

# The YOUTH'S INSTRUCTOR

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No. 51





THE Quakers throughout the world number 124,000.

"PEOPLE throw stones only at trees with fruit on them."

THE first public high school in the country was opened in 1836.

"THE telephonists in Egypt must know Arabic, English, German, French, Greek, and Italian."

INDIA'S latest great irrigation project is the Niri Right Bank Canal, in Bombay presidency. It cost \$8,500,000.

THE vegetable and flower seeds distributed by the government through the hands of congressmen, amount to more than four hundred ninety-seven tons.

AN old church-bell dating back to the thirteenth century, and weighing nearly five hundred pounds, was recently shipped from Beckman Company Bell Foundry to the historical museum in Stockholm, Sweden.

THE army-worms injured the crops in the South this year to the amount of \$8,000,000. Reports say that at some places the worms covered the railroad tracks to the depth of five or six inches.

OUR currency, by order of the Treasury Department, is to be made smaller. One-dollar bills, together with notes and certificates of all other denominations, are to be cut down to six by two and one-half inches. This change, it is estimated, will save the government \$200,000 annually.

DIPHTHERIA antitoxin is both immunizing and curative. The immunizing dose is 1,000 units; curative dose, 5,000 to 20,000 units or more, according to exigencies of the case. Early administration in full dose is of paramount importance. Of injections on first day of disease the death-rate is less than one per cent. In severe cases and in late stages of disease intravenous injection may be employed, thus securing an immediate and high antitoxin concentration in the blood of the patient.

THE smallest coins in the world are used in South Russia, where there is a coin worth one-ten-thousandth part of an English penny, and in the Malay states, where a wafer is circulated worth one-ten-thousandth part of a penny.

SMOKE causes an annual damage, it is claimed, of \$500,000,000. A department store estimates its losses from soot at not less than \$30,000 a year. Laundry bills in Pittsburgh, Pennsylvania, are double what they would be in a community with a normal atmosphere. One of Pittsburgh's millionaires has set aside the sum of \$50,000 a year for a series of years to be used in a scientific study of some means of preventing the smoke nuisance.

ON October 29 three baby boys came to the home of Mr. and Mrs. Kyler, of Denison, Texas. These boys bear the eminent names of William Howard Taft Kyler, Theodore Roosevelt Kyler, and Woodrow Wilson Kyler. The day before the election the parents sent a telegram to the White House, announcing the birth and names of their three boys, and Assistant-Secretary Brahny sent back a telegram in the President's name, wishing the triplets long life and prosperity.

### Principal Contents

CONTRIBUTED ARTICLES	PAGE
Louis Pasteur, His Life and Work—No. 1.....	3
Christ Was Born (poetry).....	6
Life-Insurance and Tobacco .....	8
Pessimism Versus Optimism (poetry) .....	15
The Cancer Germ .....	16
SELECTED ARTICLES	
The Spirit of Christmas .....	4
The Angels' Song (poetry) .....	4
Young Girl in Vancouver Lured Into Automobile.....	5
What Is the Use of Giving Offense? .....	5
Blowing Durable Soap-Bubbles .....	7
Some Important Questions .....	9
Pockets .....	10
The Carols of Bethlehem Center .....	11
The Model Prayer .....	13

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# The Youth's Instructor

VOL. LX

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No. 51

## Louis Pasteur, His Life and Work — No. 1

EDMUND C. JAEGER



HO was this man Pasteur of whom we hear so much? Where did he live? What did he teach, and what did he do, that he is to be remembered by us all?

Louis Pasteur was born and lived in stirring times; France was just in the period of readjustment after the Revolution. His native place was the little village of Dole, in the Jura Mountains, and there to-day may be seen on the façade of the little house of his birth a plate bearing these words in letters of gold:—

HERE WAS BORN LOUIS PASTEUR

DECEMBER 27, 1822

Pasteur's father, an old soldier decorated on the field of battle in the Napoleonic wars, had returned to France without a home, a poor man, and obliged to earn his living in the tan-yard. His life was necessarily a modest one, but it was ennobled by the society of good books, and characterized by that eagerness for learning which so marked his son. He and his wife early determined to rear their boy for an intellectual career. "We will make an educated man of him," they said. "Ah," frequently spoke the elder Pasteur to Louis, "if only you could become some day professor in the college of Arbois, I should be the happiest man on earth."

So at an early age this boy was sent to the communal college. His biographer tells how "he, the smallest of all the pupils, was so proud of passing under the great arched doorway of this ancient establishment that he arrived laden with enormous dictionaries of which there was no need." The inquiring youth was never still, and during class times he addressed such frequent questions to his professors that, quite bewildered, they had to tell him that it was for them to interrogate Pasteur and not for Pasteur to interrogate them.

Those who would look for the early life of Louis Pasteur to be decorated with wonderful legends must be sorely disappointed. In school he belonged merely to the category of good-average pupils; he had to study and learn as every common boy must learn. He liked to buy new books, in which he proudly wrote his name; and he had considerable artistic ability. He delighted in fishing; but he avoided the trapping of birds; the sight of a wounded lark was most painful to him.

### Love for Chemistry

Pasteur's love for chemistry was early shown, and the more he listened to the lectures of his instructors, among whom was the great Dumas, the more enthu-

siastic he became. He thought of nothing but experiments. He was heard to murmur one night as he went to bed, "Ah, seven hours to wait before I can go back to the laboratory." His comrades ironically called him a "laboratory pillar."

Once at the Ecole Normale his teacher described the process of calcination by which phosphorus is obtained from bone, concluding his remarks by saying that the experiment was seldom performed because of the great amount of patience required. This to Pasteur was the very reason why it should be done, and at four o'clock the next morning he was promptly on hand at the laboratory with a quantity of bones. He stayed by his experiment until nine o'clock that evening, when he triumphantly exhibited sixty grams of phosphorus.

The efforts of such a mind as this, characterized by its inextinguishable thirst for knowledge, were not unappreciated by Pasteur's tutors; and as soon as he had his preliminary education, he was rapidly advanced from one position of honor to another, until at the age of thirty-two he was nominated dean of the Faculty of Science and Letters at the Ecole Normale, and began that career in public life which was destined to make him one of the best-known and best-loved men of France.

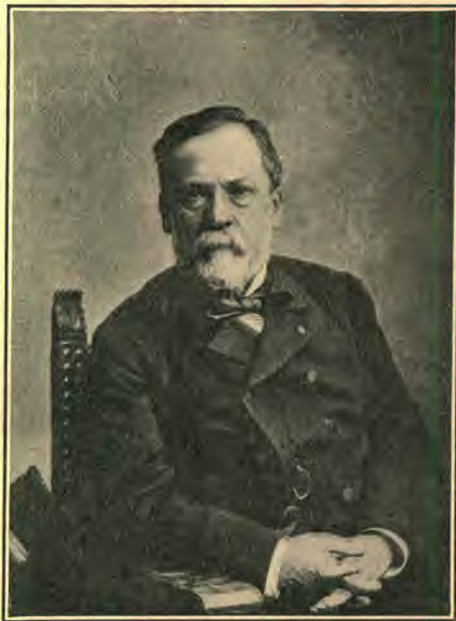
There was one lesson that Pasteur learned in early life which I would not fail to mention. He had learned the matchless power there is in prayer. He approached every task with divine assistance,

and was made keen to discover those secrets of nature which the men of his time could not discern. "Blessed is the man," he said, "who carries within his soul a divine ideal and obeys it."

### First Discoveries

His first discoveries were made in connection with certain experiments in crystallization and fermentation. Up to this time it was held that fermentation was solely a chemical reaction. Vinegar, it was said, was produced by the action of oxygen on cider. Pasteur took an entirely different view of the matter. Through experiments he recognized in fermentation the action and presence of a living organism, which he called a ferment; he discovered the species which produced lactic, acetic, and butyric acids.

The light shed by these experiments quickly extended its sphere. Pasteur began to ask, "Where did these little rod-like organisms come from? How did life appear in sweetened mediums, composed originally of such simple elements, and apparently so far removed from all production of life? Do these vibrios



LOUIS PASTEUR



form themselves? or are they produced by germs? If they come from germs, whence do the germs come?" This drew him aside into an investigation of the aged and universally believed theory of spontaneous generation, which claimed that under certain conditions matter organized itself spontaneously.

#### Spontaneous Generation

"All dry bodies," claimed Aristotle, "which become damp, and all damp bodies which are dried, engender animal life." In the time of Louis XVI the celebrated Dutch alchemist doctor Van Helmont wrote in like strain. "The smells which arise from the bottom of morasses produce frogs, slugs, leeches, grasses, and other things." His recipe for producing a pot of mice is most extraordinary of all. "It suffices to press a dirty shirt into the orifice of a vessel containing a little corn. After about twenty-one days, the ferment proceeding from the dirty shirt modified by the odor of the corn affects the transmutation of the wheat into mice." "The mice are born full-grown," he asserted, "and there are both males and females."

"Scoop out a hole," said he again, "in a brick, put into it some sweet basil, crushed, lay a second brick upon the first so that the hole may be perfectly covered. Expose the two bricks to the sun, and at the end of a few days the smell of the sweet basil, acting as a ferment, will change the herb into real scorpions."

