are you?' To their astonishment, she answered in the Arabic language: 'I am of you, and from among you.'"

She was examined without intermission for six hours. Tired with receiving correct answers, one of the inquisitors, in the hope of intimidating her, called out: "That answer is wrong." She asked for certain medical books and with striking calmness said: "If all these authors do not sustain my answer, I will withdraw my application to practise medicine." Her American pluck won her the day, and she was given the long-desired privilege.

She is now devoting her life to the curing of blindness, a disease to which the Moslems fall easy prey, on account of the shifting sands lifted and blown easily about by the winds. Her services during the Armenian massacres have given her a place in the hearts of the natives second only to that of their prophet, Mohammed.—*Success.*





Children of China.



Indian Child, Central America.



The Little Helper, Japan.



Two Little Girls in New Guinea.

# CHILDREN'S PAGE

## The Feast

"O, won't you have a piece of nice mince pie?  
And here's a bit of lobster salad, dear;  
These oysters, fried, you'll surely like to try;  
And do you take your coffee strong and clear?"

Much more I heard behind the maple tree  
About ice-cream and caramels and cake.  
I thought, "What careless mothers there must be,  
When children these forbidden dishes take!"

I passed the open gate and entered there,  
The Land of Make-believe — enchanted land!  
And Marjorie, with hospitable air,  
Gave me a generous dish of clean white sand.

— Emma Endicott Marean, in *American Kitchen Magazine*.

## An Unusual "Bum"

J. R. LEADSWORTH, M. D.

**T**HE hour of midnight was approaching. I had just boarded the last interurban car, which was soon to leave for a nearby city. Presuming there was no other occupant in the car, the most comfortable corner was selected for a seat — the vague hope being entertained that a "wee cat-nap" might be had before reaching my destination.

Hardly was I comfortably settled when from under a seat in the farther corner of the car crawled a dog — an ordinary yellow spaniel dog. With characteristic Western license, this dog made its way over to my corner of the car, leaped upon the cushion near by, and placed his paw on my knee with an air which seemed to say, "Let's get acquainted." A few friendly pats, and we were as good as old friends. Around the neck of our new-found dog friend was a brass collar, attached to which were neatly arranged ribbon bows. Suspended from the collar was the license tag. On one side of this was the date of expiration of the license, while on the opposite side was cut in the metal plate the word "Bum." This, then, we inferred, was the name of our dog acquaintance.

Not much time was given to speculate over the significance of this unusual name before the bell gave two rings, and the car was off. Soon the conductor passed along collecting the fares. He saw that the dog and I were quite confidential. In his frequent contact with people he had probably seen some of the unhappy results of misplaced confidence. Anyhow, the dog's past history was not unknown to him. He seemed also to have made up his mind that if I were "taken in" it would be with open eyes. He said:—

"And so you and 'Bum' have made friends, eh? Well, I'm not surprised. He's always looking for a new friend; some one he can work for a piece of candy or other titbit. He does not seem to care so much for people after they get to know him, but rather uses them to further his ends. Why, do you know that dog is the worst street-car 'bum' in California? He has been offered good homes a plenty, where he could fare better than most dogs. But he will not stay. After a day or two at one place, he gets tired of such a monotonous life, and returns to his old habit of riding on the street-cars. He is well known by all the motormen and conductors. He knows where the cars should stop, and if no one is there to get on

when he wants a ride, he will give the motorman the signal to stop. He will probably ride the car for half a day or longer at a time. Suddenly, when one bell is rung for a stop, he takes his position near the steps, and will be the first to alight. Perhaps he will halt the next car passing from the opposite direction, and have it take him on for several hours' ride. Occasionally he disappears for a few days, but it is not long before he is back and at his old business of 'bumming.'

Naturally enough we looked upon "Bum" with a degree of suspicion after that recital. But this suspicion was tempered with charity when it was considered that this poor dumb brute was guilty only of getting something for nothing — of living by his wits. On the other hand, countless numbers of mankind — the crowning piece of God's handiwork — are constantly scheming to gain a livelihood, or acquire riches, or otherwise make use of that which does not belong to them, without so much as lifting their finger in return. Perhaps this dog has acquired the habit from those of whom we might expect better things.

### Two-Edged Jokes

[The following article was written by the editor of the *Boys' World*; and though Hallowe'en is past, the first of April and other such days are coming, so the article is still timely.]

A MAN who thought he was funny stretched a rope across the path of his friend in a dark way. Then he hid in the thicket to see the tumble. His friend fell all right enough, but broke his leg, was out of work for six weeks, and had a heavy doctor's bill to pay.

