

# The YOUTH'S INSTRUCTOR

Vol. LVIII

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No. 51



## The Song of the Seraphs



Suddenly there was with the angel a multitude of the heavenly host praising God. — *Luke.*

We are led by his way, by his luminous way  
That climbs through the heavens of light;  
For we are the sheep that on earth were the prey  
Of the wolves all one terrible night.

We are filled by his truth, by his marvelous  
truth,

We are filled as the sea by her tides;  
'Tis the spring of that dewy and deathless youth  
Where the King in his beauty abides.

We are saved by his life, his victorious life;  
For its laws are the strong arms that hold;  
There's rest in our labor and love in our strife—  
One shepherd, one pastor, one fold.

— *Edwin Markham.*



AN improved air-ship has been announced by the inventor, Mr. E. A. Geogegan, of Belfast, Ireland. This new aeroplane will go either backward, forward, or remain stationary in the air. It will also rise without a preliminary run.

JEAN HENRI DUNANT, known as "the gentleman in white," and founder of the famous Red Cross, passed away on the last day of October at the village of Heiden, near Geneva, Switzerland. He was one of the world's greatest benefactors.

IN the year 1909 nearly five thousand children died from whooping-cough in the United States. Ninety-five per cent of these deaths were of children less than five years of age. The counsel of experts is to keep young children away from the whooping-cough.

No one has ever been able to ascertain the number of the stars; and every improvement in the art of photography seems to reveal more and more stars. According to Sir George Darwin, it is perhaps not excessive to guess that even to-day a thousand million might be counted.

A GERMAN inventor has conceived the idea of felling trees with wire instead of with saw or ax. He uses for the purpose wire about one twenty-seventh of an inch in diameter, which is kept in rapid motion by an electric motor. A tree twenty inches in diameter can be felled, it is claimed, in six minutes.

THE rainiest place on the continent of Europe, so far as meteorological records show, is in the mountains of Dalmatia, Austria, back of the Bay of Cattaro. The average rainfall for the past twenty-two years has been 182.76 inches, the wettest year being 1901, with a rainfall of 241.53 inches. The average rainfall of the eastern part of the United States is from fifty to sixty inches.

"THE house in which Daniel Webster was born 128 years ago, is to be preserved to the nation as a commemoration of the great statesman and orator. It stands on the Salisbury road, four miles from Franklin, New Hampshire, and was built by Webster's father more than a century and a half ago. It is in the old Colonial style, and has a venerable appearance, being festooned with ivy and climbing wistaria."

"FOR amazing quickness of growth into huge figures of business, nothing has been seen before to match the industry of making automobiles and their fittings." Since the beginning of the year 1910 there have been made at the two hundred eighty manufacturing concerns in the United States, one hundred eighty-five thousand automobiles, to the value of two hundred forty million dollars. The number of persons employed by these auto manufacturers is one hundred forty thousand. "This does not mean merely so many machines at such a price; it means that the making of these cars involved the importation and manufacture of vast quantities of metal, rubber, leather, wood, hair, silk, wool, and glass, and the making of many accessory articles which the luxurious automobile owner of to-day deems absolutely essential to his pleasure and comfort, though he knew nothing of them ten or twelve years ago."

A NEW turpentine-separator has recently been invented, designed for use in separating turpentine as it comes from a still, from the water, sediment, and other impurities, permitting the final delivery of the turpentine free from impurities.

A DECISION of much significance has been handed down by Judge Thomas J. Morris, of the United States Circuit Court at Baltimore, to the effect that a Negro can not be disfranchised by any test which distinguishes between blacks and whites. This decision makes void the "grandfather clause" of the Maryland law providing that no one can vote who could not vote in 1868, or, if not living then, whose ancestors could not have voted at that time.

"AT a native bathing festival recently held at Sorong, Agra, thousands of pilgrims were encamped on a strip of land near the Ganges to take part in the religious ceremonies. A sudden rise in the water converted this strip into an island, and two hundred persons at least were drowned; but the number would have been far greater but for the life-saving work of an elephant, who swam repeatedly into the stream, and by means of ropes pulled more than one thousand distressed pilgrims safely to shore."

#### Failure, a Friend

My failure is my friend, and not my foe,  
And bids me take fresh courage, be full bold,  
Not sink in craven sloth, but forward go,  
And prove e'en yet, I am of hero mold.

—Jessie Andrews, in the *Wellspring*.

#### Longitude and Dinner-Time

ABOUT eleven o'clock one morning Aunt Dinah was paring potatoes for dinner. "Now I reckon that all ober dis big worl' eberybody what's got anything to git a meal with is a-gittin' ready for dinner," she placidly remarked.

"O, no, Aunt Dinah!" said Miss Nina. "In New York it's just about dinner-time now, and out by the Rocky Mountains it won't be dinner-time for three hours yet."

"O my, Miss Nina! You plumb sure o' that?"

"Yes, very sure, Aunt Dinah."

"Well, I's mighty glad I libes in a Christian land, whar when it's 'leben o'clock it's leben o'clock, and we can't nebber git mixed up on the dinner-time."—*Youth's Companion*.

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# The Youth's Instructor

VOL. LVIII

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No. 51

## December for Prayer

ERNEST LLOYD

[We are sorry this article reached the office too late to appear in the issue just preceding the week of prayer. But since its principles apply, not to any special season alone, but to all time, it is issued just as written.—EDITOR.]

**T**HE Master calls us to prayer. "Unto you, O men, I call; and my voice is to the sons of man." In the first conversation that Campbell Morgan had with his beloved friend George Macgregor, they talked of the condition of the world, and of the great need there was of some new power with which to deal with men. Then, suddenly rising from the chair in which he had been sitting, and pacing the room with that earnestness that characterized him, Macgregor said, "Morgan, I would rather help train ten men to pray, than a hundred men to preach."

"At the moment," says Morgan, "I thought the expression superlative; but I have become convinced that he was right. He did not minimize the value of preaching, but he had come to understand that the supreme need is that Christian people should be able to pray intelligently and prevailingly."

No energy of our flesh, no activity of our church life, can excuse us from the first and constant duty and privilege of seeking God by prayer and supplication for that divine anointing of the Holy Spirit, which alone can qualify us for service and make our work effective. The prayer season this month attracts our attention to the fact that the Missionary Volunteer movement is rooted and grounded in the Master, and that loyalty to and dependence upon him are imperative. Without prayer this movement would lose its vitality and become sounding brass or a clanging cymbal. As the individual can not develop Christian strength and character without the daily meeting with the Master, so the Volunteer society that fails to recognize any need for a special season of united prayer, will fall short of its largest and best possibilities.

When genuine prayer has more place in our lives, we will have more power with God. Prayer is as real and as vital to-day as it was when Elijah, through prayer, brought back from the dead the widow's son. And only through fervent, heart-deep prayer can we be brought back to newness of life. Never was there a time in the history of our work when prayer was more needful. We stand on the threshold of new and enlarged opportunities and privileges. Our relation to these depends largely upon our relation to God. "Prayer has been the preparation for every new triumph, and so if greater triumphs and successes lie before us, more fervent and faithful praying must be their forerunner." All the abiding results of future triumphs will be the products of prayer. Dear reader, nothing should be allowed to interfere with our taking an earnest part in making this prayer season what the Master wants it to be,—a tarrying time for the baptism of the Holy Spirit—a baptism for service.

The Master calls us to prayer. "Pray ye." "Men ought always to pray." If the Master lived a life of

constant communion with the Father through prayer, how much must we, weak, fleshly, earth-bound mortals, need it. So his example is a call to prayer. Every weakness is a call to prayer. Every temptation is a call to prayer. Every problem is a call to prayer. Every promise and providence of God is calling to us to-day to take time to pray. Then let us unite at this time, not to talk, but to pray.

Youth united to pray! What an inspiration! Youth,—strong youth, youth with purpose, youth in our schools and institutions, youth who toil with their hands in the offices, in the stores, on the farm—youth, thousands of them, and of many types and temperaments, but united to pray. What an inspiring thing is this! Youth united,—unity of purpose, unity of effort, unity in prayer. "I and my Father are one." Verily, this is the unity that means strength. Never before in our history so wide-spread a union in intercessory prayer—joining hands and hearts in petition to the Father for blessings on the work and workers throughout his vineyard. Youth united to pray—to enter the place of prayer and pour out their hearts to God in behalf of a sinning world and its suffering children.