Such were the ideas of the supposed scientific men until the middle of the seventeenth century, when the Italian naturalist Redi, less credulous than others, subjected the theory of spontaneous generation to more attentive examination, and showed that maggots in meat come from flies' eggs. "We may have been mistaken," said the partizans of spontaneous generation then, "as to the origin of mice and maggots; but is it possible to believe the *microscopic* organisms are not the outgrowth of spontaneous generation? How can we otherwise explain their presence and rapid multiplication in all dead animal or vegetable matter in process of decomposition?"

So the problem of life seemed as far from a correct solution as before. In 1858, almost in our own time, M. Pouchet, director of the Natural History Museum at Rouen, declared "that he had succeeded in a manner absolutely certain in bringing into existence microscopic living organisms, which had come into the world without germs, consequently without parents similar to themselves."

It was left for Pasteur's indomitable perseverance and inquisitive mind of genius to give to the world a sane solution of this question. As Pasteur began his investigations, his old masters could see no advantage in it, and appealed to him not to venture into this field in which they could only see a waste of time and strength. But nothing stopped him; he would go on; he must know for himself. "You will never find your way out," said Biot, the philosopher. "I shall try," said Pasteur modestly.

So he worked on, traveling to the tops of mountains to perform experiments, arguing with his opponents, and convincing his friends of his coming success. After ten years of most painstaking labor, Pasteur reached these conclusions: That all life must come from previous life; that there is no circumstance known in which it can be affirmed that microscopic beings come into the world without germs and parents similar to themselves.

#### Silkworm Disease

He now returned from this scientific excursion to

continue his studies in fermentation, which he pursued until he was called to investigate the silkworm disease, which in France had attained the proportions of a national calamity.

#### The Spirit of Christmas

At this Christmas-time, when our thoughts again turn to the meaning of Christ's coming, it might not be amiss to reaffirm the true message of Jesus. His very coming indicates its spirit. It was because Christ *gave* himself that the world acknowledges him as its King. It was sacrifice and self-forgetfulness that brought devotion.

The greatest question is not "Am I saved?" but, "Is my *brother* saved?" Again and again does Christ bring out the true spirit of the gospel as it is indicated in that striking passage:—

"Whosoever will save his life shall lose it: and whosoever will lose his life for my sake shall find it."

And what is it to lose one's life for Christ's sake? Quick and clear comes the answer from Christ himself:—

"Inasmuch as ye have done it unto one of the least of these my brethren, ye have done it unto me."

True to this standard was the answer of Wilberforce when he was asked by a zealous Christian worker, "How about your soul?" "To tell the truth," Wilberforce replied, "I have been so busy trying to help these poor slaves that I forgot I had a soul."

Here it is, then, the spirit of the real Christmas—so wrapped up in the welfare of your brother that your soul becomes one with his, and in his salvation you find your own.—*Rev. Charles Stelzle.*

#### The Angels' Song

WHILE shepherds watched their flocks afar  
Beyond the city's gate, where cooling fountains flow,  
The shades of night fell all around,  
Expectant nature hushed each sound,  
While angels whispered low:

"We bring glad tidings from on high,  
Good news from heaven to earth:  
Shiloh has come, the promised long,  
Burden of all prophetic song,  
The Son of virgin birth!"

Softly the night winds caught the sound,  
And sent the whispered echoes far o'er Judah's plain.  
All else was hushed in silence deep;  
The world, unconscious, lay asleep,  
While angels sang the strain:

"Glory to God in highest heaven,  
And peace to men below;  
Glory throughout eternal years,  
The promised Prince of Peace appears,  
His Father's love to show."

The Shiloh, promised long, appeared;  
Angelic messengers had told their tale of love.  
But human lips, alas! were dumb,  
Although the "woman's seed" had come,  
The Shiloh from above!

O church of God, he comes again!  
Beware lest slumbers deep  
Should hide the echoes earthward sent,  
Till mercy's closing hour is spent,  
When lost ones wake to weep!

—*R. Hare.*

MANKIND are very odd creatures: one half censure what they practise, the other half practise what they censure; the rest always say and do as they ought.  
—*Benjamin Franklin.*





# THE HOME CIRCLE

"You must live each day at your very best:  
The work of the world is done by few;  
God asks that a part be done by you."



## Young Girl in Vancouver Lured Into Automobile Never Seen Again



HE was a good girl, and nearly everybody who knew her liked her for her pretty, simple ways and her really beautifully bright face.

Just a year after she left school her friend went to work in the city. And Annie, that is all the name we can tell you, boarded the big interurban car at Collingwood one morning and went humming her way into town.

The manager of the department store gave her a position in the glove department. Her wages were to be the same as those of other girls, and Annie planned what she would do with the money that she was to receive at the end of the weeks to come.

It was great work down there. People were so nice to her, and in the big store there were hundreds of funny little incidents to amuse one. Sometimes a bargain sale kept her in gossip for a week.

One night the girl left by the front entrance and made her way to the crossing. When she boarded a car, a cold, clammy hand twined its snakelike fingers about hers, held them for a moment, and then, when she turned with the blood crimsoning her face and neck and forehead, dropped them suddenly.

The next night something worse occurred. A pallid face leered at her when she passed through the crowd at the front door. There was just a spice of adventure in the girl's make-up, but she knew that the man was not good, and she passed him by. Besides, her mother in the little suburban home had told her truths when she knew that her daughter was to go into the city among hordes of people thoroughly bad.

It was a day or so later when the fellow made his reappearance. This time the girl was serving a very particular customer, and the store saw to it that she got satisfaction.

Outside in the street the face stared at her through the great glass window. It came up close and flattened its nose and cheeks against the glass, its features writhed into the semblance of a smile, and then it moved on.

The next day the first actual move was made. Sidling up to the girl from behind a great stack of clothing in the next aisle, the fellow announced his intention of buying a pair of gloves for his sister. He looked at a pair or two, and bought them. Then he spoke directly to the girl in spite of the cold looks she gave him.

He wanted to know whether she cared to take in a show. She did not. He would be happy to escort her to her car. She could walk by herself. Would she take supper with him that night? She had money of her own and would not.

The next day he came again, with his fat, sleek face; and the pale-blue eyes in the center of the black-rimmed lids glowed dully as they swept over her figure, noting

its details and the beautiful sweep of its lines. He appraised her as he would an animal.

She resented his intrusions, and, not thinking of her danger, did not advise the management of the store about his unpleasant advances.

Six nights went by like that. Then the good customer came back about a tear in one of the gloves she bought earlier in the month.

Seemingly taking his cue, the procurer came into the store and asked the girl pointblank to go to supper with him. She turned on him with as much fury as she could command and indignantly told him to leave her.

The man slunk away, but muttered he would wait for her outside.

And then the good customer, in her furs and rings, stepped in.

"What is the trouble, dearie?" came in her soft, silky accents, as soft as the lace she wore about her throat.

"O, that man has been bothering me again!" sobbed the girl.

It was the end of a hard day, the clerks were nearly all gone, and the girl felt free to speak of her troubles to this kind lady. And she did.

"Well, girly, we'll fool him to-night, anyway. Where do you live? Let me take you home in my car."

The girl did not like to accept such kindness from the good lady; but when she turned to look over her shoulder, she could see that face, fat, oily, repulsive, flattened against the glass. She shuddered, and the woman smiled, but repeated her invitation.

The girl went.

She has never been seen since.

Where is she to-day?

And now, Mr. Proud Citizen, this is a true story: The name of the store and the name of the girl are filed away in this office.

And one last word: The white slave traders proudly boast that they can ensnare any woman for whom they reach out their hands.—*The Searchlight*.

### What Is the Use of Giving Offense?

I HAVE never been able to understand the type of mind that seems really to enjoy giving offense. I am puzzled to know through what strange processes persons of this curious type arrive at a mental state that causes them really to feel some sense of gratification when they have needlessly offended some one. Happily, I have not known many persons of this type. But I have known some, and I have always felt even sorrier for them than for the persons they have offended. I have been moved to have this little talk with you by something I once heard a young girl say.



She is notable for her abounding good nature and her generosity of spirit. There was something she had thought of doing that she decided not to do; and when she was asked her reason for changing her mind, she said: "Well, I happened to think of two or three persons who might have been offended; and what is the use of giving unnecessary offense?"

Now if the thing this girl had thought of doing had been something involving a principle of right and wrong, she would have done it for the right; but as it was something of no consequence that might have given offense, she most wisely decided to leave it undone.

There can be but one answer to the question under which I am writing this. There is *no good* in giving needless offense; and if you look at it from an ethical point of view, there is real harm in giving unnecessary offense. Surely it is wrong to arouse the angry passions of another. Some years ago I had in one of my Sunday-school classes a girl who once said that she rather enjoyed "making folks mad." Of the nine girls I had in my class twenty years ago, this girl is the only one who has never come to Christ. She is the only one who makes no pretense of going to church, and she is as friendless a woman as I know. I see her rarely; but the last time I saw her she was apparently still engaged in the sorrowful business of "making folks mad" if she could; and I fear that she was succeeding only too well in many instances. She said more acrid things in the half-hour I was with her than I had heard in a month, and more than I want to hear in the next six months. I have heard her speak about her "dander" as if it were something to be proud of. Her case is all the more sorrowful because she is just as capable of giving pleasure as she is of giving offense. In her mellow moods she is very interesting and agreeable. She is well educated, and apparently reads a great deal; but she is so pugnacious in spirit that she rarely gives an opinion without doing it in an offensive way.