A boy who didn't believe in ghosts drew a sheet over his head and stood at the entrance to an alley to frighten a little girl who was afraid of "things in the dark." He succeeded, but the little girl, from the shock, became insane.

Some high-school boys thought it would be very humorous to mark up the corner-stone of their school with red paint. Of course, after they had had their "joke," the paint could be washed off. However, the corner-stone was of rare marble, the paint had a disastrous chemical action upon its surface, could not be removed, and the beautiful block was mutilated for all its days.

This is the season of the year when Hallowe'en is celebrated. The evening is that of the thirty-first of



October. In Old England, the England of which America is the offspring, it was customary on that evening to crack nuts, duck for apples in a tub of water, have songs and jokes, and manufacture innocent jack-o'-lanterns from pumpkins. All the jokes of that time had one edge, which is the way every healthy joke should be.

But is it not a two-edged joke to tear down a neighbor's gate that evening and carry it into the ditch? The joker has the laugh over the neighbor's missing the gate in the morning—the neighbor has the expense of labor and possibly money in getting it back into place again. The joker has laughed, but the neighbor has paid—that produces a two-edged joke, and hardly a fair one.

A barber misses his sign-pole in the morning, and finds it in the alley, so badly scratched that repainting is necessary. The joker has had his laugh, but the barber must pay. The sidewalk of the town is turned over, and the joker, unknown, smiles, but the town must pay for its being replaced.

Is a joke an honest joke when it causes others pain or expense? Is not the one-edged joke the best—the joke which brings only smiles and makes the way of work a little brighter?

## THE CHILDREN'S COOKING CLASS

CONDUCTED BY D. D. FITCH

### Toasts — No. 11

**T**HE basis of all the toasts that we will consider in this article is zwieback. Zwieback is a German word meaning twice baked. For the preparation of this palatable article good stale bread should be used. It may be cut thin or thick, to suit the fancy of the one making it. Put these slices side by side on a shallow baking pan or roll baker, and place in a moderate oven.

Unless you are accustomed to the heat of the oven, you should watch it very carefully, as in some ovens it may either burn on the side, bottom, or top, and not be baking at all on the other side. The desirable oven for this work is one that will toast the zwieback through and through without its having to be moved. If, however, this is not the case, the slice should be turned over, or the pan turned around, so that it will toast equally on all sides at the same time.

Rightly prepared, zwieback is one of the most easily digested and palatable of foods.

**CREAM TOAST.**—Heat milk or cream, add a pinch of salt, and pour over slices of zwieback which have been placed in the dish in which the toast is to be served.

**GRAVY TOAST.**—Moisten the zwieback with a little hot water or milk, and pour over it a thin cream gravy made by adding a little salt and flour-thickening to milk, which has been heated in a double boiler and allowed to cook about five minutes.

**SNOWFLAKE TOAST.**—Proceed as for gravy toast, only just before serving, mix the gravy with the beaten whites of an egg and pour on the toast.

**VELVET TOAST.**—Proceed as for gravy toast, only just before serving, mix the gravy with the beaten yolk of an egg.

**EGG ON TOAST.**—Moisten the zwieback with hot

water or milk, then slip a poached egg on top of it. A spray of parsley placed beside this will make it more attractive.

**FRUIT TOAST.**—Moisten the zwieback with hot water, and pour over it a sauce made by thickening one pint of fruit juice—grape, blackberry, strawberry, or other fruit—with two teaspoonfuls of corn-starch rubbed smooth in a little cold water. Allow this to cook until it is semitransparent and then pour over the slices of zwieback.

**PRUNE TOAST.**—Prepare the zwieback by moistening with hot milk. Then pour over it a dressing made by pressing stewed prunes through a fine sieve, and



reheating them just before serving on the zwieback.

**TOMATO TOAST.**—Strain stewed tomatoes through the fine colander used for sifting the prunes, reheat, thicken with flour-thickening, season, and serve.

**LENTIL TOAST.**—Press stewed lentils through a fine colander, and add them to an equal quantity of thin cream sauce, season with salt, reheat, and serve.

### Uses of Sour Milk

It is in the intestine, especially in the large intestine, that the microbes of putrefaction are found in abundance. They act upon the waste organic matter, splitting it up, as the chemical expression is, into simpler compounds, forming, during the process, many that are poisonous to the system if absorbed. They are believed to cause not only many of the minor ills of life, but also some very serious ones, and to add to the gravity of other diseases. Professor Metchnikoff of Paris even attributes to their action the fact that we do not live as long as we ought, for he thinks that these poisons help to produce the hardening of the arteries, which causes so many of the manifest ills of old age.