O, how much we young people need to pray to be kept true in these days of tremendous temptation, in these days of arrested growth of spirituality, in these days of large opportunity for effective testimony to the power of Christ! Think of the crying needs of non-Christian youth, millions upon millions of them, many dying daily without knowing the joy-bringing story of Jesus, or living with their faculties atrophied by neglect or ignorance. So many needs call us to prayer. A multitude of objects for prayer will throng our minds as we think of prayer. Let us think of it earnestly, seriously. "O Thou who didst spend the whole night in prayer with the Father, whose life must needs be nourished by constant spiritual communion with the Father, teach us how to pray!"

### Riches Not All

WHILE I was nursing at the Battle Creek Sanitarium, a number of years ago, there came to the institution a patient who was noted for his wealth, being president of a large corporation. His physical condition was such that no hope was given of his recovery, and he was told that not longer than a few weeks stood between him and eternity. His mother had been a devoted Christian, and in his boyhood days he had known a Saviour's love. Gradually the passion to acquire wealth gripped him, and finally stifled all his interest in the service of God. Now, almost at the brink of the grave, he became concerned about his soul.

At this time the late Mr. Crittenden, founder of the Florence Crittenden Mission Homes, was also a patient at the sanitarium, and a more earnest, conscientious Christian man I never met. Occasionally he conducted afternoon outdoor meetings on the lawn

for the patients, which were inspiring and helpful. To one of these meetings I took my patient in his wheelchair, and he seemed to drink in every word spoken. Finally he turned to me, and said, "I wish you would have Mr. Crittenden come and talk with me." I introduced him to Mr. Crittenden, who talked and prayed with him, and to him the patient opened his heart, expressing a desire to know again a Saviour's love.

As the old story of heaven's sacrifice of love was repeated to him, the tears ran down his cheeks, and he realized that Christ was still ready to receive him, after all his misspent years in hoarding up riches. This inspired hope in his sin-burdened heart. He yielded to the promises of God, and instantly a great change came into his life. Formerly he had been fretful and irritable; now he became calm and composed. He had feared death; now he really welcomed it, because it meant an end to his intense suffering. His hope of eternal life became a joy, to be seen in his face. In a few days he died, in the full assurance of faith.

God has a right to the best years of a man's life. No one is his own. All have been bought with a price. And while the Lord may forgive wasted years, yet he has been robbed of his due. Let us, then, not spend time accumulating this world's goods, and thus lose years of service for God and the salvation of our fellow men. The risk is too great. Our souls *may* be saved, but we and others will undoubtedly suffer loss because of our misspent life.

EDWARD QUINN, JR.

### What Shall We Do About It?

A POOR little girl sat shivering, one bitter cold night in midwinter, upon the steps of a bakery, where her mother used to send her for bread. The snow was falling fast, and her thin, tattered garments barely covered her emaciated form. She was weeping as if her little heart would break; and as she drew her shawl tighter around her, she took one end of it and wiped away the tears which were streaming down her face.

"O, dear!" she murmured, "I'm so cold and hungry. What shall I do? I shall have to die, like mama did, I guess."

"What are you doing here, little one?" asked a policeman. "Why are you not at home at this time of night?"

"I have no home," replied the child, somewhat afrighted. "My mama was buried to-day, and the people where she lived said they could not keep me. I must take care of myself."

"Have you no father to take care of you?"

"Yes, sir; I have a father, but I don't know where he lives," sobbed the poor, distressed child.

"Have you no friends to whom you can go?"

"I don't know where my friends are," answered the child, innocently.

"How old are you, my child?"

"Eight years, I think, sir."

"Well, come with me. I will find you a home. Give me your hand, and I will help you over the snow."

In a short time poor little Bessie was snugly sleeping in a good warm bed in one of the homes provided for such helpless, neglected children. Tears ran down the good, kind-hearted matron's face when she saw the poor, almost famished child eating a large bowl of hot milk and bread before going to bed.

This poor child and her mother had a comfortable home at one time, but it was ruined by rum. And the rum was sold by a man who paid for the right to sell it. And the man who bought it, and drank it, knew that it was robbing his family, and ruining him in this life, as well as in the life to come.

Not only does the drunkard know what harm the poisonous stuff will do him, but what sorrows and misery it will bring upon his family; and the saloon-keeper knows it also; and those who sell him the license know it as well; but they do not care.

If the drunkard can only satisfy his appetite, day after day, with the drink, which costs the price of his children's bread, he cares for nothing else. His children may starve, his wife sicken and die, his home totter and fall, but he cares not.

If the saloon-keeper can make his fortune easily, by standing behind his counter, dealing out liquid destruction, when he ought to be earning his living like an honest man, he cares not what are the consequences.

And if the country can gather the gold in its coffers by the hundreds and thousands which are annually paid for these licenses, the saloon-keepers may still continue in their respectable(?) business of making drunkards, and peopling the orphanages and almshouses, to their hearts' content. Shall we crush the rum traffic out of existence, and that right early, or shall we let it go on, year after year, spreading ruin and misery all over our fair and otherwise happy land?

If the curse is ever to be driven from our land, every Christian man and woman must be "up and doing." Each one has a work of some kind to perform. What our country needs to-day, and what our country wants to-day, is willing hearts.

Let us give our hearts "for God, for home, for native land," and the work will soon be accomplished.

ARTHUR V. FOX.

### The Queue of the Chinese

It is difficult for the foreign mind to conceive of a Chinese without his queue, and there is no doubt that, when worn with his native dress, it has added to the dignity and impressiveness of his appearance. Originally forced upon the Chinese people as a badge of servitude by the Manchu dynasty now occupying the throne at Peking, it ended by becoming an object of pride and solicitude on the part of many of its wearers.

The queue served many purposes. When coiled up, it indicated lack of respect for the people present. It was invaluable to the police, and to troops engaged in repressing insurrections, in capturing and holding prisoners. A whole bunch of the latter could be fastened together by means of their queues, and they preferred to face the most appalling tortures and death in its most terrible form, rather than to escape by cutting off and thus sacrificing their pigtails. Nor can I ever forget an idyllic scene which I witnessed in the neighborhood of Amoy many years ago, when a happy-looking Chinese was squatting on the ground in front of his door, allowing his snow-white pigtail to be used as a skipping rope by his two tiny grandsons, one of whom was swinging the queue and the other jumping over it.

The late Emperor Kwang-Su had hoped to inaugurate a reform, and abolish the queue, but had been prevented from doing so by his aunt and tyrant, the old dowager empress, who, for nearly half a century, ruled China with a rod of iron, irrespective of the emperors occupying the throne. The present regent,

who has enjoyed the advantages of foreign travel, has been supported in his views by those of his younger brothers and the other princes of the imperial house, who have visited Europe and America, as well as by nearly all government officials, nobles, and merchants who have been abroad.

They are all united in the idea that this distinctive coiffure, by emphasizing the difference between the Chinese and the foreign races, has impeded that better understanding between the two which is necessary to place the people of the Celestial empire in the enjoyment of those Western innovations requisite before China can hope to occupy a place in the front rank of the great powers of the civilized world. Prince Chun also believes that much of the prejudice entertained against his countrymen in America, in Australia, and elsewhere abroad, prejudice productive of outrage and of humiliating legislation, will disappear when they abandon their national coiffure and garb, and dress in the same manner as the white people among whom they cast their lot.

Finally, the prince regent, well aware of the danger to the throne arising from the hostility of the bulk of the Chinese nation against the now reigning dynasty imposed by the Manchu or Tartar conquest of some three centuries ago, is anxious to conciliate his small son's millions on millions of subjects by abolishing that most conspicuous reminder of their defeat; namely, the imposition by law of the Manchu style of wearing the hair. For until the advent of the so-called "Great Pure Dynasty" through the Manchu conquest in 1644, the Chinese people wore their hair long, usually tied up in a knot on the top of their heads, and it is only since then that they have been obliged to shave the front part of their heads.

#### As a Political Issue

What the masses of the Chinese people will say to the abolition of the queue by means of the recent imperial proclamation forbidding the shaving of masculine heads and the wearing of the queue, it is difficult to say. But there is no doubt that many of the Mandarin class have long ceased to regard the Manchu queue as a token of national servitude and humiliation, and will, on the contrary, construe the command for its removal as a disastrous concession to liberalism and to objectionable Western reforms.—*Baltimore American*.

#### Seed Thoughts

NEVER do anything that you would be ashamed to have any person in this world know.

Never say anything that you would be ashamed to have any one hear.

Never be found frequenting society and places where you could not take your Christian mother or sister. Never permit any person to be misled by wrong examples that you may set.

Never lose sight of the fact that you are at all times wielding an influence for either good or evil.