What is the use of giving offense? I say it to you, and I wish that you would give the question calm consideration, and discover, if you can, any good that comes from making others feel uncomfortable.

One day not long ago, I was going through the tenement-house district of the city in which I live, and out from a narrow and dirty side street came three little girls arm in arm. They walked on a few feet ahead of me, and I could hear all that they said.

"I know what I'm going to do the very next time I see her. I know!" said one little girl shrilly.

"What are you going to do?" asked another of the trio.

"O, I'm going to make her mad! I know one way that I can always do that. If she's in the yard when we get back to school you just watch and see me do it."

"But what are you going to do? Tell us now."

"Well, I'm going to call her 'redhead.' You know she's got such awful red hair, and it always makes her mad to have any one say anything about it."

Then the third girl put in a little plea for her of the red hair by saying: "Well, I think it's bad enough to have such red hair as hers without having folks say anything about it. I never say a word about Emily's red hair because I know it makes her feel bad. You know that she can't help having red hair."

I do not know if this plea saved the little girl with the red hair from being needlessly hurt or not, but I know that the little girl who tried to save her from this pain showed a very sweet and kind spirit.

Nothing in the way of temperament is more reprehensible than a spirit of malice. It leads one into doing all sorts of mean things that create mischief, and I think that there must be times when the person having this ugly spirit is just as unhappy as any one else over this failing. This must be true if the conscience has not become wholly calloused, and the person with a calloused conscience is in a very bad way indeed. One may have a proper degree of spirit, and stand up boldly for the right without giving offense. Now if any of you girls find yourselves likely to do or say anything that will make some one else "mad," please halt long enough to ask yourselves the question: "What is the use of giving offense?"—*Girls' Companion*.

#### Christ Was Born

CHRIST was born across the waters,  
In the town of Bethlehem;  
And the shepherds told the tidings  
Herald-angels brought to them;  
And the wise men sought the Saviour;  
Gold, frankincense, myrrh, they gave  
To the Manger-King, to Jesus,  
Who had come the world to save.

Christ was born across the waters,  
And the heavens burst with joy  
That no coming tidal-billow  
Can unsettle or destroy:  
And the light streams o'er the ages,  
And the song has kept the chord,  
For the nations bathe in rapture  
'Neath the glory of the Lord.

Christ was born across the waters,  
And the echoes float to me  
Like the distant songs of angels  
O'er the billows of the sea;  
For he folds me on his bosom,  
And I see his smile above:  
Christ was born for little children,  
And the shepherd tale we love.

B. F. M. SOURS.

#### Friend, a Word in Your Ear

*Sir*: Own a horse and cutter? Know anybody sick, crippled, poor, old, who never got a sleigh-ride year in and year out? Know a dozen, counting children? Don't forget they will need extra wraps—need 'em the rest of the winter, maybe; ahem!

*Madam*: Have your washing done out? Has she any children? Don't tell me an infant! Did you ever wash out for a living? Any idea how gifts of old clothes pall? How a sight of something new, and useful, and pretty will make a hard-working woman dance like a child? And cry? Priced any soft, warm blankets lately? An infant, you said. Think of it!

*Sir*: Noticed business improvement? Felt it? Good to see the unemployed getting jobs! Ever been down and about out? In winter? Remember how you felt when you got work? Work, not aid. Remember the excited, bubbling family group? The glow in your heart, how good all men looked, the strong, new courage? Must be nice on Christmas morning to feel one has transformed some despairing life that way!

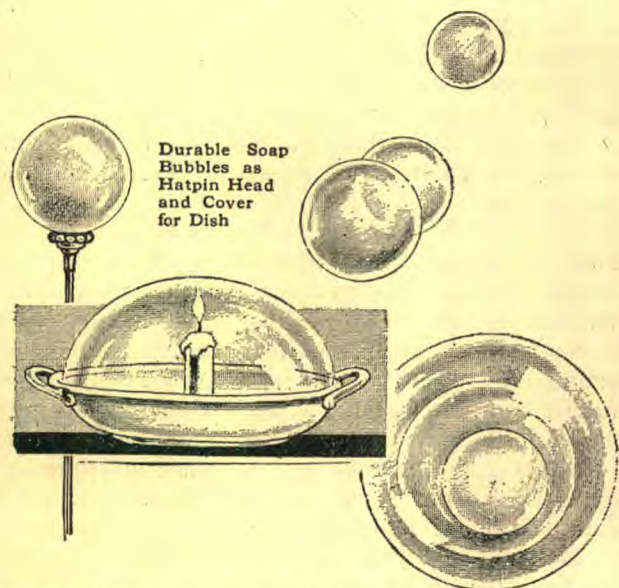
*Madam*: Tired out? Everything ready for the joyful morning? Everybody "remembered"? *Everybody*? Rest a bit, and think over the list,—you don't want to miss any one, do you? *Any one*? Sure there isn't some one who may, because you are too tired to remember, who may, Christmas morning, turn wearily under the scant covers and chokingly say, "Never mind, dearie, don't cry —" (Think of that; "don't cry" on Christmas morning!) "don't cry any more; perhaps Santa Claus —" But what can any one say to a child on Christmas morning crying over a thin, empty stocking?—*The Circle Magazine*.





### Blowing Durable Soap-Bubbles

**S** OAP-BUBBLES that will keep forty-eight hours and can be handled without breaking, are blown with a solution made as follows: Mix 12 ounces of water with 6 to 9 ounces of glycerine and 3 ounces of castile-soap shavings. With a little ingenuity the most beautiful and astonishing effects can be produced with the bubbles. Blow a bubble and let it fall into a glass dish in



Durable Soap Bubbles as Hatpin Head and Cover for Dish

which a little vinegar and common soda have been placed. The bubble will remain suspended in the dish apparently supported on nothing. A bubble can be placed over a dish, plate, or pan so that it fits the outside edge, and appears to be an oval top cover. With practise one can drop roses, keys, pins, etc., through the bubble into the vessel, or set a lighted candle or spin a top in the bubble. A small bubble can be filled with smoke and a larger bubble placed around it, and then both put inside of a still larger bubble.—*Popular Mechanics*.

### The Potato

SURELY no one lacks a degree of appreciation of the potato, which graces our tables at least once a day, and often three times; but perhaps it has not received due recognition from us. The following summary from the *Independent* may gain for the useful tuber more just recognition of its value:—

Rubber from potatoes! What next will that little underground tuber teach us? Already the potato in the form of alcohol enters abundantly into our every-day life. The beds we sleep on, the shoes we wear, the cars and carriages we travel in, the fireworks we enjoy, the pipes men smoke, the umbrella and the stiff hat or the straw hat it protects, are all made possible by the shellac of which alcohol is an important part. Even the gas fixtures, the musical instruments, and the watch are dependent on alcoholic lacquers. The combs we use, the piano keys we finger in our leisure, and the billiards balls with which some while away their time are commonly made of celluloid, a material made possible only by alcohol, the product of the potato. What would we do but for the yeast from potatoes with which our bread is raised, and the starch and vinegar which enter into household life so extensively! And chemically in smokeless powder, in explosive caps for cartridges, in anesthetics, in embalming fluids, and even in the varnish on our coffin,—the products of the potato surely follow us to the grave.

### War on Flies

SEVERAL States have issued pamphlets and caused placards to be posted in all public buildings giving information as to the evil of flies, their habits, and sure methods of exterminating them. The Chicago Board of Health, early in the season, issued a pamphlet entitled "Hints to Householders," urging the necessity of taking certain measures to aid in doing away with flies, and the same method is being adopted by the health boards of other cities.

All this is splendid work, and it will result in the saving of untold numbers of human lives in the long run, because it is in line with modern enlightenment and sane ways of doing things. The only wonder is that the same method has not been adopted for doing away with the liquor habit. All friends of intemperance, and intelligent young people generally, ought to join in a crusade against the evil of alcohol with the same vigor and effectiveness observed in this war of the typhoid flies, for the issues at stake are far greater in the case of alcohol.—*Young People's Weekly*.

### A Mental Test

ADD 8,596,497,713,826 and 96,268,593; multiply 74,829 by 786,926; find the fifth root of 69,343,957. Perhaps you may consider it necessary to use pencil and paper and several minutes for the solution of each of these problems; but a Tamil boy of sixteen can give correct answers to these in a few seconds, without the use of paper and pencil. Arumugam is said to have answered the following problem in three seconds: "A chetty gave as a treat to 173 persons a bushel of rice each. Each bushel contained 3,431,272 grains, and the chetty stipulated that 17 per cent should be given to the temple. How many grains did the temple get?"