On the principle of setting a thief to catch a thief, he proposed to arrest this putrefactive process in the intestine by introducing bacilli that manufacture lactic acid, in the presence of which the other bacteria can not live, or at least can not flourish.

The souring of milk is due to the presence of the bacilli which manufactures lactic acid, and buttermilk owes its acidity to the same cause.

(Concluded on page 15)





M. E. KERN . . . . . Secretary  
MATILDA ERICKSON . . . . . Corresponding Secretary

## Society Studies in Bible Doctrines

### No. XL — The Millennium

**SYNOPSIS.**—"Millennium" means a thousand years, and is a term applied to the period of that length mentioned in Revelation 20. It is ushered in by the coming of Christ and the first resurrection, and closes with the descent of the New Jerusalem and the second resurrection. During this time the earth will be depopulated, the wicked having been slain by the coming of Christ and the righteous having been taken to heaven. Thus Satan and his host will be bound on the earth.

#### Questions

1. What does "millennium" mean?—It is a combination of two Latin words: *mille*, meaning a thousand, and *annus*, meaning year; so it means a thousand years.
2. Where alone is it mentioned in the Bible? *Rev. 20: 2-7.*
3. With what event is it ushered in? *Rev. 20: 6; 1 Thess. 4: 16, 17; 1 Cor. 15: 52.*
4. With what event does it close? *Rev. 20: 5, 7; Zech. 14: 4, 5.*
5. What will be the condition of the earth during the millennium? *Jer. 4: 23-28; 25: 33.*
6. Where will the saints be? *1 Thess. 4: 16, 17; Rev. 20: 4.*
7. Where will the wicked be? *Isa. 26: 21.*
8. Where will Satan and the wicked angels be? *Rev. 20: 2, 3, 10; Eze. 28: 18; Jude 6.*

#### Notes

3. When Satan is bound, there can be no temptation; therefore he is not now bound and has not been since man has been on the earth: and as sin is to be on the earth to the end of time,—even more and more as the end approaches (2 Timothy 3),—it is evident that Satan is unbound till then. Therefore his binding must take place at Christ's coming, when the saints are all removed from the earth, and the wicked are destroyed by the brightness of his coming, and the earth is left without human inhabitant. Then, just as in Ps. 107: 10 some are mentioned who are bound by the circumstances of affliction, so Satan is bound by the circumstances—none left on whom he can exercise his arts and wiles.

4. It will be readily seen that since the coming of Christ determines the first resurrection and the beginning of the millennium (1 Thess. 4: 16), and since there are a thousand years before the second resurrection,—that of the wicked dead (Rev. 20: 5),—therefore the millennium ends with the second resurrection.

"As the New Jerusalem, in its dazzling splendor, comes down out of heaven, it rests upon the place purified and made ready to receive it, and Christ with his people and the angels, enters the holy city."—*Great Controversy*, page 663.

5. "The Revelator foretells the banishment of Satan, and the condition of chaos and desolation to which the earth is to be reduced; and he declares that this condition will exist for a thousand years. . . . That the expression, 'bottomless pit,' represents the earth in a state of confusion and darkness, is evident from other scriptures. Concerning the condition of the earth 'in the beginning,' the Bible record says that it 'was without form, and void; and darkness was upon the face of the deep.' [Rev. 2: 1-3: "bottomless pit" has in the original the same word which in Gen. 1: 2 is translated "deep."] . . . Here is to be the home of Satan with his evil angels for a thousand years. Limited to the earth, he will not have access to other worlds, to tempt and annoy those who have never fallen. It is in this sense that he is bound. There are none remaining upon whom he can exercise his power."—*Great Controversy*, pages 658, 659.

## Missionary Volunteer Reading Courses

### Senior No. 4 — Lesson 7: "Successful Careers," Chapters 30-34

**NOTE.**—When it seems hard to find time for reading, let us remember Henry Wilson's experience. We would, however, not recommend the reading of as many books before twenty-one as young Wilson devoured. Maria Mitchell once said of herself that she was "born of only ordinary capacity, but of extraordinary persistency."

#### Test Questions

1. What do you consider the secret of Maria Mitchell's success? What kind of books did she read when a child? What discovery did she make? With what college did she connect in 1865?
2. Name the first book Henry Wilson ever owned. How did he obtain his education? Notice in what various capacities he served his country in time of need.
3. Tell how the telegraph was invented. Compare the inventor's experience with that of C. W. Field. Where was the first telegraph line built? When? What was the first message sent?
4. Mention several things which indicate David Livingstone's desire for learning. Why did he go to Africa as a missionary? What discoveries did he make? How do Robert Moffat, Mr. Bennett, and Mr. Stanley enter into Livingstone's biography?
5. In what industries did Peter Cooper achieve marked success? What opinion did he hold regarding the importance of an early education? Compare his philanthropic work with 1 Tim. 6: 17-19.
6. How may we profit by the story of Maria Mitchell's influence in Vassar? by the kindness shown by Mr. and Mrs. Eastman to Henry Wilson?