Never allow even your countenance to take on an immoral expression, or your speech to be accompanied by a wrong tone of voice.

Never lay claim to virtues that you do not possess. Simply be what your better judgment and conscience dictate that you ought to be.

Never forget at any time that you are morally bound to be your brother's keeper. J. W. LOWE.

#### Close to the Magnet

BEFORE some of the children of my congregation I once used this illustration: I showed them how a magnet would hold up a nail, and that magnetized nail another, and so on until finally the attraction was too weak to hold an additional one. It was the one closest the magnet that held the most; it is the one closest Christ who can be used most by him; and the nearer we come to Christ, the greater will be our usefulness to him.—*J. Stuart Holden*.

#### A Good Point

A RECENT speaker at an English Christian Endeavor convention told the story of a little boy who explained his falling out of bed by saying:—

"I presume I went to sleep too near where I got in."

"Many people fall out of church," continued the speaker, "because they go to sleep too near where they got in. It is the duty of Christian Endeavorers to get these people farther in, and set them to work."—*Selected*.

#### Ready for Any Wind

A FRIEND from Scotland said to me, speaking of a place where I had been: "Some time ago they had a storm that blew down between four and five thousand trees on the old estate." Do you know why? The storm came from an unexpected direction. The trees had never had a storm from that quarter before.

It is said that Edinburgh Castle, in all the wars of Scotland, was never taken but once. Then the enemy came up the steep rocks, where the garrison thought it was safe. They thought there was no need of guarding that place.

Very often temptation comes from an unexpected quarter, when one is off his guard. Hence the need of watching.—*Moody's Sermon on Temptation*.

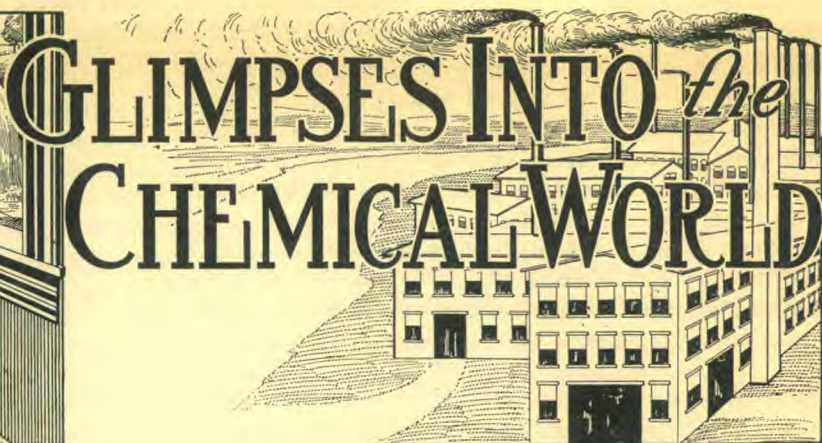
#### The Morning Watch Calendar

THE Morning Watch Calendar follows the Sabbath-school lessons. The verses each week are based on the same subject touched in the lesson for that week. For this reason the calendar will be helpful both to teachers and pupils. It will aid them in getting a more comprehensive view of the lessons, and remind them of giving some moments each day to the study of the Sabbath-school lesson.

And while it is doing this, it will also help those who use it to form the habit of sending their waking thoughts into the courts above. How much it would mean to the members of your Sabbath-school if every one of them, before taking up the daily routine, would follow in the footsteps of Him who early in the morning lifted his heart to the Father for guidance and strength for the day.

"A moment in the morning, a moment if no more;  
It is better than an hour when the trying day is o'er."

The Morning Watch Calendar makes a very dainty New-year's gift. Many Sabbath-school teachers are placing this little daily reminder in the hands of their pupils. Only five cents. Order from your tract society. M. E.



## The Earth's Atmosphere—No. 6

**T**HE word atmosphere is derived from two Greek words, meaning a sphere of vapor. The atmosphere, or ocean of air surrounding our earth, has the shape of an oblate spheroid, and extends probably to the height of two hundred miles above the sea-level, and weighs, according to Herschel, eleven and two-thirds trillion tons. The inhabitants of our world then walk about on the bottom of this great ocean of air, as the crabs and lobsters do in their natural habitat. But if our gaseous ocean were liquefied, it would be only about thirty-five feet deep, so would be a far less pretentious home than that of the fishes. The upper air is very rare, so much so that the space is regarded as almost a vacuum. The greater part of the weight of the air is within a few miles of the surface of the earth. It is the passage of electric discharges through the air of these upper regions that produces the splendid "northern lights." "It is probably from a portion of the atmosphere situated somewhere between its lower or grosser portions and its higher or more tenuous portions, that the electro-magnetic waves employed in wireless telegraphy are reflected, or thrown back to the earth, and are thus confined to the lower parts of the atmosphere, and prevented from being dissipated throughout the space that lies outside our atmosphere."

The air, as we have noted in a previous article, is a mixture of gases,—oxygen and nitrogen, together with the lately discovered gases, argon, metargon, neon, xenon, and helium. These are its *fixed ingredients*; that is, the relative amounts of these remain nearly the same at all times and places. The most important of the *variable ingredients*, those that vary considerably at different times and places, are carbonic-acid gas, the vapor of water, and ammonia. The first of these is necessary to the life of all ordinary vegetation; and there must be some vapor of water in the air to make it serviceable for respiration. There are also found in the air some occasional ingredients, as ozone, sulphurous vapors, and the vapors of hydrochloric and nitric acids. Then, much to our discomfort, there are usually present various kinds of disease germs. Analyses of air from the streets of large cities have shown that a man of average size will breathe into his lungs no less than four million germs every hour.

We have heretofore studied the uses of each of the two main constituents, oxygen and nitrogen. We have found that oxygen supports respiration and combustion, and the nitrogen dilutes the oxygen. The new gases recently discovered seem to be akin to nitrogen in their properties and uses, and they exist in too small quantities to merit much attention. Ramsey, the discoverer of these gases, found that six hundred thou-

sand quarts of air contained only about six twenty-fifths of a cubic inch of xenon.

### The Weight, or Pressure, of the Air

The utility of the air is so obvious that perhaps a study of the property that makes it of such great value in the industrial world, should next claim attention.

We do many things with various kinds of machinery, without understanding all the principles involved in their working; so the men of past centuries made use of the air in propelling their ships and in raising water to varying heights by means of pumps, without ever thinking that the air had weight or exerted pressure. The Lord had said, long before, however, through Job (Job 28:25), that he had given weight to the air; but men had not comprehended his meaning.

If you were to turn a tumbler upside down and place the rim under the water in a basin, and would then exert severe pressure on the top of the water, some of the water would be forced up into the tumbler. Again, if you had some means of removing all the air from the tumbler, and then inverted it with its rim completely immersed in the water in the basin, the normal pressure of the air upon the surface of the water in the basin, would alone be sufficient to cause the water to fill the tumbler. In the same way it has been found that the pressure of the air upon the surface of water in a well is sufficient to force the water up a pipe, when the air has been exhausted from the pipe by a few strokes of the pump handle. The events that led to the discovery of the important fact that air had weight, and so exerted pressure, are so interestingly described by Mr. Houston, in the "Wonder-Book of the Atmosphere," that I quote at length from him. He says:—

"It all began with the grand duke of Tuscany. There can be no doubt about that. When the new pumps came, they would not suck or draw water; and then there was trouble.

"It is no wonder that the grand duke was angry. He had set his heart on having those pumps in time to raise water for the fountains that were to play on his grounds during an approaching festival. He had instructed the pump makers to construct for him the best pumps possible; and now, when they were tried, they would not work. The grand duke was angry. He was in the habit of having things go just his way; so, when he found the pumps would not work, he soundly berated the pump makers.

"It is true, when their royal customer had explained that the pumps were to be used to raise water fifty to sixty feet from the wells, the men told him that the greatest distance they had ever been able to get a pump to suck, or raise water, was about thirty-two

feet. But this did not trouble the grand duke. He was ready to pay for the extra distance, and bade them go ahead and make better pumps. Willing to please the grand duke, and only too glad of the chance of making an extra charge, they made the pumps, and brought them to the duke.

"They were certainly good pumps, probably the best that had ever been made; but for all that they were not able to raise the water from the deep wells.

"Therefore, the grand duke was angry. He told the pump makers that those pumps must be made to work, and made to work soon. Then there was great excitement.

"Every one was suggesting things, both wise and otherwise, but nothing was of any use.

"Now, when the grand duke found that the pumps could not be made to work, he said:—

"Tell Galileo to come here."