### Gin to Unroll Seed From Cotton Fiber

MEMBERS of the New Orleans cotton exchange, and others interested, recently inspected the working of a new cotton-gin, which some cotton men declare will revolutionize the cotton industry. The gin is the invention of a Parisian, who has been residing in New Orleans for several years. The salient feature of the



NEW COTTON-GIN

new gin is that the seed is unrolled from the cotton fiber, leaving the latter uninjured. In ordinary ginning, the fiber is more or less torn; and as the length of the fiber is of the greatest consideration in determining the quality of the staple, the new device is expected to enhance the value of cotton so ginned as compared with that ginned with the present type of gin. Cotton men declare that torn-fiber cotton is worth from half a cent to one cent a pound less than cotton with the fiber uninjured.—*Popular Mechanics*.

Books should to one of these four ends conduce: For wisdom, piety, delight, or use.—*Sir J. Denham*.



## Life-Insurance and Tobacco

G. H. HEALD



IS generally known, life-insurance companies do not attempt to consider such practises as do not materially affect the length of life. Their purpose, if they deal in health problems at all, is to caution people regarding such practises as shorten life.

Some time ago there appeared in this paper an article by the Postal Life Insurance Company of New York, purporting to be a conversation between a man from the planet Mars and a scientist of this planet, on the effects of tobacco. We give herewith another instalment of this conversation, taken from the Postal Company's most recent bulletin:—

"*Martian:* Since our former interview I have been talking with a number of physicians, and have read several medical treatises on the subject. I am surprised to note the prevalence of the idea that tobacco smoke contains no nicotine, but simply empyreumatic substances and pyridine bases, the result of the burning of nicotine and vegetable fiber.

"*C. B. S.:* Yes. Many suppose they are expressing the latest scientific news when they make such statements. It is a fact, however, that this dogma rests upon some faulty experiments made about forty years ago by Vohl and Eulenburg, who employed in the latter stages of their experiments a solution of warm potassium hydroxide, which is now known to decompose nicotine. Naturally, no nicotine was left in the smoke after such treatment.

"*Martian:* How about more recent experiments?

"*C. B. S.:* Many years ago Kissling, a standard authority, pointed out the fallacy of the experiments of Vohl and Eulenburg, but the error would not down. In 1908 K. B. Lehmann, a painstaking German investigator, performed elaborate experiments by which he demonstrated not only the presence of nicotine in tobacco smoke, but the actual percentage of the alkaloid present in cigarette and cigar smoke after it had been drawn into the mouth. These percentages are as follows:—

"In cigarettes 82% of the nicotine goes into the smoke; in cigars, 85% to 97%. From one gram of cigar there is released and drawn into the mouth 5 milligrams of nicotine, .5 milligram of pyridine, and 5 milligrams of ammonia, as compared with 4 milligrams of nicotine, .9 milligram of pyridine, and 3 milligrams of ammonia from one gram of cigarette.

"It is true that nicotine is decomposed into pyridine and its bases by burning, but it is evident from these experiments that the bulk of the nicotine in cigars and cigarettes is volatilized before the burning point is reached.

"*Martian:* Then it would appear that cigarettes are not so injurious as cigars?

"*C. B. S.:* That is undoubtedly true if the smoke is not inhaled, as I stated at our recent interview. But there is a tendency to inhale cigarette smoke, and thereby greatly increase the amount of nicotine absorbed. Also, cigarettes seem more innocent than big black cigars, and are freely smoked by boys and women who would hesitate to indulge in cigar smoking. The cigarette must still be regarded, therefore, as a powerful menace to public health, notwithstanding the lower nicotine content of its smoke.

"*Martian:* Has there been any confirmation of Lehmann's experiments?

"*C. B. S.:* Yes. The London *Lancet* recently published (April 6, 1912) the results of an exhaustive investigation in its laboratory, regarding the proportion of nicotine in various brands of tobacco, and also the percentage of nicotine contained in the smoke of cigarettes, pipes, cigars, etc. By a new method of analysis, the *Lancet* finds a much smaller percentage of nicotine in tobacco than has heretofore been supposed. For example, Havana cigars contain only .64% nicotine, while British cigars contain 1.24%. Virginian and Turkish cigarettes contain from 1.38% to 1.60% nicotine, while Caporal contains 2.60%, and average pipe mixtures 2.85%. The percentage of the nicotine content of tobacco that goes into the smoke, and is drawn into the mouth, is as follows:—

"Cigarettes: Virginian, 3.75% to 8.50%; Turkish 37%; Caporal, 84%; pipe mixtures, smoked in cigarettes, 79%; pipes, 77% to 92%; cigars, 31% to 83%.

"*Martian:* Then the *Lancet* is in agreement with other experimenters that cigarette smoke contains the least nicotine?

"*C. B. S.:* Yes, although Havana cigars also are shown to contain a comparatively small quantity of nicotine; it is possible, however, that the tobacco-camphor, which gives them their fine flavor, accounts for the constitutional effect reported, Havana cigars being regarded by most smokers as 'stronger' than the cheaper domestic brands. While the average quantity of nicotine as determined by the *Lancet* investigation is smaller than that reported by other investigators, a sufficient quantity goes into the smoke to exert a decided effect on the system, provided it is absorbed.

"*Martian:* Do you recall any experiments on animals with tobacco smoke?

"*C. B. S.:* Yes. Jebrofsky, a Russian investigator, by means of an ingenious apparatus, compelled rabbits to smoke cigarette tobacco for a period of six to eight hours daily. Two animals died within a month, and showed changes in the nerve-ganglions of the heart. Others established a tolerance similar to that exhibited by human beings who become habitual smokers, but upon being killed at the end of five months, degenerative changes similar to those produced by the injection of nicotine were found; namely, hardening of blood-vessels. Loss in weight was also observed. There seems to be little doubt that tobacco-smoke poisoning is chiefly nicotine poisoning.

"*Martian:* What steps have been taken by your government to protect young people from this drug?

"*C. B. S.:* As usual, America lags behind the rest of the civilized world in all matters pertaining to the protection of the public health. We are extremely proud of our achievements in the Canal Zone, but we have no shame for the frightful neglect of our own homes and firesides, and a typhoid death-rate that leads the world. Japan has long since passed a law prohibiting smoking below the age of twenty. Several of our States have fixed the limit at sixteen years of age, thereby implying that at that tender age a youth is proof against the evil of this indulgence. That smoking among college boys exerts a pernicious influence can readily be understood, but statistics on this subject must be interpreted with caution. To be dependable, comparison must be made between groups of students that are substantially alike, except as regards indulgence in tobacco. I am not aware of any such statistics. It has been shown by Meylan, of Columbia,



that the non-smoking students make higher marks in their studies, and somewhat lower marks in athletics; but the comparison was evidently between groups originally differing in temperament and constitution, such differences often determining the smoking or non-smoking habit of the student.

"*Martian*: I have been looking up the botany of tobacco, and find that the order of Solanaceæ, which you mentioned in our former interview, comprises, in addition to tobacco and other plants, 'Atropa Belladonna,' or 'deadly nightshade,' 'Hyoscyamus,' or 'bitersweet,' and the ordinary potato and tomato. Have any of these substances been smoked?

"C. B. S.: I have never heard of any one's smoking a potato- or tomato-vine. As for 'deadly nightshade,' if any one were to attempt to sell this drug for smoking purposes, he would promptly be sent to jail, and perhaps hanged. And yet nicotine is more deadly in its effect than atropine, the alkaloid of nightshade. In fact, nicotine ranks next to prussic acid in the rapidity of its fatal effects. Almost instantaneous death follows the taking of a fatal dose. Atropine is rarely fatal, because of its rapid elimination by the kidneys. There are few people, however, who would venture to smoke a bunch of dried nightshade containing from 30 to 200 times the medicinal dose of atropine. These comparisons may seem overdrawn, but they are strictly logical and accurate. It is only by viewing the matter in this light that we can appreciate the degree of drug indulgence that is involved in this wide-spread habit, familiarity with which has bred indifference and tolerance."

### Some Important Questions

THE following questions and answers, which are worthy of thoughtful consideration by every unconverted person, have been printed in leaflet form by the Bible Institute Colportage Association of Chicago:—

*Have you come to Jesus as a lost sinner, and accepted him as your personal Saviour? Are you confessing him as such before the world; if not, why not? Is it because you think you do not need a Saviour?*

"All have sinned, and come short of the glory of God." Rom. 3:23.

"Whosoever was not found written in the book of life was cast into the lake of fire." Rev. 20:15.

*Is it because you are afraid that you will have to give up too much?*

"No good thing will he withhold from them that walk uprightly." Ps. 84:11; see also Rom. 8:32.

"What shall it profit a man, if he shall gain the whole world, and lose his own soul?" Mark 8:36.

*Is it because you are afraid of ridicule?*

"Whosoever therefore shall be ashamed of me and my words; . . . of him also shall the Son of man be ashamed, when he cometh in the glory of his Father with the holy angels." Mark 8:38.

*Is it because you are too great a sinner?*

"This is a faithful saying, and worthy of all acceptance, that Christ Jesus came into the world to save sinners; of whom I am chief." 1 Tim. 1:15.

*Is it because you are afraid that you will not be accepted?*

"Him that cometh to me I will in no wise cast out." John 6:37.

*Is it because you are afraid you can not hold out?*

"Fear thou not; for I am with thee: be not dismayed; for I am thy God: I will strengthen thee; yea,

I will help thee; yea, I will uphold thee with the right hand of my righteousness." Isa. 41:10.