#### Notes

**LIVINGSTONE.**—There is one marvelous story connected with Livingstone's death, the like of which has never been written on the scroll of human history. On the night of his death he called for Susi, his faithful servant. After Susi had tenderly ministered to the dying man's needs, Livingstone said: "All right; you may go now," and the faithful black reluctantly left him alone. Early the next morning, May 1, Susi and Chuma entered the grass hut at Ilala. The candle was burning, but the greater light of life had gone out. The great master, as they called him, was on his knees before his God. They dared not touch him lest they should disturb the privacy of his prayer. But he did not stir; then one of them, Matthew, softly came near and gently laid his hands upon his cheeks. It was enough; the chill of death was there. The great father of Africa's dark children was dead, and they were orphans.

They rudely embalmed the body of him who had been their savior. They tenderly opened his chest and took out his heart. This they reserved for his beloved Africa. The heart that for thirty-three years had beat for her welfare must be buried in her bosom, and under the *moula* tree at Ilala that heart was deposited. Then the remains were sent to his native country. Long and earnestly they toiled in the preparation. It took a march of nine months before they could reach Zanzibar, from which place the body would be shipped. They encountered many difficulties, but never fainted nor halted until love and gratitude had done all that could be done. They laid down at the feet of the British consul on the twelfth of March, 1874, all that was left of Scotland's great hero. His body was taken to England, and in the shrine of Britain's greatest burial-place, Westminster Abbey, was laid his precious dust.

**FREE-SOIL PARTY.**—At the presidential nominations in 1848, the leaders refused to commit themselves on the subject of slavery. A number of Whigs and northern Democrats who supported the Wilmot Proviso, dissatisfied with the action of the conventions in regard to slavery, resolved to form a new party. A convention of these, held at Buffalo, formed the "Free-soil Party."

**OPIMUM IN CHINA.**—No country has escaped the ravages of the opium curse; but perhaps none has suffered more than China. One of her proverbs says, "Eleven out of every ten use opium." It first came to China in the thirteenth century. In 1757 the East India Company monopolized the opium traffic, and made that fatal abuse of the Chinese a great money-making enterprise. Soon the trade increased five hun-



dred per cent. China vainly legislated against its importation, and in 1839 she became so desperate that she destroyed ten million dollars' worth of opium. This plunged her into a war with England, who, at the point of the bayonet, forced her to permit the traffic. Mrs. H. Taylor says: "During the entire reign of Queen Victoria, opium was exported from India at the rate of one-half ton every hour, day and night. Almost all this found its way to China."

**THE COURAGE OF HIS CONVICTIONS.**—After Mr. Henry Wilson was elected to the United States Senate, he gave his friends a dinner at a noted Boston hotel. The table was set with not a wine-glass upon it. "Where are the wine-glasses?" asked several, loud enough to remind their host that some of his guests did not like sitting down to a wineless dinner. "Gentlemen," said Mr. Wilson, rising and speaking with a great deal of feeling, "you know my friendship for you and my obligations to you. Great as they are, they are not great enough to make me forget the rock whence I was hewn and the pit whence I was dug. Some of you know how the error of intemperance overshadowed my youth. That I might escape, I fled from my early surroundings and changed my name. For what I am, I am indebted under God to my temperance vow and my adherence to it. Call for what you want to eat, and if this hotel can provide it, it shall be forthcoming. But wines and liquors can not come to this table with my consent, because I will not spread in the path of another the snare from which I escaped." Three rousing cheers showed the brave senator that men admire the man who has the courage of his convictions.

#### Note to Society Leaders

It is planned to have a society lesson on the first books in the Junior and Senior Reading Courses the latter part of December. As leaders, you will doubtless desire to know this, so that you can be collecting choice material for this program as you read the Book of books. Ask others to do the same.

Some time ago we suggested that each society have what might be called an educational secretary, and promised to say more about the duties of such an officer later. We would suggest that your educational secretary keep a list of all the young people in your church (not society members only) who take one of the Reading Courses. He should see them frequently, that he may know just how each individual is getting on with the work, and he should do all he can personally to encourage each to keep pace with those who are determined to complete the work promptly. It might be well to allow the educational secretary about five minutes at each society meeting in which to present his cause. It is obvious that the secretary should be an enthusiastic member of one reading circle, and, if possible, of both.