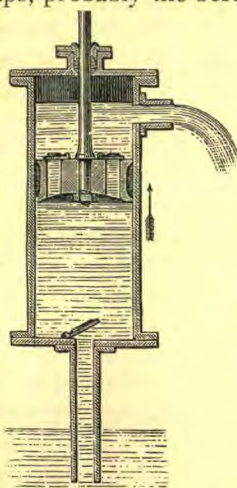
"This man's full name was Galileo Galilei. He was one of the most distinguished philosophers of Italy, and was born in Pisa, Italy, Feb. 18, 1564. When twenty-four years of age, he was elected professor of mathematics at Pisa.

"There is only space to tell a few of the remarkable things Galileo did for science.

"It was Galileo who discovered that a pendulum takes the same time to make one complete swing to and fro, whether it is swinging through a wide path, or through a very small path. The pendulum Galileo used for this discovery was the great suspended lamp in the cathedral, and having no watch, he employed the beating of his heart to tell the time. It was Galileo who built for himself an excellent telescope, and with it made many wonderful discoveries in astronomy. Among other things, he proved that the earth moved around the sun, and not the sun around the earth; or, in other words, that the sun, and not the earth, was the center of the solar system; and in this way he got himself into trouble.

"His enemies were powerful, and he was obliged to resign his professorship at Pisa. From this place he went to Padua, where he had such wonderful success as a teacher and lecturer that pupils came to him from all parts of Europe. He remained in Padua for eighteen years, when he was called back to Pisa, and became the principal mathematician and philosopher of the grand duke.

"It was natural, therefore, when no one was able to make the pumps work, that the grand duke should say, 'Tell Galileo to come here.' So Galileo came, and the grand duke asked him to look at the pumps, and get them to working properly. This trouble with the pumps occurred during the year 1641, and, as Galileo was born in 1564, he must at this time have been seventy-seven years of age. Old, blind, and shattered in health from the cruel treatment of his enemies, it would not have been surprising if he had been unwilling to give his best thoughts to such work as this of the pumps. It appears, however, that he did the best he could for the grand duke, sending word



As the piston of the lift- or suction-pump is drawn upward, a partial vacuum, and therefore a reduced atmospheric pressure is created in the cylinder below. The pressure of the air on the surface of the water in the well is then sufficient to force water up into the cylinder.

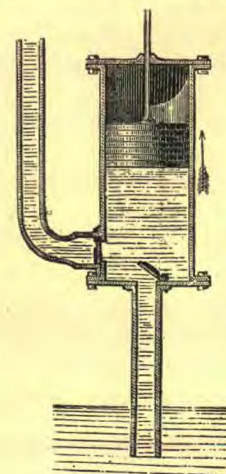
that the trouble would be found in the valves; that if they were made better, the pumps would work. The pumps were, therefore, sent back to the makers, with instructions to make the valves work more freely. This was done; but still the water would not rise; so Galileo was sent for again. Aided by his pupils, the philosopher once more tried to find out the difficulty; but, do what they would, they were unable to make the pumps suck or draw water to a greater height than thirty-two feet.

"But neither the grand duke nor the pump makers were to be blamed for their ignorance. At this time, 1641, it was not known that air possesses weight; and thus it was not even suspected that the atmosphere exerts a downward pressure on the water in the well, or on other things on the surface of the earth.

"Instead of actually trying experiments, they attempted to reason out the causes of things; and up to that time the world had been satisfied with the following explanation: The water rises in the well pipe connected with a pump, because, if it did not, there would be nothing left in the pipe, and '*nature abhors a vacuum.*' The world had been satisfied with this explanation up to 1641. And, indeed, this was the explanation that Galileo, great philosopher though he was, believed; for, when he found by actual trial that the pumps would not suck water through a greater height than thirty-two feet, he sent to the grand duke the following remarkable opinion. He said that the pumps would not operate because, although nature abhorred a vacuum, yet she did not abhor a vacuum greater than thirty-two feet of water; an opinion which, had it been delivered by the Delphic oracle, could have been proved at this late day, when we know so much about atmosphere pressure, to have been true.

#### The Experiment of Torricelli

"But, while Galileo was endeavoring to discover the cause of the pumps not sucking, or drawing water up in the pump pipe higher than thirty-two feet, there was, among the many pupils who were trying to aid him, an especially bright young man named Evangelista Torricelli. As we have seen, no satisfactory solution of the difficulty was reached then; but Torricelli continued to give the problem so much thought that, in 1643, less than a year after the death of his old master, he announced to the world his great discovery that water is raised in pump pipes from wells by reason of the pressure of the air, and not by any reason of any abhorrence of a vacuum. By this discovery, Torricelli acquired a reputation in the scientific world that immortalized him.



The force-pump can be used to raise water higher than the lift-pump, because the downward stroke of the piston forces water from the cylinder beyond the height to which it has been raised by atmospheric pressure.

"It appears that the apparatus employed by Torricelli in his first experiment, was not, as is generally stated, the glass-mercury tube, but an apparatus made in imitation of the grand duke's pump. It consisted of a glass tube sixty feet long, placed in a perpendicular position, with its lower end below the surface of water. He applied a suction-pump at the upper end of this

tube, and found that the best he could do was to raise the water thirty-two feet. He then reasoned to himself that, if the true cause of the water rising in the pump pipe was, as he believed, the pressure of the air against the water in the well, if he employed a denser liquid, such as mercury, the height to which the pressure of the air would raise it, would be inversely proportional to its density.

"Torricelli's experiment is now generally made as follows: The experimenter obtains a glass tube about four feet long, sealed at one end and open at the other, as shown in the illustration. Filling this tube with mercury, and placing a finger over the open end, he inverts the tube, and inserts the open end below the surface of a quantity of mercury in an open vessel. Then, holding the tube in a vertical position, he takes away his finger from the open end of the tube, when a part only of the mercury runs out, the rest being supported at a height of about thirty inches above the level of the mercury in the open vessel. By this simple but beautiful method, it was practically in this way that Torricelli proved, beyond any reasonable doubt, that it is the pressure of the air and not the abhorrence of a vacuum that causes the water to rise from a well to a pump.

"Torricelli's discovery caused great excitement when it became known in different parts of Europe. Of course, in those early days, some little time was required for news to spread. There was no telegraph or telephone, so that for the news to reach some countries a year or more was necessary.

"I regret to say that in many parts of the world, when this great discovery was announced, intelligent men, instead of rejoicing that so great a secret of nature had at last been discovered, refused to accept Torricelli's explanation. They appeared to think that there was something wicked in rejecting the long-cherished idea that nature abhors a vacuum.

"The discovery of Torricelli was made in 1643. Unfortunately, Torricelli died shortly afterward, in 1647. His experiments, however, were continued by other able philosophers. Among these was a distinguished French mathematician, Blaise Pascal.

#### Pascal's Successful Experiment

"Pascal was born in France in 1623. While a child he exhibited such proofs of ability in mathematics that he was kept in ignorance of geometry, lest his fondness for it should interfere with his other studies. But one day his father was surprised at finding the lad (then only twelve years old) demonstrating on the pavement of an old hall in which he played, by means of a rude diagram traced with a piece of coal, a difficult theorem of Euclid, the great geometrician. Being permitted to continue his studies, Pascal composed, when only sixteen years of age, a treatise on the conic sections, a very difficult branch of mathematics, concerning circles, ellipses, hyperbolas, and parabolas, which aroused the admiration and astonishment of the greatest living mathematicians. When only nineteen years old he invented an arithmetical computing machine, and by the time he was twenty-six, he had composed many mathematical works, and made many experiments in pneumatics and hydraulics.

"Pascal began experimenting with Torricelli's great

discovery in 1646, one year before Torricelli's death. In repeating Torricelli's experiment, instead of employing mercury, Pascal used longer glass tubes closed at one end, which he filled with different kinds of liquids, such as wine or water, inverting these tubes in open vessels filled with the same kind of liquids.