*Is it because of the inconsistencies of professed Christians?*

"Every one of us shall give account of himself to God." Rom. 14:12.

*Is it because you can not believe?*

"If any man will do his will, he shall know of the doctrine." John 7:17.

*Is it because you wish to put the matter off to some future time?*

"Boast not thyself of to-morrow; for thou knowest not what a day may bring forth." Prov. 27:1.

"He, that being often reproved hardeneth his neck, shall suddenly be destroyed, and that without remedy." Prov. 29:1.

### Riddles

1. I AM found all around the house, never in the house, my product I send to the house.

2. I am most necessary to life. I am never seen, but serve everything that lives. At times I am a menace and deadly because of what I am carrying; but give me a chance, and I purify.

3. I make one man suppliant to another. I am a burden, and I increase from day to day; yet my only message may be one of gratitude. I may be made when poverty knocks at the door, or I may be made in the midst of pleasure. A whole life may be given to destroy me.

4. Unto my first much love a parent tenders;  
My next at ladies' toilet much service renders.  
My whole the reader's love engenders.

5. In my first and second deep within the earth,  
Centuries ago, my third had birth.  
My whole deceives many, and since the world began  
Has been used by prince and peasant to outwit a fellow man.

6. Take a vehicle and a place from which we get fuel, and make a color; take one third of boy, one fourth of girl, one third of you, and one half of me, and make a color; take one fifth of plate, one sixth of dipper, one third of pan, and one sixth of bucket, and make a color.

### Answers

1. Garden.

2. Air.

3. Debt.

4. Son, net — sonnet.

5. Strata, gem — stratagem.

6. Car-mine, b-l-u-e, p-i-n-k.— *Youth's Companion*.

### The Desert Gospel

IN the deserts, when caravans are in want of water, they send a rider some distance ahead; then, after a little space, another follows; and then, at a short distance, another. As soon as the first man finds water, before he stoops to drink, he shouts aloud, "Come!" The next one repeats the word "Come!" So the shout is passed along until the whole wilderness echoes with the word "Come!"—*The Christian Endeavor World*.

"FAST flew that year of sunshine, joy, and beauty;  
Mercies were poured, to drench the soil around;  
Love called for love, and grace constrained to duty;  
Lord, am I still a cumberer of the ground?"

"Saviour all pitying, whose divine affection  
Yearns still above the fruitless cumberers here;  
While Justice dooms us, thou art our protection;  
Let Mercy plead, 'O, wait another year!'"



## Pockets

A POCKET is a poem, and a sensible boy knows it. He is incomplete without it, and without a plenty of them. We do not refer to the boy that crams his pockets in a disorderly way. There are such boys, but not so many as we are likely to suppose. Pockets teach order, system, rhythm. The boy with seven pockets learns to sort things, to keep things in their places — having a place for everything.

Here is how it works: number one is a knife pocket. A boy who has no knife, no good and handsome and strong knife, is to be pitied. You can not make a man out of such a boy. A knife is quite as important as a spelling-book, and twice as useful as a grammar. We do not mean for whittling, but for learning to achieve. It is the best part of education. Better a two-dollar knife than a one-dollar knife, and either one of them is better than a five-dollar dictionary. As for spelling, is not *nife* just as good as *knife*? But when it comes to doing, that is another thing, and the knife will teach it.

As for pocket number two, it is for strings, and a small box of fish-hooks, and a bait box, which needs occasional looking after by the boy's sister. Pocket number three is for specimens — that is, for things discovered in this world as the boy goes around to find it out. These specimens also need a few tin boxes, especially if they are bugs and beetles. Pocket number four is for apples, and, out of apple time, for pears or nuts. It will sometimes catch plums or grapes or gooseberries, but that is not to be encouraged, for a boy can not be all the time remembering. He may sit down on a pocket.

Number five is for his handkerchief, and number six for his purse, leaving only number seven for a furious miscellany. This can not be helped, not in a world that relies so much as ours on buttons and hooks, — an unfinished world, where folks start as boys and girls, instead of ripe old men and women. A boy sometimes needs a shingle-nail where a button comes off, and a good-for-something boy is sure to be known by some sort of favorite tool, — a preliminary announcement of what he is to be and to do when grown. Now, do you let him alone. Do not empty his pockets and mix their contents. Do not undertake to put his things in order. Honor the man that is to be.

Of all the prosaic follies perpetrated by women, the least excusable was abolishing pockets, and lots of them. Woman's dress is so admirably suited to sly concealment, it should be full of pockets, and every pocket should have its purpose. Thread and needles and thimbles in one, knife and scissors in another, pocketbook in a third, and watch in a fourth; bills due and a small check-book should fit nicely in a fifth; and

a memorandum, with pencil attached, should invariably occupy the sixth.

This memorandum pocket is the only common and universally essential pocket. Everybody should have one — men, women, boys, and girls. We have been overtaking the memory. Even if you try, you can not remember one half the item duties of a day. But why try? It wears out the nerves and tires out the brain. Set down these items every morning and every night; label this book *My Memory*, or *My Second Memory*, and put it in your pocket.

Some need special pockets, — the banker for papers; the merchant for samples, and the scholar for books. We have a friend who insists that there is nothing so important as to have in the pocket a two-foot rule, and another insists on a fifty-foot reel. These are made to fit very nicely and stow away very compactly.

About one third of our rising generation is given to mechanics, and for all these is wanted the mechanic's pocket. Without tools, and the very best that have been invented, these persons are as badly off as a mere brute-force generation without revolvers. Here, indeed, is a charming illustration of human progress.

Law has forbidden the carrying of firearms, but the old revolver pocket is now supplied with screw-driver and pocket wrench and pruning-knife, all significant of progressive civilization. No one takes a vacation without a pocket kodak, nor goes into the land of lakes and woods without a pocket compass. The lunch basket has become the lunch pocket, — concentrated food for a two days' tramp in a single pocket.

Old men, above all, need pockets. There is nothing in life to compare with one's October. It is then that the *memoriter* of a long life has accumulated, — a photo-

graph or two dating back half a hundred years; bits from boyhood and samples from manhood; and, like any other boy, there's a pocket always to be supplied with apples and grapes. The old man is in his second childhood, and is not ashamed of it. He has a whole life behind him, and he does not mean to let go of it. He is just as happy now as when he was ten years of age, and was gathering his earliest discoveries in the botanical field, or pocketing now and then a geological specimen.

Every age is notable for some peculiar storages: 1800 had its bandboxes, fragile and troublesome; 1900 concentrated its skill on suit cases, evolving all the time toward compactness; 1950 [if the evolution is allowed to continue] will be notable for the crowning virtue of having everything at hand. An ideal pocket system is the problem of the day. It must be invented; a system of least wasted room and the most useful material. — *Independent*.



FATHER TIME AS ELEVATOR MAN ASKS, "GOING UP OR DOWN IN THIS YEAR ELEVATOR?"





## Long, Long Ago

(Tune: "Tara's Harp")

LONG, long ago a wondrous star  
Rose over land and sea;  
Its beams in splendor shone afar  
To guide the wise men three,  
O'er desert sands from Eastern lands  
Unto that lowly shed,  
Where Christ the Lord an infant lay,  
A manger for his bed.

A manger for his cradle there,  
A shining star on high,  
A choir of winging angels fair,  
And wondering shepherds nigh;  
No palace great in kingly state  
Received him to a throne,  
But to the lowly ones of earth  
Christ came and found his own.

J. FRED SANTEE.

## The Carols of Bethlehem Center



HERE might have been no church had not the Rev. James McKenzie come just when it seemed tottering to a fall. There might have been no Sunday-school had not Harold Thornton tended it as carefully as he tended his own orchard. There might have been no class number four had it not been for Gertrude Windsor. But there would have been no glad tidings in one wintry heart save for the voices with which Eddie and the two Willies and Charlie and little Phil sang the carols that morning in the snow, and *they* came straight from Him who gave the angels the songs of "On earth peace, good will to men."

At the end of the winter term in Gertrude's junior year the doctor had prescribed a year of rest for her, and she had come to find it with Aunt Mehitable, in the quiet of Bethlehem Center.

On her first Sunday she attended the little Sunday-school, and at the close of service there was an official conference.

"She would be just the one if she would," said the pastor.

"It can't go on as it is," answered the superintendent. "The deacon means well, but he doesn't know boys. There wasn't one here to-day, and only Eddie last Sunday. I wish she'd be chorister, too," he added. "Did you hear her sing?"

"I doubt if she would do that. I am told she nearly broke down in college, and is here to rest."

"Yes, so Mr. Thompson told me. But we do need her."

"Well, I shall call, and I will let you know what I learn."

Gertrude had hesitated, for had not the doctor said, "It isn't so much college, Miss Windsor; it's church and Sunday-school and Christian Endeavor and Student Volunteer, and all the rest on top of college work, that is breaking you down, and you must stop it"?

But the wistful face of Harry, who brought their milk, decided her; and the second Sunday saw her instructing Eddie and little Phil in the quarterly temperance lesson. It was not until school was over that she learned the reason of little Phil's conscious silence; and next day, when she met him with his father on the street, she tried to atone for her former ignorance.