#### Junior No. 3 — Lesson 7: "How the World Is Clothed," Pages 162-192

NOTE.—Many places are mentioned in this week's reading, and we hope that not one Junior will fail to locate them.

#### Test Questions

1. What country makes more shoes than any other? What is the daily output of one of its factories?
2. Explain why it used to take a day and a half to make boots that can now be made in four minutes.
3. How were shoes made in America during the seventeenth century? If you should visit a shoe factory to-day, what would you see? How are the different parts of the shoe made? How are the buttons put on?
4. Name twelve or more animals whose skins are used for making gloves.
5. For what is Naples noted? Leipzig? Frankfort? Fulton County, New York?
6. What would interest you most in a glove factory? How many different persons are required to make one pair of gloves?
7. What was the Hudson Bay Company? Where did people get furs during the Middle Ages?
8. Where do we get ermine? chinchilla? Persian lamb? sealskin? beaver? bear? platypus? coypu?
9. What do the hunters at the different trading stations get in exchange for their furs? What is used instead of money?
10. What does Mr. Carpenter say about the beaver

that you did not already know? the mink? the sea otter? sable? ermine?

11. How much did the United States have to pay Russia for Alaska? Was it a good bargain for us? If so, why?

#### Note

In the island of Capri in the Bay of Naples the peasants wear shoes with straw soles, which enable them to climb the stony paths up the hillsides without slipping. Some of the girls and women wear wooden sandals with a bright leather vamp laced with black. These slip up and down as they walk or run. In Germany the best shoes are made from American lasts. In Leipzig there is a "Sorosis" shoe store, which is patronized by the Americans and English.

#### Flash-Lights on Missionary Volunteer Work

At a temperance rally given by the Missionary Volunteer society at Ringgold, Nebraska, more than forty signed the temperance pledge.

Sixteen young people in Southern Idaho have provided themselves with books for the purpose of preparing to take the Standard of Attainment examination.

The young people in North Dakota, at their camp-meeting, raised one hundred fourteen dollars for a tent to be used in the Southern field.

During the first quarter of this year the Missionary Volunteers in Victoria, Australia, besides the work indicated by their report in the summary, made six articles for missions, distributed one thousand ninety-three text-cards, and sent fourteen bouquets to hospitals.

"During the first quarter of this year four hundred fifty-nine small bunches of flowers and four hundred eighty-three text-cards have been given to the sick by one society. Others are also engaging in this work. Those who go to the 'Old People's Home' spend some time in singing and reading to the inmates. Two persons in one street are now studying this message and searching for light as a result of systematic tract lending. Children of other denominations are attending some of our meetings and taking part in the work. We trust they will be influenced aright and sometime take their stand with this people." So writes the Missionary Volunteer secretary of New South Wales, Australia.

The Missionary Volunteers in Kansas are sending yearly subscriptions of the INSTRUCTOR to sixty public libraries.

The Missionary Volunteer society in Pittsburg, Pennsylvania, is working hard to provide a library for the church.

The Indiana secretary writes: "The INSTRUCTOR has been placed in eleven public libraries. We purpose to make the plan a permanent feature."

"Our young people," writes the secretary of Northern Illinois, "are selling mottoes to raise money to build a church."

The society at Battle Creek, Michigan, is raising one hundred dollars toward a missionaries' home in China.

The Missionary Volunteers in Graysville, Tennessee, are supporting a native teacher in Africa.

The society in Kentucky has been helping to make needed improvements in their church.

The society in Memphis, Tennessee, assisted in the tent effort this summer, by helping in the singing, distributing leaflets, and inviting people to the meetings.





## IX — Burial and Resurrection of Jesus

(November 26)

LESSON SCRIPTURES: Matt. 27:57 to 28:4; John 19:38 to 20:1; Mark 15:42 to 16:4; Luke 23:50 to 24:2.

MEMORY VERSE: "O death, where is thy sting? O grave, where is thy victory?" 1 Cor. 15:55.

### The Lesson Story

1. The disciples of Jesus had not believed he would die. They had seen him do such mighty works, and had seen him escape so many times from his enemies, they felt sure he would save himself from the death of the cross. When they heard his death-cry, saw his head droop, and saw his eyes closed in death, they were forced to believe he was really dead, and they mourned for him as for their best friend. When they saw him die, they did not believe he was the Christ, but they longed to have him with them again, and they loved him still.

2. The disciples wished to bury their Lord, but he had died as a criminal, and they did not know how to gain possession of his body. The disciple John and the women from Galilee still lingered near the cross, wishing they could give the Saviour an honored burial, but they felt sure the priests and Pilate would not consent to let them take him away.