"Instead of meeting with approbation, Pascal's experiments were bitterly opposed. In order to demonstrate the correctness of Torricelli's discovery beyond any possibility of doubt he planned an experiment, which I will let him describe in the following extract from a letter he sent to M. Perrier, his brother-in-law:—

"I have thought of an experiment, which, if it can be executed with accuracy, will alone be sufficient to elucidate this subject. It is to repeat the Torricellian experiment several times in the same day, with the same tube, and the same mercury; sometimes at the foot, sometimes at the summit of a mountain five hundred or six hundred fathoms in height. By this means we shall ascertain whether the mercury in the tube will be at the same or a different height at each of these stations. You perceive, without doubt, that this experiment is decisive; for, if the column of mercury be lower at the top of the hill than at the base, as I think it will be, it clearly shows that the pressure of the air is the sole cause of the suspension of the mercury in the tube, and not the horror of a vacuum; as it is evident there is a longer column of air at the bottom of the hill than at the top; but it would be absurd to suppose that nature abhors a vacuum more at the base than at the summit of a hill. For, if the suspension of the mercury in the tube is owing to the pressure of the air, it is plain it must be equal to a column of air whose diameter is the same with that of the mercurial column, and whose height is equal to that of the atmosphere from the surface of the mercury in the basin. Now, the base remaining the same, it is evident that the pressure will be in proportion to the height of the column, and that the higher the column of air is, the longer will be the column of mercury that will be sustained.'

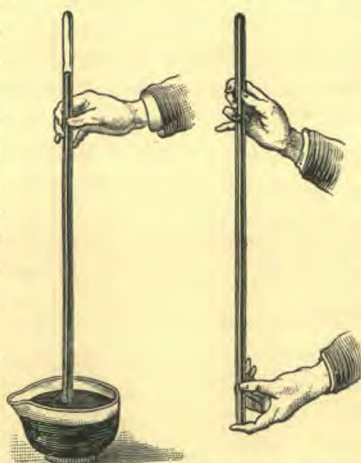
"This great experiment was made on the nineteenth of September, 1648, on the highest mountain in France, the Puy-de-Dôme, near Clermont. As Perrier climbed to the top of the mountain with the mercury tube, the mercury fell until it was three inches lower in the tube than it was at the base. The experiment was repeated on different sides of the mountain at different times up to the year 1651, and always with the same result.

"Pascal made other similar experiments by carrying the mercury tube to the top of the high steeples in Paris, and thus established, beyond any peradventure, the fact that the mysterious power which was known under the name of 'nature's abhorrence of a vacuum,' was really the pressure of the atmosphere."

Even now we sometimes hear persons talking of nature's abhorrence of a vacuum. But the up-to-date scientist knows nothing of this assumed animosity on the part of nature.

F. D. C.

He was ready to sacrifice everything to his principles—which was right; but he sometimes mistook his prejudices for his principles—which was tiresome.—*Ellen Thornycroft Fowler.*





# 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.



## Miscellaneous Suggestions

**W**HEN sewing sleeves in a waist, measure back from shoulder seam one inch; crease the arm-hole at this point, and the spot exactly opposite will be the place to put the under-arm seam of the sleeve.

Tooth-brushes should be washed once or twice a week in some antiseptic solution, strong salt water or bicarbonate of sodium and water being two good and readily provided cleansers. Then the brush should be placed in the sun to dry.

Stains that will not yield to hot water, may be removed by rubbing gently with a solution of oxalic acid and rinsing well in warm water. This last is important; for the acid will rot the goods unless thoroughly and immediately washed out.

Scorch, unless very brown, often comes out after being exposed to hot sunlight. If badly scorched, dip in soap-suds, and then put in the sun, or use a borax-water bath, and dry in the sun. Lemon juice with salt and sunlight is another effective remedy.

To put a glaze on white linen add a pinch of borax to the starch, also a small piece of white wax. The borax acts like starch, giving the desired stiffness to cuffs and collars. First iron the pieces perfectly dry; then rub with a damp cloth, and iron across the material, using considerable pressure on the blunt end of the iron.

If the color has been removed from goods by dropping lemon juice or some other acid upon it, the color may be restored by saturating the spots with ammonia, and then washing with clear cold water. If the ammonia salts are not washed out, the light spots will return. The ammonia should not be used in case of nitric acid.

The following is recommended for ridding the kitchen of roaches: Take about five cents' worth of borax, put in a pie pan and warm gradually, stirring now and then until it is heated through and through; it will boil in the pan if you heat it well. Sprinkle this all around where the roaches dwell, and in a few days the pests will have disappeared.

### Picking Flowers by the Way

ONE of the most impressive sermons I ever heard was preached to me a few days ago, while I was canvassing for "Great Controversy." It was given by an old colored woman some eighty years old. She was sick and destitute, and I had taken her a few comforts.

Seeing a large Bible lying on the table, I said, "Grandma, can you read?"

"I don't knows one letter from anodder," she replied. "I opens de Bible and looks ober de pages, but I don't reads a word."

I read to her from the fourteenth chapter of John, especially emphasizing the thoughts in the third and eighteenth verses. She then spoke in beautiful terms of the Saviour she expected soon to come for her, and of the mansion prepared for her, and of her anticipated joy in meeting her father, mother, and loved ones on the resurrection morning.

"My feet is firmly planted on de Rock Christ Jesus," she said; "I's gwin on ebry day to'rds dat mansion. I spects to get thar."

"Grandma, when Christ, our blessed Saviour, calls forth the sleeping saints, at his coming in the clouds of heaven, we'll see each other again," I said. "You will not be sick then. These mortal bodies of ours will be changed to immortality, in a moment, in the twinkling of an eye. So keep up courage, and remember the Saviour will soon come; and his blessed promise is, 'I will never leave thee, nor forsake thee.'"

"Yes, chile, I knows we'll meet on the resurrection mornin', if we's faithful," she answered. "So don't stop to gadder flowers; you jes' go on straight, and don't stop."

All that day and for days afterward I pondered those words. What could they really mean? It seemed as if they rang through my very being: "Don't stop to gadder flowers." The forbidden flowers are the beautiful things of this world which Satan brings to entice us, causing us to stop and admire that which seems sweet and fragrant, and perhaps surrounded and intermingled with that which we love most. They are the attractive places in which Satan uses his wiles to entrap us, enticing us to loiter, and finally pluck and wear the poison flowers. Many persons who have basked in the sunlight of Jesus' love and presence, have felt the withdrawal of his presence, because of loitering by the way, and admiring and gathering poisonous flowers.

Satan does not bring before pure minds ugly and undesirable things; for he knows they would be rejected immediately. It is always the beautiful, enticing; and lovely things presented through which he tempts us.

O, may Jesus help us to the place in our experience where we can endure temptation! Then on the new earth we can pluck and enjoy the never-fading flowers. There sin and sickness will be no more forever.

ARTHUR V. FOX.

### In December

With whisper and rustle and start and hush,  
The dry leaves murmur on tree and bush.  
On somber pines, with boughs bent low,  
Forsaken nests are piled with snow.  
The chickadees, alert for seeds,  
Chatter and cling to swaying weeds.  
The snow drifts deep in the country ways,  
And short and cold are the cheerless days.  
Yet, fair on the brow of the frozen night,  
The Christmas stars shine large and bright.

—Sara Shafer, in *The Outlook*.



### The Instructor Band of Mercy

**A** FEW weeks ago an invitation was extended to the readers of the INSTRUCTOR to join its Band of Mercy. Some names have been sent in; but we are certain that there are many more who will gladly lend their influence to the work of the band.

The accompanying pledge gives the purpose of the band. And only those who are intimately acquainted with conditions throughout the country, know the full need of men and women espousing the cause of the dumb animals. Perhaps no animals receive more unkind treatment than do the horse and dog, two of man's most faithful servants. Why is it not laudable for us all to unite in securing for these and all the rest of our animal friends humane treatment? Let us begin the work by pledging our own kindly treatment of them, by signing the following pledge, and sending it in to the editor:—

#### The "Instructor" Band of Mercy Pledge

I hereby promise to treat all animals kindly, and if I must destroy them, to do it humanely. I also promise to endeavor to secure for the animals similar treatment from other people. If for any reason I am led to break this pledge, I will report the same to the INSTRUCTOR, that my name may be removed from the membership list.

Signed.....

#### The Truth About Mexican Bull-Fights

THE Mexican bull-fight is a cheap attempt to commercialize blood, pain, torture, revolting brutality, and savage instincts. It seeks to coin money through suffering, mutilation, and death. The American tourist is the special subject of this vicious exploitation.

As a spectacle, it is sickening in its hideous cruelty. As a sport, it is the worst gold brick ever palmed off on a credulous visitor. As a pageant, it is tawdry and ineffective. Mexico does not produce capable native bull-fighters, and the practise would die out but for the patronage of tourists.

Mexican bulls are tame and docile creatures. They will not fight well. Heated darts are plunged into their living, quivering flesh repeatedly to overcome this objectionable good-nature. Fireworks are fastened to their bodies, and exploded to burn and craze them. They are lacerated, torn, scorched, tortured, and terrorized, in order to earn American money and, incidentally, to entertain American visitors.