"Are you Phil's father?" she asked, stepping toward them.

Tim Shartow, who was believed by some to regard neither God, man, nor the devil, grew strangely embarrassed as he took her hand, after a hurried inspection of his own.

"Yes'm," he answered.

"I am to be his Sunday-school teacher," she went on, "and of course I want to know the fathers and mothers of my boys. I hope Phil can come regularly. We are going to have some very interesting lessons."

"I guess he can come," answered his father. "It's a better place for him than on the street, anyway."

This was faint praise, but well meant. Gertrude smiled her appreciation, and in that brief meeting won not only Phil's lifelong regard, but — had she known it — that of his father as well. For thenceforth Tim Shartow felt that he had two friends in Bethlehem Center of whom he need not be ashamed.

His other friend was the Rev. James McKenzie; and the mutual though qualified respect which they felt for each other dated from their first meeting when Mr. McKenzie had walked into the saloon and asked permission to tack up some bills advertising his revival services.

"I guess you can," the proprietor had answered, standing alertly on his guard.

The bills had been posted, and the unwonted visitor turned to the man behind the bar. They were alone together.

"We should be very glad, Mr. Shartow," he said, "if you would attend some of the meetings."

"It'll be a cold day when I do," answered the saloon-keeper.

Mr. McKenzie did not reply.

"The worst enemies I've got are in that church," added Tim, by way of explanation.

A smile lighted up the pastor's earnest face. "No, Mr. Shartow," he said, "you're wrong. They don't like your business, — I don't like your business, — but you haven't an enemy in our church. And I want to tell you now" — his foot was upon the bar rail, and he was looking straight into the eyes of the man to whom he spoke — "that every night, as I pray that God will remove this saloon, I shall pray that he will bring you to know my Saviour. And if ever you need help that I can give, I want you to feel free to come to me. We are traveling different roads, Mr. Shartow, but we are not enemies; we are friends."

And the pastor departed, leaving Tim, the saloon-keeper, "that shook up," to use his own phrase, that



it is doubtful whether he ever entirely regained his former attitude toward "them church folks."

By Gertrude's second Sunday as teacher the two Willies had come to test the truth of rumors that had reached them. Charlie and Harry came next, and after Gertrude announced the mid-week class-meetings as a reward for full attendance, not one lapse occurred for thirteen weeks, until in September Charlie had the measles.

To Harold Thornton it had the look of miracle. The class for whom no teacher could be found was as clay in the hands of the potter. There was nothing Gertrude could not do with them. They listened spell-bound while she talked, took part in the responsive readings, answered questions, studied their lessons, sat wherever the superintendent wished; they even pocketed their papers without a glance at them until the session was over, and they sang with a wild abandon that was exhilarating to hear. Even Harry, who held throughout the note on which his voice first fastened, never failed to "sing;" and though it added little to the harmony, it spoke volumes for the spirit of the school and the devotion to the chorister.

But if Gertrude was doing much for the boys, they were doing much for Gertrude; and in obeying her orders to rest, exercise, and grow strong, she could not have had better helpers. From the time when the first pale blossoms of the bloodroot showed beside the snow, through the seasons of violets and wild strawberries and goldenrod, to the time when the frost had spread the ground with the split shucks of the hickory-nuts, the spoil of all the woodland was brought to her.

Their class-meetings became long tramps, during which Gertrude told them interesting things about insects, birds, and flowers, and they told as much that was strange to her. Every one of them had become a conspirator in the plot to keep her out-of-doors away from her books; hardly a day passed that she did not go somewhere with one or more of them; and as the healthy color began to show beneath the tan, as strength came back, and every pulse-beat brought the returning joy of life, she often felt that all her work for class number four had been repaid a hundredfold.

It was one mid-August afternoon, when the tasseled corn stood high, and the thistles had begun to take wing and fly away to join the dandelions, that there came the first thought of the carols. Harry had to drive cows that day; but the others were with her, and as they came out through Mr. Giertz's woods, and looked down upon the pasture where the sheep were feeding, little Phil began the quaint old version of the shepherd psalm that she had taught them,—

"The Lord is my shepherd;  
I shall not want;  
He maketh me down to lie,—"

and the other boys joining, they sang through to the end.

It was beautiful. She had never realized they could sing so well, and suddenly, as she listened, the plan came full-grown into her mind, and she proposed it then and there. The boys were jubilant; for a half-hour they discussed details; and then, "all seated on the ground," like them of whom they sang, she taught them the beginning of "While shepherds watched their flocks by night."

That was the first of many open-air rehearsals, transferred, when the weather grew colder, to Willie Giertz's, where there were no near neighbors to whom the portentous secret might "leak out." There was

not one defective voice in the class save Harry's, and he was at first a puzzle; but that difficulty vanished when it was learned that his fondest ambition was satisfied by striking the tuning-fork, and thereafter all went smoothly, with much enthusiasm and a world of mystery.

When the program was complete, they had by heart six songs: "While shepherds watched their flocks by night," "Away in a manger," "We three kings of Orient are," "Hark! the herald-angels sing," "There came three kings ere break of day," and last, but best, because it seemed especially made for them, the song that began,—

"O little town of Bethlehem,  
How still we see thee lie!  
Above thy deep and dreamless sleep  
The silent stars go by."

And so at length came Christmas eve. Little eyes were closing tight in determined efforts to force the sleep that would make the time till morning so much shorter. But in Bethlehem Center were six boys who, 'tis safe to say, were thinking less of the morrow's gifts than of the morning's plan, for preparations for early rising had been as elaborate as if it were fourth of July, and there was a solemn agreement that not one present should be looked at until after their return.

Gertrude had fallen asleep thinking of the letter beneath her pillow, promising her return to college at the beginning of next term; but at the first tinkle of her alarm-clock she was up, and, dressing by candle-light, went softly down the stairs and out into the keen air of the morning. The stars were still bright overhead, and there was no light in the east; but Gertrude Windsor was not the first abroad, for at the gate Eddie, the two Willies, and little Phil stood waiting, and already Harry and Charlie were seen coming at top speed.

"Are we all here?" asked Eddie in a stage whisper; and the other boys huddled close together, and wriggled with suppressed excitement.

"Yes," answered Gertrude. "Which place is first?"

"Mr. McKenzie's," announced Charlie, whose part it was to lay out the route; and, crossing the road, they passed through the parsonage gate. Beneath the study windows, Harry, at a given signal, struck the tuning-fork against his boot heel, Gertrude gave the key, and then, like one, there rose to greet the dawning of another Christmas day those clear young voices,—

"Hark! the herald-angels sing,  
'Glory to the new-born King;  
Peace on earth and mercy mild,  
God and sinners reconciled.'"

There were sounds from within before they had finished the first stanza; but when, after the "Amen," the pastor started to open a window, the boys were too quick for him. There was a volley of "Merry Christmas," and his answer reached only the rear-guard tumbling over the picket fence.

Beneath the bare apple-tree boughs in Harold Thornton's yard, Charlie, Eddie, and little Phil sang, "We three kings of Orient are," while the others joined in the chorus; and at the song's close the superintendent, swifter of foot than the pastor, overtook them with a great box of candy.

Tears came into the eyes of Mrs. Martin as, watching beside her sick child, she heard again the story of the Babe "away in a manger, no crib for his bed." Old Uncle King forgot for a moment his vexing troub-



les as he listened to the admonition to "rest beside the weary road and hear the angels sing." Mrs. Fenny cried — as sick people will — when she heard the boys reiterate the sweet, triumphant notes.

And so from house to house the singers went, pausing at one because of sickness, at another because those within were lonely, at some for love, as they had serenaded the pastor and the superintendent, and bringing to each some new joy.

The stars were fading out, and they had started to return. On their side of the street was the post-office, and opposite them was the saloon, with its gaudy gilt sign — "TIM'S PLACE." Little Phil was behind Gertrude; and as they passed that building, — it was home to him, — his hand just touched her sleeve.

"Do you think" — he whispered, and she could see the pitiful quiver of his chin as he spoke — "do you suppose — we could sing one for m' father?"

Tears filled Gertrude's eyes; and had she not known boys so well, she would have stooped and caught him in her arms. "Why, surely," she answered. "Which one do you think he would like best?"

Phil had shrunk behind her, and beneath the gaze of the other boys his eyes were those of a little hunted animal at bay. "Bethlehem," he said, huskily.

And when Harry had struck the tuning-fork, they began to sing together, —

"O little town of Bethlehem,  
How still we see thee lie!  
Above thy deep and dreamless sleep  
The silent stars go by."

The twenty-fourth had been a good day for business in Tim Shartow's "place." He had had venison for free lunch; two mandolin and guitar players had been there all the evening; and there was more than two hundred dollars in the till. But now, in the quiet of the early morning, as he sat alone, the reaction had come. He remembered how Rob MacFlynn had had too much, and gone home maudlin to the wife who had toiled all day at the wash-tub. He thought of the fight Joe Frier and Tom Stacey had had. And — he did not drink much himself; he despised a drunkard — and these things disgusted him. There was little Phil, too, — "the saloon-keeper's boy," — and that cut deep. Wouldn't it pay better, in the long run — and then the music floated softly in.