3. "When the even was come, there came a rich man of Arimathæa, named Joseph, who also himself was Jesus' disciple," "but secretly for fear of the Jews." Joseph was an honored counselor among the Jews, "and he was a good man, and a just." When he knew that Jesus was dead, he went boldly to Pilate and begged that he might have the body of Jesus.

4. "And Pilate marveled if he were already dead: and calling unto him the centurion, he asked him whether he had been any while dead." Pilate was surprised to know that Jesus had died so soon, for he had never heard of one dying who had been on the cross but six hours. Persons who were crucified often lived a number of days; but it was not the pain Jesus suffered that caused his death. It was the sins of a wicked world that crushed out his life, and caused his death-cry of agony. When the soldiers pierced his side, that made his death sure, for had he not been already dead this would have caused him to die instantly.

5. When Pilate knew that Jesus was dead, he gave his body to Joseph. "He came therefore, and took the body of Jesus. And there came also Nicodemus, which at the first came to Jesus by night, and brought a mixture of myrrh and aloes, about an hundred pound weight. Then took they the body of Jesus, and wound it in linen clothes with the spices, as the manner of the Jews is to bury."

6. With gentle hands these good men removed the bruised body of Jesus from the cross and prepared it for burial. "Now in the place where he was crucified there was a garden; and in the garden a new sepulcher, wherein was never man yet laid." This sepulcher belonged to Joseph; but he thought nothing he had was too good for Jesus, and he laid him "in his own new tomb, which he had hewn out in the

rock," after the body was wrapped in a clean linen cloth with the spices used in embalming the dead. "And he rolled a great stone to the door of the sepulcher, and departed."

7. "And that day was the preparation, and the Sabbath drew on. And the women also, which came with him from Galilee, followed after, and beheld the sepulcher, and how his body was laid. And they returned, and prepared spices and ointments [more perfectly to embalm the body of Jesus]; and rested the Sabbath day according to the commandment."

8. "Now the next day, that followed the day of the preparation, the chief priests and Pharisees came together unto Pilate, saying, Sir, we remember that that deceiver said, while he was yet alive, After three days I will rise again. Command therefore that the sepulcher be made sure until the third day, lest his disciples come by night, and steal him away, and say unto the people, He is risen from the dead: so the last error shall be worse than the first. Pilate said unto them, Ye have a watch: go your way, make it as sure as ye can. So they went, and made the sepulcher sure, sealing the stone, and setting a watch."

9. The grave of Jesus was sealed by stretching cords across the great stone at the door. The cords were fastened to the rock and sealed with the Roman seal. Then a guard of one hundred soldiers was appointed, to watch the grave day and night, to make sure that his body was not stolen away. The priests planned to keep Jesus in the tomb forever, but his Father had declared that he should not be left in the grave, and that his flesh should not see corruption. Angels were watching for the moment to come when they might welcome their Lord as he came forth a conqueror over death and the grave.

10. "And when the Sabbath was past, Mary Magdalene, and Mary the mother of James, and Salome, had bought sweet spices, that they might come and anoint him." Mary Magdalene reached the tomb first, for it was "yet dark" when she reached the sepulcher; but before this, "behold, there was a great earthquake: for the angel of the Lord descended from heaven, and came and rolled back the stone from the door, and sat upon it. His countenance was like lightning, and his raiment white as snow: and for fear of him the keepers did shake, and became as dead men."

11. An earthquake marked the hour when Jesus died, and another marked the time of his resurrection. The angel, who had come swiftly from heaven, called Jesus, and the Son of God came from Joseph's tomb proclaiming, "I am the resurrection, and the life." "I am he that liveth, and was dead; and, behold, I am alive forevermore, Amen; and have the keys of hell [the grave] and of death."

### Questions

1. Did the disciples believe Jesus would die? Why not? Of what did they feel sure? How did they feel as they heard his death cry? Did they still believe he was the Christ? For what did they long?

2. After Jesus was dead, what did his disciples wish to do? What hindered them from doing as they wished? Who lingered near the cross after his death?

3. What rich man had become a believer in Jesus? Where did he live? What honorable position did he hold? Why had he not confessed that he was a disciple of Jesus? To whom did he go after Jesus died? How did he go? For what did he beg?

4. What caused Pilate to wonder? Whom did he



call? What question did he ask? Why was Pilate surprised when told that Jesus was dead? Why did the Saviour die so much sooner than others who were crucified? What made his death sure?

5. How did Pilate treat Joseph's request? When permission was granted, what did Joseph do? Who went to the cross with him? What did Nicodemus bring? When had he seen Jesus before? How was the body of Jesus prepared for burial?

6. How was Jesus taken from the cross? What was near the place where Jesus was crucified? What was in this garden? To whom did it belong? How was it made? Why did Joseph not keep it for himself? What was placed at the door of the sepulcher?