Why force amiable animals to fight? Who is to be impaled on their sharp horns? Is it a human being?—Certainly not. Mexican bull-fighters are excellent insurance risks. "Half-starved horses, worn out with faithful service, costing fifteen to twenty pesos each, are led in," writes E. C. Butler, of the Mexico City S. P. C. A. "They are blindfolded over one eye, and

forced blind side on the horns of the bull. They can not see where they go." And this is the "sport" which Americans go to see. It is infinitely less humane than a slaughter-house, and infinitely less excusable.

"The bull rips them open, and then chases men with red capes. Did it end there, it were less tragic." The horses' protruding bowels are pushed back. Their gaping wounds are stuffed with cotton, and they are sewed up. Then the rider mounts the poor beast once more, and it is forced back into the ring for fresh mutilation. Worse still, it is frequently kept for a whole week in agony, and again led into the ring for renewed torture, in order that Americans may get their money's worth of entertainment; for it is their patronage which keeps this wretched business going.

Finally, the unfortunate bull is killed, and perhaps the performance is begun all over again. Thousands of cultured and humane Mexicans earnestly desire that this great blot on their civilization be eradicated. The Pope has condemned the practise. The governor of one of the Mexican states has recently abolished it altogether. One of the presidents of Mexico made determined efforts to wipe it out. The question now rests with the American tourist. The responsibility is his. If he will withdraw his patronage, the practise is doomed. Will he, for the sake of decency and humanity, help to stop it? "By the eternal law of right, bull-fighting will have to go."

The *Diario del Hogar*, a newspaper published in the Mexican capital, says of bull-fights that there is nothing so demoralizing and brutalizing, no spectacle so ignoble, as that which simply appeals to the lower and bestial instincts in man. The *Mexican Herald*, published in the City of Mexico, declares (Feb. 12, 1908) that "the bull-fight consumes the surplus earnings of the artisan class which the pulque-joint leaves; . . . no money is put by; nay, the most rudimentary decencies and comforts of the home, the urgent needs of the family, the food and the clothing of the little ones, and hence their health and often their lives, are sacrificed to the dominant passions." The *El Paso (Texas) Herald* says: "Bull-fights are wrong, because they are needlessly cruel and wholly degrading. Merely to witness such an exhibition defiles the mind and sears the soul." Can Americans afford to assist in perpetrating this great wrong?

The true measure of a nation's civilization is its humanity. Gradually the cruel and inhuman practises of prehistoric savage ages have been eliminated in civilized countries. A hundred years ago, dog-fighting, bull-baiting, and rat-baiting still lingered as regular Sunday amusements for all classes in Anglo-Saxon countries. Now they have practically disappeared, and have fallen under the ban of the law. Public condemnation has stamped them out.

If a promoter of a Mexican bull-fight should attempt a performance in the United States, he would be mobbed. There would be a riot of indignant citizens if he persisted. The law would be invoked. But when a representative of the highest and best the United States stands for,—its education, its religion, its morality, its justice, mercy, and humanity,—visits Mexico, the first thing he usually thinks of is to rush off to a bull-fight. Does the average American have a two-faced conscience which looks one way in Mexico and another way at home? Is he a hypocrite, or only heedless?—*William O. Stillman, President American Humane Association.*



## The Announcement to the Shepherds

IN the fields of old Judea,  
Watching o'er their flocks by night,  
Were some lonely shepherds waiting  
For the dawning of the light.

Suddenly the gloom was lightened;  
Lift their eyes they did not dare,  
For the glory of Jehovah  
Shone about them everywhere.

Then an angel, tall and beauteous,  
Kindly said to them: "Fear not;  
For I bring you joyful tidings  
Of the Saviour ye have sought.

"In the city of King David,  
With a manger for his bed,  
Is the Babe foretold by prophets,"  
Thus the glorious angel said.

Then the hosts of angels with him,  
Lighting up the whole broad plain,  
Sang of God, his love and mercy;  
"Peace on earth," the glad refrain.

Then the radiant angels left them,  
And the shadows came once more,  
Till the hills and fields around them  
Were as dark as e'er before.

So they hastened to the city,  
Telling all they met the news  
Of the Saviour so long promised,—  
The desire of all the Jews.

And when kneeling by the manger  
Where the infant Christ was lain,  
They told Mary of the angels  
They had seen upon the plain.

Then the shepherds left the city,  
Praising God with joyful song,—  
He who gave his Son to ransom  
This poor world from sin and wrong.

ELOISE CASE.

## A Christmas Conscience

**A**LL the neighbors thought it strange that Bertram Dodge, after the death of his mother, announced his intention of staying in the old home with his sister Helen, who was but five years old.

"We shall manage very well together here," Bert had said concerning the offer of distant relatives to adopt Helen.

"It was mother's wish that we should stay together, and it's my wish, too; I can give her more real affection than strangers, and she shall not suffer for food or clothing. They would want to change her name if she went to live with them, and that I could not stand. No, we'll stay together, won't we, little sister?" and he stooped and kissed the little girl as he spoke.

The house was a tiny red one in the suburbs of a little town. There was only one dwelling near it, and that was just across the road,—a little wooden building where lived the Widow Hawes and her seven noisy, rollicking children.

Bert's determination to remain in the old house and to keep his sister with him was partly due to the fact that Mrs. Hawes encouraged him to do so.

"I'll help you all I can," she said; "and Helen can come over and play with my little Susy and Maggie when you have to be away at work. She won't be any trouble to me, and not the least in the way."

Bert was thus able to accept temporary employment. He was a robust boy of seventeen, and willing to work. It was not easy to find employment in such a small town, and simple as were his wants and those of Helen, he did not find it easy to supply them, and there were the debts incurred by his mother's long illness and death, which he wished to pay as soon as possible.

"If I could get steady work somewhere, I'd be all right," Bert often remarked to Mrs. Hawes.

"O, you will before long!" she always replied cheerfully. "One who is willing to work always finds something sooner or later."

But there were no demands for Bert in any permanent position, and the long cold winter had set in earlier than usual, and occasional work became harder to find.

Helen and Bert were eating their frugal breakfast

one cold, snowy morning in December, when Helen said, "What do you s'pose Santa Claus will bring me this Christmas?"

The question startled Bert a little, for he had at that very moment been thinking of Christmas and his inability to buy a quarter of the things he wanted to get for Helen.

"I don't know, dearie," he said. "What do you want the most?"

"A big, big doll with really and truly hair and eyes that will open and shut; and if it could squeak a little when you squeeze it, I'd like it a little better. And if it had a hat! and shoes!—O Bertie, I'd want it to have shoes the most of anything—the kind that would come off and on! And a little muff to put its hands in! O Bertie, if I could have a doll like that I wouldn't want anything else! Do you s'pose I could?"

"We'll see about it."

"I've got two cents to send to Santa Claus for it. Would it cost more than that?"

"O, yes, much more!"

"I want it awful bad," she said with sweet seriousness that clinched Bert's resolve.

Ten minutes later there was a knock at the door. When Bert opened it he found Jason Woods outside.

"I haven't time to come in," he said. "Got anything particular to do?"

"No, sir, I haven't."

"Well, I can give you two weeks' work down at my sawmill. I must have some extra help to get out a lot of lumber I've contracted for. If you'll come down to the mill I can set you to work at once."

Bert did not stop to wash the breakfast dishes. He wrapped Helen up warm and carried her over to Mrs. Hawes's for the day, and half an hour later he was at work with Jason Woods.

It was hard, cold work in the old sawmill, and Jason Woods was a hard taskmaster, but Bert bore the faultfinding in silence, and did his utmost to please. His work at the sawmill would be finished two days before Christmas, and he had planned to walk seven miles to Hillsboro, where he would be sure to find just the kind of doll Helen wanted.

Mr. Woods owed Bert twenty dollars when the time for which he had been hired was up, but on the last day, when the work was finished, Jason was not ready to pay.

"Well, Bert, I'll say for you that you've worked first rate, and I'll hire you again when I need any one. I owe you twenty dollars, don't I?"

"Yes, sir."

"That's the way I figured it out. Well, you come over the first day of January and I'll have the money for you."

Bert was too much surprised and disappointed to speak for a moment. Then he said:—

"If you could let me have a little of it."

"Don't see how I can. I need all the money I have on hand. It's only about a week until the first of January. I guess you'll have to wait. Wish you'd pile up those boards before you go. I must go right away."

He took down his overcoat from a peg in the wall near the door, and went out, without noticing how Bert's lips quivered as he said:—

"All right, sir."