He did not hear the words at first, but he had a good ear, — it was the singing that had brought him, as a boy, into the beer-gardens, — and stepping to the window, he listened, all unseen by those without. There the words reached him: —

"How silently, how silently,  
The wondrous gift is given!  
So God imparts to human hearts  
The blessings of his heaven.  
No ear may hear his coming,  
But in this world of sin  
Where meek souls will receive him —"

and until they sang the "Amen" Tim Shartow never stirred from the window.

The storm that had been threatening all day had descended. Without, a blizzard was raging; but within, beside his study fire, the little ones tucked away in bed up-stairs, and a book in his hand, the Reverend McKenzie could laugh at weather. A knock at that hour surprised him; but when he saw who stood upon the threshold, he knew how the saloon-keeper felt when he posted his bills so many months before.

"Good evening, Mr. Shartow," he said. "Won't you come in?"

The face of his visitor was tense and haggard, for the struggle had lasted the day long.

"I've come for help," he answered, shortly. "I guess it's the kind you can give, all right."

For a moment the pastor searched his face. "God bless you!" he exclaimed. "Come in, come in."

And so was wrought again, before the close of the day that had been ushered in by the singing of the carols, the ever new miracle of Christmas; for God's gift to men had been again accepted, and into another heart made meek and ready to receive him the dear Christ had entered. — *Frederick Hall, in Christian Endeavor World.*

### The Model Prayer

JESUS says that there is a region where God's will is perfectly done — "in heaven." He desires that the harmony of this region spread over all the earth.

When God's will is everywhere perfectly done, heaven and earth will be one; just as a man here and now may live in heaven, as Jesus did, "in the bosom of the Father," the place of safety, peace, joy, rest, power. Heaven is a revelation, an uncovering, a removal of the veil from realities that are eternal, although our blind eyes fail to see them. The salvation is "ready to be revealed." God waits only on our vision.

Jesus' social reform begins with the will of the individual. We must learn to say, "Thy will be done in me," first. When we do so, we lift the whole race. If American farmers refused to grow wheat, brown men in far-off India would suffer. The skill and labor of every son of toil affect all men, somehow, to the very ends of the earth. The soul that does God's will, therefore, answers in part this petition, and God's will is realized on earth.

God's will, which Jesus desires to see supreme, is the eternal life-plan he has thought out for each one of us. Some fear to say, "Thy will be done," because they think that God's will means privation, self-denial, hard and unpleasant things. Not at all. If only God's will were done, life would contain nothing but pleasant things. It is man's will that has introduced all that is hard and bitter, all sin, sorrow, suffering, and the agony of death. God's will is only kindness. If I give up my own will, and the will and manner of life of my neighbors, and surrender myself to God to do his will alone, then I am actually giving up all care, sorrow, and sin, and accepting the eternal good that he has always wished me to possess. God is not a monster. He is kind. He wants his children to be happy. Jesus could say, "My joy," "My peace."

Shall I surrender now, and say, "Thy will be done"? Yes, but what will happen if I do?

God will begin to straighten out all the crooked things that have crept into your life through ignorance and sin. He will begin to bring you back to his eternal purpose. This may make you imagine that he is taking away some things from you. True, but only harmful things, and he removes them in order that he may lead you into your own inheritance.

Surrender! Lay everything at his feet. Tell him to take away what your own will has taken, or stolen, that he never meant you to have. Let everything go. He will give you back all that is yours according to his eternal plan of love. You do not want anything that God does not wish you to have, do you? He gives only the perfect, the good. Why should you wish the imperfect, perhaps the harmful?

This attitude is peace, rest, joy. It is heaven. One dwells forever safely in the bosom of the Father. — *Rev. R. P. Anderson, in Christian Endeavor World*





M. E. KERN  
MEADE MACGUIRE  
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Secretary  
Field Secretary  
Corresponding Secretary

### Society Study for Sabbath, January 4

NOTE.—The INSTRUCTOR of December 10 contained an article by Elder Meade MacGuire explaining the plan for society lessons. I hope as leaders you have read it carefully. Since the programs are now published in leaflet form, it has been thought advisable to print the additional helps appearing in the INSTRUCTOR one week later than they have been published during the last year. Thus the helps for Sabbath, January 4, will appear in the INSTRUCTOR of December 24 instead of in this number.

### Missionary Volunteer Reading Courses

#### Senior No. 6 — Lesson 11: "Patriarchs and Prophets," Chapters 6-11

1. CONTRAST the two classes which now inhabited the earth. In time how were the "sons of God" contaminated? What advantages had the antediluvians for mental and moral attainment?
2. Sketch the life of Enoch. In his translation, what did God design to teach? Of what was Enoch a type?
3. Describe the conditions that made necessary the destruction of man. What means of escape was provided?
4. How was the warning received? What final appeal was made? what manifestation given? with what effect? What then took place?
5. Describe the deluge and attending events. Compare the conditions of that time with those of the present age.
6. In Noah's first act after leaving the ark, what lesson was given? What is the purpose of the bow? State what changes were wrought on earth by the flood? Explain the cause of earthquakes. How will the wicked finally be destroyed?
7. How would you meet the objection that the first seven days were not a literal week? Show that true science is in harmony with the Word.
8. As a result of their chosen courses, what was prophesied concerning Noah's sons? What notable attempt was made to frustrate God's purposes? What was the outcome? To-day what are "tower builders" doing? How will this end?
9. Draw some lessons from Abraham's answer to God's call.

#### Junior No. 5 — Lesson 11: "Pilgrim's Progress," Pages 25-46

1. WHO now met Christian? What counsel did he give? In following it, what difficulty was experienced?
2. Just at this time, who reappeared? How did he expose the error of Worldly Wiseman's counsel? What warnings did he give? With what effect?
3. What assurance and further directions did he give? Tell of the burdened man's entrance through the gate, and of the instructions and advice imparted by Mr. Goodwill.
4. Arriving at the house of Interpreter, what did he learn concerning the guide in all difficulties? the law and the gospel?
5. Passion and patience? the work of grace in the soul? the need of being valiant?

6. The necessity of watchfulness and prayer?
7. The sinner's conviction of guilt in the presence of the Judge?
8. Describe the highway up which Christian must go; his discovery of the cross; the loosing of his burden; the attentions of the three Shining Ones; his rejoicing.

### Education Notes

OPEN-AIR schools, arranged after German and American models, have been instituted at Barcelona, Spain.

"Education, detection, control," should be the watchwords of the campaign against tuberculosis, according to the Chicago Tuberculosis Institute.

So important has domestic science instruction become in Germany that a special Domestic Science Dictionary has been issued for the use of teachers and others interested in education for the home.

No more free maps. School-teachers who wish the ocean charts published by the United States Hydrographic Office will hereafter have to subscribe for them at ten cents a copy. The Pilot Chart is published monthly for the North Atlantic, North Pacific, and Indian Oceans, quarterly for the South Atlantic and South Pacific Oceans.

The pressing need for uniformity in State school reports is emphasized anew by the United States Bureau of Education in a recent bulletin on city and country schools. The bureau urges school officers to adopt as rapidly as possible the State schedule and definitions of terms approved by the Department of Superintendence of the National Education Association.

"The laboratory method applied to the teaching of law" not unfairly describes the experiment of the Catholic University of Washington, D. C., where a real court-room, with all the appurtenances,—desks, railing, jury-box, witness-stand, etc.—has been fitted up for holding moot courts. Attendance upon court is compulsory for all students in the law school. The presiding judge is a member of the faculty, but most of the officers of the court are students in the school.

"Yale in China," the collegiate school and hospital in Changsha, Hunan Province, China, intends to have its buildings representative of the best in Western civilization. Particular attention is paid to hygienic and sanitary arrangements. Among suggestions that are receiving careful consideration is one from the United States Bureau of Education. Experts in the bureau have urged that the boys' dormitory be equipped throughout with outdoor sleeping-rooms. It is declared that in this way the school will not only be able to get ten per cent more work out of the boys than it would otherwise, but "it will proclaim to the Chinese youth and to the world at large the value of fresh air."

Educators and parents who are skeptical of the value of examination marks will draw encouragement from the experiment recently conducted by Supt. Harry L. Eby, of Alliance, Ohio. An arithmetic test was given in the eighth grade, and Mr. Eby sent one of the papers to all the teachers in his system, with a request that they grade it as if it were of a pupil in their own classes. The resulting percentages ranged from 40 to 93. In the eighth grade alone, where uniformity might have been expected, four teachers marked the paper, 50, 75, 89, and 90, respectively. In other words, one teacher would have failed the pupil outright; a second estimated him as only fair; and two others considered him practically in the 90 class.



### Pessimism Versus Optimism

PESSIMISM in the gloaming  
Sat and mused with dark forebodings:  
Picturing skies all void of sunlight,  
Sketching landscapes bare and sterile,  
Failed to see the hand of Heaven  
Ever guiding, e'er directing,  
In the course which mortals tread.

Optimism, countenance beaming,  
Entered with hope's banner streaming  
In the breeze, his cohorts following;  
Joy, with strong, unfettered pinions,  
Hovered o'er and wreathed his countenance  
With bright smiling; sweet Contentment,  
Without show or ostentation,  
Upheld hope's triumphant banner,  
Yet, by some deep inward calling,  
Fixed its ken on realms supernal.