7. What day was drawing on as Jesus was buried? Who followed his body to the grave? What did they behold? As they returned to their homes, what did they do? Why? What did they do on the Sabbath? What commandment did they thus keep?

8. While the women were resting, where did the priests and Pharisees go? What did they remember? What command did they ask Pilate to give? Why did they wish him to do this? What did Pilate tell them to do? How did they carry out his order?

9. How was the grave of Jesus sealed? How large was the guard appointed to watch the grave? How were they to make sure that the body of Jesus was not stolen away? What did the priests plan to do? What had God declared should take place? Who were watching at the grave besides the Roman guard?

10. How long did the women wait before going to embalm the body of Jesus? Who came to the tomb first? How early did she arrive there? What had taken place before she came? Who descended from heaven? What did he do? Describe his countenance and his clothing. What effect did his appearance have upon the keepers?

11. What marked both the death and resurrection of Jesus? Who called Jesus forth to life? What did our Saviour proclaim as he left the tomb? How long will Jesus live? What did he bring with him from the grave? What will those keys unlock? Repeat the memory verse.

## THE YOUTH'S LESSON

### IX — Burial and Resurrection of Jesus

(November 26)

LESSON SCRIPTURES: Matt. 27:57 to 28:4; John 19:38 to 20:1; Mark 15:42 to 16:4; Luke 23:50 to 24:2.

LESSON HELPS: "Desire of Ages," chapters 80, 81; "Spirit of Prophecy," Vol. III, chapter 13; *Sabbath School Worker*.

PLACES: On Calvary; in Jerusalem.

PERSONS: Our Lord; disciples; Joseph of Arimathea; Nicodemus; Pilate; the holy women; the angels.

MEMORY VERSE: I Cor. 15:55.

#### Questions

1. After the death of Jesus, who came forward to assist in his burial? John 19:38.

2. Who was Joseph? Luke 23:50; Matt. 27:57; note 1.

3. When Joseph asked for the body of Jesus, concerning what did Pilate marvel? Mark 15:44, 45.

4. Who joined Joseph in preparing the Saviour's body for burial? What did each furnish? What did they do with his body? Verse 46; John 19:39, 40; note 2.

5. In what was the sepulcher hewn? How was it closed? Matt. 27:60.

6. What indicates that these preparations were considered temporary? John 19:41, 42.

7. What was the day called on which Jesus was crucified? What day was drawing near? Luke 23:54.

8. What women are mentioned as witnessing the burial of Jesus? Matt. 27:61; Luke 23:55.

9. What did the hatred of the Jews lead them to do? Of what did they remind Pilate? Matt. 27:62, 63.

10. What did they request of the governor? Verse 64.

11. What was Pilate's reply? Verse 65.

12. What was done to make the tomb sure? Verse 66.

13. What did the women who came with Jesus from Galilee do just before the Sabbath? What did they do on the Sabbath? According to what did they rest? Luke 23:56.

14. When the Sabbath was past, what did the women do? Mark 16:1.

15. What occurred early the next morning? Matt. 28:2, 3.

16. How did the angel's presence affect the Roman guard? Verse 4.

17. Who came to the tomb early that first-day morning? For what purpose? Verse 1; Mark 16:2.

18. What question perplexed them on their way? Verse 3; note 3.

19. What did they find when they reached the tomb? Verse 4.

#### Notes

1. The records of Joseph, given by the four evangelists, are independent, and though differing in language and particulars, are not contradictory. He seems not to have been called to the meetings of the Sanhedrin when Jesus was tried, though he was a member. In a time of great need he comes forward, "boldly," we are told by one evangelist; but "secretly" by another, so as to stir up no violent clamor or trouble, which would have been particularly unseemly at such a time. He furnishes his own new tomb for the Master.

2. Nicodemus at first came to Jesus by night; but it was a night which brought light to his soul. He next dared raise his voice before the Sanhedrin demanding fair treatment of Jesus. "Doth our law condemn any man before it hear him, and know what he doeth?" he said. Now he comes forward in this time of peril and utter need to identify himself with the crucified One, who was lifted up.

3. "Who shall roll us away the stone?" This was a natural, human question. How many times we ask it in our blindness and unbelief. We seek the realization of our hopes in the places of the dead, and dream them locked. But when we reach them, our doubts are solved, the stones are rolled away, our dead hopes are transmuted by God's power into living blessings, our sleeping friend into a living Saviour.