But in his heart Bert thought it was all wrong. He had been so sure of receiving his money that when the mill had been stopped for repairs one day the previous week, he had walked to Hillsboro, and selected the doll and some other things for Helen, fearing that if he waited until the day before Christmas everything would be gone. Having found just the doll Helen had described—no other like it was left in any toy-shop in the town—he had had it and a few toys put aside for him in a box, for which he had promised to call by twelve o'clock of the day before Christmas.

"And now I can't get them," he said bitterly. "They'll be sold to some one else if I am not there by noon. O, it's mean for Jason Woods to keep me out of money! He's the richest man in town. He could pay me if he wanted to. Poor little Helen! She will be so disappointed. And I wanted to get some things for the Hawes children. Their mother has been so good to Helen and me!"

He brushed the tears from his eyes with the back of his rough hand as he went into the mill to get his old overcoat, which was worn beyond repair. It hung on a peg close to the one from which Mr. Woods had taken his own thick, warm overcoat. Bert stooped to pick up his dinner pail, and he saw a little roll of green paper lying by it.

"Why, it's money!" he exclaimed. He smoothed out the little roll and found it to consist of four almost new five-dollar bills.

"Twenty dollars! Exactly the amount he owes me!" exclaimed Bert. "And he said he didn't have the money! This belongs to me, by all that's fair and right. It is mine. I'll tell him so boldly—that I found it and kept it because I had a right to it. Now Helen can have her doll. I'll go to Hillsboro for it to-morrow!"

If Jason Woods had a soft spot in his heart, it was for his little granddaughter Marjorie, who was just the age of Helen Dodge. Hence he entered the store at Hillsboro on the day before Christmas in search of things for Marjorie.

"She wanted me to get her a big doll with real hair and real shoes, that would make a noise and open and shut its eyes, and she wanted it to have a hat on and a muff to put its hands in."

"Well, I have only one of that kind left, Mr.

Woods," said the proprietor, "and I don't know that I ought to sell it. You see, a boy came in last week and bought that doll and some other things, and said he'd come for them to-day at noon. He said he was working for a man over in Horton, where you live, and that he'd get his pay last night. He said he wanted the doll for his little sister. He looked as if he ought to spend the money for himself. Well, it's now after one o'clock, and he said he'd be here by noon. I guess you can have it, for I can't afford to have an expensive doll like that left on my hands."

He took a box from the shelf as he spoke. "Here it is with his name on it—'Bert Dodge,' perhaps you know him?"

"Yes, I do."

"Do you think he'll come for these things?"

"I can't say; maybe not."

"Maybe he didn't get his pay as he expected."

"No-o-o-he-maybe he didn't."

"Well, then, you may have the doll. But I can't help feeling sorry for the boy. He had a good face, and I know his heart was set on having the doll for his little sister."

As Jason Woods looked at the box, his slumbering conscience awoke. He thought how hard and how faithfully Bert had worked, and he remembered how the boy had looked when he told him he could not have the money due him until the first of January.

"I'll take the box of things just as they are and your next best doll."

Half an hour later the owner of the sawmill was on his way home. It was very cold, and the snow was falling. He had driven three miles when he came to a boy sitting by the roadside, who called out, excitedly:—

"Stop, Mr. Woods! Stop! I wish to see you!"

Bert thrust his hands into his pocket and brought forth the roll of bills. "Here," he said, "this money belongs to you. There's twenty dollars of it; and I found it in the mill last night. I've been sitting on that log two hours trying to make myself think I had a right to it, because you owed it to me. Here's the money. I beg your pardon for keeping it so long. I did wrong."

"Put the money in your pocket, Bert. It belongs to you, for I owe it to you. Get into the sleigh, and let me take you back home. I've got the doll and a few other things you had put aside at the toy store. I'm going to be little Helen's Santa Claus this year; and yours, too. You worked overtime several days, and I didn't allow you anything for it, so I've made it up to you in a Christmas present of a new overcoat that I've got under the sleigh seat. Get up there, Nell! What's the matter with you?"—*J. L. Harbour, in The Round Table.*

### Singing Kettles

THE Japanese manufacture in a great variety of forms iron teakettles which break into song when the water boils. The song may not be a perfect melody, but it is perhaps as agreeable as the notes produced by some of the insects that the Japanese also treasure for their music.

The harmonious sounds of the teakettles are produced by steam bubbles escaping from beneath thin sheets of iron fastened closely together nearly at the bottom. To get the best effects some skill is required in regulating the fire. The character of the sounds varies with the form of the kettle. These singing kettles have been used for many centuries.—*Selected.*



M. E. KERN  
MATILDA ERICKSON

Secretary  
Corresponding Secretary

## Missionary Volunteer Society Program

### Reading Courses

LEADER'S NOTE.—Doubtless you will remember a former notice concerning this program. It is to be based upon the first books in the Reading Courses, "Successful Careers" and "How the World Is Clothed." For the Scripture reading we suggest that all be asked to come prepared to read or quote a verse containing the word knowledge or wisdom. The select reading should begin with the topic, "Thoroughness and Concentration," on page 189 of "Education," and end at the bottom of page 190. The paper or talk on "Essentials to Success" should not occupy more than eight minutes. For the symposium, quotations may be made from the various biographies, written on slips of paper, and passed out to different members to be read. Some excellent ones are found on pages 57, 304, 310, 354, and 402. The article, "Failures of Lincoln," in the INSTRUCTOR of October 11, will be helpful to the one giving the topic on "How Lincoln Succeeded." If it is desired to substitute for this, the subject "Importance of Little Things" would be good. The paper on "Some Things I Have Learned About How the World Is Clothed," should of course be given by some one who is taking the Junior Course, and need not occupy more than five minutes.

### Program.

Song—"Christ in Song," page 500, new edition.  
Scripture Reading.  
Prayer.  
Song—"Christ in Song," page 478, new edition.  
Select Reading.  
Paper—"Essentials to Success."  
Song—"Christ in Song," page 560, new edition.  
Symposium.  
Paper—"How Lincoln Succeeded."  
Song—"Christ in Song," page 542, new edition.  
Paper—"Some Things I Have Learned About How the World Is Clothed."  
Closing Song—"Christ in Song," page 570, new edition.

## Missionary Volunteer Day

(January 7)

LEADER'S NOTE.—The General Conference Committee has appointed Sabbath, Jan. 7, 1911, as Missionary Volunteer day, and everywhere our societies are asked to join the older church-members in carrying out the program. One number on the suggestive program is a report of the work done by your society for the last year. This should be comprehensive, carefully prepared, and well boiled down. The three general articles in the program will appear in the *Review* of Dec. 22, 1910. Will you not ask your society to make Missionary Volunteer day one of their topics for special prayer? Pray that it may mark the dawn of an era in which the young people's work shall become the greatest possible blessing to the church. Pray earnestly. Pray unceasingly. This program appears a week earlier than usual. It is the beginning of a plan which will be followed from now on. This plan will give you more time for preparation. It comes to you as an opportunity to do even better work than you have done in the past.

### Program

Song—"Christ in Song," page 548, new edition.  
Prayer.  
Scripture Reading—Joshua 1:1-11.  
Song—"Christ in Song," page 571, new edition.  
Paper—"How the Missionary Volunteer Work Aids in Supplying Workers."  
Paper—"The Value of the Missionary Volunteer Work to the Conference."  
Special Music.

Greetings from the conference Missionary Volunteer secretary.

A message from the conference president.

Song—"Christ in Song," page 604, new edition.

Report from your local Missionary Volunteer society.

Paper—"Great Need of Co-operation in This Work."

Song—"Christ in Song," page 544, new edition.

## Missionary Volunteer Reading Courses

### Senior No. 4—Lesson 11: "Successful Careers," Chapters 47-50

NOTE.—Two young men who worked in the same shop expressed a desire to secure an acquaintance with great books. One spent a great deal of time in lamenting that he had no opportunities, and playing checkers and other games. The other always carried a book in his pocket, and utilized every moment on a car, or in a station, or waiting for his lunch. In the course of a few years, he became one of the best-read young men in his circle; and, because of his general intelligence, he was promoted to a position that gave him more leisure for study.

### Test Questions

1. What made Thomas Chalmers desire to become a writer?
2. How does his experience show that without Christ no life can be a real success?
3. What special help do you get from Roger Sherman's biography?
4. How did he manage to be a Christian in everyday life?
5. In time of what crisis did he serve his country? What noted document did he help to draft?
6. Why was Patrick Henry's early life a failure? Why do you think he succeeded in the legal profession?
7. Of what famous saying is he author? How did he serve his country at the time of the Revolution?
8. How has the invention of the cotton-gin affected the cotton industry?
9. When, by whom, and under what circumstances was the cotton-gin invented?
10. What good lessons do you think you have learned from this book?
11. Try to recall fragments which show how honesty, good books, and persevering effort have helped to make useful lives.
12. How do the biographies prove that poverty is no barrier to true success?