Optimism speaks:—

Pessimism, why complaining?  
Thinkest thou a fairer portion  
Than that which thou hast been sharing  
Should be rendered to thee hence?

Pessimism speaks:—

Yes, perchance I was complaining,  
Recollection is so grieving;  
Reminiscence calls to mind  
Times with poverty incumbent;  
Trials oppress; tempestuous surging  
Wanes the strength; and cold wind's harry  
Chills the flower which fain would blossom;  
Death's cold finger, devastating,  
Wakes lone Grief to lamentation:  
And the future seems no brighter,  
For we're told in words of logic  
That the past is termed a standard  
For discernment of the future.

Optimism speaks:—

Pray give ear to weightier logic:  
Yea, the past doth shape the future;  
Trial doth weld and storm doth strengthen  
For the life which lies before us.  
Let thy thoughts be optimistic;  
Glean a lesson from afflictions;  
Make it worth thy time in grieving.  
Discontentment, ah, 'tis brewing!  
Let it not be standard-bearer.  
In the hands of fair Contentment  
Let thine ensign court the breezes.  
There are days when heart seems heavy,  
And eyes fain'd give o'er to weeping;  
But then be thou not discouraged.  
There are times when sunshine brightest  
Will be void of observation;  
Be thou cheerful, keep on smiling,  
Yonder clouds will scatter widely,  
And the sun again resplendent  
Will thine onward path enlighten.

What if yon orb, light reflecting,  
Never western skies adorning?  
We should mourn for hours of twilight;  
We should grieve for nights of darkness;  
If our days were naught but gladness,  
We should lose appreciation,  
And should weep for lack of weeping,  
And should grieve for lack of grieving.  
But when sun in orbit travel  
Doth its beaming face hide from us,  
And the last faint glow has faded,  
Which did speak of its departure,  
Then the long, dark night doth follow;  
Pain and trials seek the weary;  
Burdens press the lonely watcher;  
But upon life's surging ocean,  
Mariners, their barks still rising  
On the swelling inundations,  
Seek to guide their vessels onward,  
With no light save faith's fair beacon  
To direct them on their voyage.  
But what joy, appreciation,  
Doth these weary hearts enlighten  
As they view the eastern heavens  
All aglow with reddening glory,  
Which doth drive away the shadows,  
And disperse the night of darkness.

It is thus in life allotted:  
Brightness oft gives o'er to shadows,  
Shadows oft dissolve in darkness,  
That a lesson, if well heeded,

Will prepare and shape and mold us  
For a greater undertaking.  
Let us not succumb to sorrow,  
Let not trials overwhelm us;  
Let us wrestle, struggle, with them,  
Till they yield, and give us victory.

WALTER J. PAULSON.



### XIII—Review

(December 28)

REVIEW memory verses for the quarter.

#### Questions

1. What is our condition without God? What will he do for us?
2. What must be our standard of attainment? Matt. 5:48. How can we reach this perfection? Rom. 3:24.
3. By what change in us is it made possible? John 3:7. How will this new birth be manifest to others? Gal. 5:22, 23; Col. 3:13, 16.
4. What will love for God lead us to do? 1 John 5:3; John 14:15. What precious promise has been sounded down through the ages to encourage obedience? Ex. 19:5.
5. In what should we rejoice? When should we be patient? Rom. 12:12. Why? 2 Cor. 4:17.
6. Why did David praise the Lord? Ps. 28:7. How does the Lord protect the righteous? Ps. 34:15, 17-19.
7. By what little member would Satan turn us out of the heavenly way? James 1:26. What is the greatest victory ever gained? Prov. 16:32.
8. What words of instruction do we find in Prov. 1:8, 9; in Prov. 23:22, 23, 26?
9. Where is God especially to be feared? Ps. 89:7. With what spirit should we worship him? Ps. 5:11. Why? Verse 12.
10. What invitation is given especially to the young? Eccl. 12:1. What admonition and warning are given to all? 1 Peter 5:8; Heb. 4:1.
11. How complete should be our consecration? Rom. 12:1, 2; Matt. 6:24. Who will then order all our ways? Ps. 37:23.
12. What great commission did Jesus leave with his disciples? Matt. 28:19, 20. Who are his disciples? John 8:31, 32; 13:35.
13. How may we glorify our Heavenly Father? John 15:8.
14. What power is promised to us? Matt. 28:18; Phil. 4:19.
15. What question is asked in Heb. 2:3?
16. How does Solomon sum up our whole duty? Eccl. 12:13.
17. What will be the reward of the faithful? 2 Tim. 4:8; Matt. 25:23.

SOME persons, it is said, would rather cherish a misery than a joy. Are you of that number?



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BETTER to stem with heart and hand  
The roaring tide of life, than lie  
Unmindful, on its flowing strand,  
Of God's occasions drifting by.

Better with naked nerve to bear  
The needles of this goading air,  
Than in the lap of sensual ease forego  
The godlike power to do, the godlike aim to know.  
— Whittier.

## The Cancer Germ

DR. GASTON ODIN, of Paris, claims to have discovered the germ that produces cancer. This germ has escaped detection so long, the French savant claims, because it conceals itself within the red corpuscles.

By good fortune, after considerable experimentation, Dr. Odin found a reagent that, when placed in a drop of blood from a cancerous person, would cause the germ to emerge from its hiding-place. The nature of this reagent the physician will not disclose to the medical world until he has perfected his work of finding a cure for the cancer disease.

## What to Do With Prisoners

It was my privilege last month to listen to Thomas B. Tynan, warden of the Colorado penitentiary, who occasionally finds time to leave home and tell the intensely interesting story of how he has solved the question, not only of what to do with convicts, but how to reform them at the same time. He tells part of the story in moving pictures, showing his men in citizen's clothes, busily at work drilling, blasting, plowing, hauling, and surfacing; often out in the mountains, in sparsely settled districts, with every facility imaginable for escape. But one looks in vain for the customary guards with long-range rifles at command. No guards, no shackles, no distinctive garb, absolutely nothing to distinguish the convicts from their foreman, except that the foreman rides a horse. These men work in large bodies, often several hundred; only one barrier stands between them and escape; and it is impossible for the moving picture to show that barrier, for it is a man's honor. In fact, the honor system was partly a result of the discovery that to guard the prisoners efficiently, the expense was equal to the saving effected by their work, and hence of no financial advantage. And so the honor system was proposed amid plenty of predictions of failure and very few of success. Now, as Warden Tynan remarks, the Colorado con-

vict is no saint, and about twenty-five per cent of them are dangerous, and should be confined. Of the seventy-five per cent some really should not be where they are, and all can be trained to better citizenship for return to freedom by treating them as men. In accordance with this theory, which has been confirmed in practise, the men who are allowed to go out on the work are treated, housed, and directed in their work like any well-arranged railroad camp outfit. They construct their own temporary living quarters, but there are no bolts on the doors nor bars on the windows. True, they all retire to bed and arise at one time, but so do soldiers. The men are worked in rural districts; they do not go to town, and unless a man breaks a rule, he need never return to the prison. He can serve his full term in the open air; and when his time expires, he has become proficient in something — surveying, blacksmithing, farming, or other occupations for which there is a demand. Not only that, but by earnest, faithful work of eight hours daily and observance of the rules he can reduce a five-year term one half.

During the past two years only one man in two hundred has run away; he is invariably recaptured, and must then serve ten years within the prison walls. Colorado is about to put all its county jails under the penitentiary board, when the jail prisoners will be worked in the same way. The spirit of the Colorado system is "unconscious reform," growing out of the feeling that some one has confidence in him. The good roads they build and the farms they work for their own support are a part of the means to the greater object.

Every year, in the United States, 150,000 men are added to the prison roll. Of these about 112,500 are capable of reform under the Colorado plan. But from the mere standpoint of wasted production this vast army should be employed.—H. H. Windsor, in *Popular Mechanics*.

## Quotations From My Note-Book

'Tis pitiful  
To court a grin, when you should woo a soul;  
To break a jest when pity would inspire  
Pathetic exhortation; and t' address  
The skittish fancy with facetious tales,  
When sent with God's commissions to the heart!  
— Cowper.

Man has too many enemies than that he can afford to be his own foe.—Ralph Waldo Emerson.

"He who loves goodness, harbors angels, reveres reverence, and lives with God."

What is strength without a double share  
Of wisdom? Vast, unwieldy, burthensome,  
Proudly secure, yet liable to fall  
By weakest subtleties, not made to rule  
But to subserve where wisdom bears command.  
— Milton.

"Think truly, and thy thoughts  
Shall some soul's famine feed;  
Speak truly, and each word of thine  
Shall be a fruitful seed;  
Live truly, and thy life shall be  
A grand and noble creed."

Let us be content in work  
To do the thing we can, and not presume  
To fret because it's little.

— Elizabeth Barrett Browning.

Fame is vapor, popularity an accident, riches take wings, those who cheer to-day will curse to-morrow; only one thing endures — character.—Horace Greeley.

The hearts of men are their books; events their tutors; great actions are their eloquence.—Macaulay.

EDMUND C. JAEGER.