#### Uses of Sour Milk

(Concluded from page 11)

When Metchnikoff published his theories on this subject, people to whom his arguments appealed began to drink buttermilk freely — and to the improvement of their health. But buttermilk often contains various impurities, so the drug manufacturers began to make cultures of lactic acid bacilli, put up in the form of dried tablets, which, added to sweet milk, begin to produce lactic acid in sufficient quantity to curdle the milk in about twenty-four hours. The result is often better than buttermilk, but not unless the milk to which the tablets are added is very fresh and clean.— *Youth's Companion*.



# The Youth's Instructor

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## Morning Prayer

HELP me to face the affairs of this day with a steadfast faith in my ability to conquer. May I not be a coward; but grant me courage to be unmoved in the presence of earnest duties; courage to do the small things that claim my attention; courage to do with firmness and tranquillity all the labor that falls to my lot; courage that will not despair at failure or deprivation. Help me to bring to my aid a cheerful good humor, and a kindly regard for all with whom this day's toil may bring me in contact. Grant that I may not judge my fellows hastily or with bitterness; that I may not be grasping, but be content with a fair reward for the services I may have rendered; that I may be diligent in the performance of every duty assigned me, and hopeful and unwavering in the pursuit of right. Help me at all times to keep an open mind, ready to receive and profit by truth in small as well as in large affairs. Aid me in acquiring and practising better methods in all the care of life, that nothing may dim my devotion to my calling, to my friends, and to thee.—*Upton Downs, in Watson's Magazine.*

## Work, or Remain Out of the League

THE Equality League of Self-Supporting Women gives to each person applying for membership in the league a little circular which the recipient is expected to fill out and return immediately. Some of the questions asked on the circular are:—

- Will you speak at outdoor meetings?
- Will you speak at indoor meetings?
- Will you usher, collect, and sell literature at meetings?
- Will you sell tickets and boxes for meetings?
- Will you help to secure speakers and musicians for meetings?
- Will you distribute notices of meetings?
- Will you post placard notices of meetings?
- Will you wear sandwich boards advertising meetings?
- Will you help to address envelopes?
- Will you work at the office in the daytime a certain number of hours a week?
- Will you try to secure members among your acquaintances?
- Will you sell literature and buttons among your acquaintances?
- Will you distribute notices at meetings of other societies of which you are a member?
- Will you try to arrange for some one to speak on suffrage before such societies at least once a year?
- Is there any work not mentioned which you would like to do?

The applicants are advised not to join the league if they do not want to work. And the work required of the members is expected to be performed gratis.

If we were each presented with a similar circular pertaining to the work of God, and we were required to answer each question, do you think we would answer them all affirmatively? There have been many earnest believers in this message who have in spirit done this, else our work would not have had such phenomenal growth. Let us make haste to double our activity in the work of God, lest there be some left out of the kingdom through our inaction.

## The World Is Looking for Men

Who can act.  
 Who never give up.  
 Who can do things.  
 Who have character.  
 Who are never idle.  
 Who can not be bought.  
 Who can show results.  
 Who can see opportunities.  
 Who have original ideas.  
 Who never get into a rut.  
 Who carry out an agreement.  
 Who are not afraid of work.  
 Who do something every day.  
 Who never recognize defeat.  
 Who advocate a square deal.  
 Who can act without orders.  
 Who see their duty and do it.  
 Who accomplish what they begin.  
 Who are not afraid to be leaders.  
 Who merit the confidence of others.  
 Who can originate as well as follow.  
 Who profit by the mistakes of others.  
 Who have ability, honor, and integrity.  
 Who are not frightened by competition.  
 Who do to-day the things that could wait until to-morrow.—*J. S. Vogel.*

## The "Dangerous" Student

A YOUNG man was regarded as such a genius and was so very much more brilliant than any one else in his class during his freshman year that if a prediction vote had been taken as to what man would be likely to lead his class he would probably have been a unanimous choice, but, as a matter of fact, he did not take a single class honor. He was like a meteor flashed up in the clouds, eclipsing for a time all other stars, but he lacked the gift of continuity. He thought that he was so far ahead of his class that he did not need to study much; that he could get off and have a good time whenever he felt like it; could stay away from lectures and recitations a great deal of the time, and still pass brilliant examinations. He very soon found, however, that the tortoises in his class were gaining on the hare. The result was that many of the men whom he looked down upon with disdain as freshmen were far ahead of him on graduation; in fact, he came very near losing his diploma.

It is the man who has the staying power, the pluck, persistency, grit, which never lets go, which keeps eternally at it, who wins in the end. As a rule, meteoric men have very brief and disappointing careers.

Do not be discouraged because there are other men around you so much more brilliant than yourself. Brilliancy has not accomplished half as much in the world as mediocre ability with staying power, persistency, stick-to-it-iveness.—*Success.*