### Notes

THE COTTON-GIN.—When Whitney went about the work of making the cotton-gin, he said to himself: "If I fasten some upright pieces of wire in a board, and set the wires very close together, like the teeth of a comb, and then pull the cotton-wool through the wires with my fingers, the seeds, being too large to come through, will be torn off and left behind." He tried it, and found that the cotton-wool came through without any seeds in it. "Now," said he, "if I should make a wheel, and cover it with short steel teeth, shaped like hooks, these teeth would pull the cotton-wool through the wires better than my fingers do, and very much faster." He made such a wheel, and it was turned by a crank. It did the work perfectly. So in the year 1793 the first cotton-gin was made.

### Junior No. 3—Lesson 11: "How the World Is Clothed," Pages 268-292

### Test Questions

1. How do the Negroes of Africa ornament themselves? What is peculiar about the ornaments worn in Burma? in the Philippine Islands? in China? in India?
2. Why are the following places of interest in the

study of jewelry: Delhi, India; the Tower of London; Austria; Constantinople?

3. How is your lead-pencil related to the diamond? How are diamonds polished? Mention three uses made of diamonds.

4. Are diamonds all of one color? If not, mention some of their different colors.

5. Mention some of the 'most famous diamonds in the world.

6. Where is Kimberley? For what is it noted?

7. Where are Brazilian diamonds found? Have diamonds ever been found in the United States?

8. What is the chief diamond-cutting city of Europe? Name some other cities where they are cut, and tell the nationality of the men who do the most of this work.

9. Describe the appearance of one of the factories where diamonds are ground and polished.

10. Before diamonds are polished, what must be done to them?

11. Describe the grinding and polishing of diamonds.

### What Love Does

LOVE is a healer, a life-giver, a balm for our hurts. All through the Bible are passages which show the power of love as a healer and life-lengthener. "Because he hath set his love upon me," said the psalmist, "with long life will I satisfy him."

Love is the great disciplinarian, the supreme harmonizer, the true peacemaker. It is the great balm for all that blights happiness or breeds discontent, a sovereign panacea for malice, revenge, and all the brutal propensities. As cruelty melts before kindness, so the evil passions find their antidote in sweet charity and loving sympathy.—*Orison Swett Marden.*

### A Call to Help

IN view of the recent revolution in Portugal, the following extracts from a letter written by Elder C. E. Rentfro may be of interest:—

"Well, the battle is over, and the red and green banner floats to the breeze on buildings, automobiles, cars, carriages, etc. The republican flag denotes freedom. One of our young brethren, in his home on the fifth story, saw the principal part of the battle. He took some photos, which will be sent to some of our papers. All say it was a frightful time. We escaped, by being seven or eight miles out, but we could hear the cannon. Some six hundred persons lost their lives. Civilians fought by the side of the soldiers, and afterward the people helped the police of the city capture thieves and priests. Hundreds of the latter were caught, but are well treated. A number of convents were destroyed.

"Since the plan of the republican leaders is freedom of conscience, separation of church and state, I am impressed that right now is the time to do hard work. I believe that we could use a large tent. Could you not enlist the interest of the youth in purchasing one? Please see what can be done."

Surely this call will appeal to some of our young people. Who will respond? Write to your Missionary Volunteer secretary, or to the Missionary Volunteer Department, Takoma Park, Washington, D. C.

M. E.



### XIV — Tithing

(December 31)

MEMORY VERSE: "Bring ye all the tithes into the storehouse." Mal. 3: 10.

#### The Lesson Story

1. "The earth is the Lord's, and the fulness thereof; the world, and they that dwell therein." Ps. 24: 1. The earth is the Lord's because he made it. We are his because he created us. The animals and birds all belong to him for the same reason. He says: "For every beast of the forest is mine, and the cattle upon a thousand hills. I know all the fowls of the mountains: and the wild beasts of the field are mine. If I were hungry, I would not tell thee: for the world is mine, and the fulness thereof." Ps. 50: 10-12.

2. When the earth was created, the Lord placed Adam and Eve in the garden of Eden to care for the things he had made, and to dress and keep them for him. While they obeyed, they were to bear rule over the world. God reserved only one tree for himself, that Adam and Eve might remember that he was the owner of all, and as a test to show whether they would love and obey their Creator.

3. But Adam and Eve were not satisfied with the portion God gave them. They wanted his share as well as their own. They took his fruit which he had told them not to eat, and thus lost their dominion and brought sin and death into the world.

4. The Lord still claims some of the fruit of the earth as his own. He wishes to be a partner with us in whatever we do and in all that we have. He says: "All the tithe of the land, whether of the seed of the land, or of the fruit of the tree, is the Lord's: it is holy unto the Lord." Lev. 27: 30. Men cultivate the soil, or use their strength in labor, but God gives the strength, he furnishes the land, he sends the sunshine, the rain, and gives life to the seed. To show that we are partners with God, he asks us to give back to him an honest tithe. A tithe is a tenth.

5. The Lord claims one seventh of our time, and says it is holy, for it belongs to him. He also claims one tenth of all he gives us, and says, "All the tithe . . . is the Lord's," and that it is holy. It is holy because it is his.

6. The tithe thus becomes forbidden fruit to us, as the tree of knowledge of good and evil was to Adam and Eve. We should never take it for our own use. If we do not give the Lord his tenth, we take forbidden fruit. We may keep back only a very small amount, but in doing so, we show that we do not give God his own the same as if we kept a large sum. When we receive so many gifts from God, we should be willing to show our love and obedience by giving him the tithe.

7. All the sin and death in the world remind us that God spoke the truth to Adam and Eve. It was Satan who led them to take God's share of the garden, and by obeying him they lost all they had. More than this, they brought sin and death upon all their children, and caused the death of the Son of God by their disobedience.

8. To take the tithe for our own use is to steal from

God. He says: "Will a man rob God? Yet ye have robbed me. But ye say, Wherein have we robbed thee? In tithes and offerings. Ye are cursed with a curse: for ye have robbed me, even this whole nation." Mal. 3:8, 9. It is bad to steal from men, but it is worse to steal from God, who gives us every blessing we enjoy.

9. The Lord has promised great blessings to those who pay their tithe. "Honor the Lord with thy substance, and with the first-fruits of all thine increase: so shall thy barns be filled with plenty, and thy presses shall burst out with new wine." Prov. 3:9, 10. "Bring ye all the tithes into the storehouse, that there may be meat in mine house, and prove me now herewith, saith the Lord of hosts, if I will not open you the windows of heaven, and pour you out a blessing, that there shall not be room enough to receive it. And I will rebuke the devourer for your sakes, and he shall not destroy the fruits of your ground; neither shall your vine cast her fruit before the time in the field, saith the Lord of hosts." Mal. 3:10, 11.

### Questions

1. How much of the earth belongs to the Lord? What is said of those in it? Then how much do men own? Why do the earth and all things belong to God? Who owns all the birds and animals? To whom do the cattle belong? What does he say of all the fowls and wild beasts?

2. Whom did the Lord place in the garden of Eden? What work was given them? For whom were they working? How long were they to bear rule over what God had made? What did the Lord reserve for himself? Why did he do this?

3. Why were our first parents dissatisfied? What did they take? Because of this what did they lose? What did they bring into the world?

4. What does the Lord still claim? What relation does he wish to enter into with us? What part does he say is his? What does he say concerning his share? What is our duty as God's partners? What does he furnish? How do we show that we are partners with God? What is a tithe?

5. How much of our time does God claim? What does he say of the seventh day? Why is it holy? What does the Lord say of his share of what he gives us? To whom does the tithe belong? Why is it holy?

6. What does the tithe become to us? Have we a right to use any part of it? If we do this, what do we take? Why may we not keep back a small part? How may we show that we love and obey God?

7. What do we see which shows that God spoke the truth to Adam and Eve? Who led them to sin against God? Is he still seeking to lead men to take what belongs to God? How much did Adam and Eve lose on account of taking God's share of the garden? What will we lose by taking his share of what he gives us? What has been the result of sin in our world?

8. When we take the Lord's tithe what sin do we commit? What question does he ask? What does he say we have done? Which is worse, to steal from men or from God? Why?

9. With what are we told to honor the Lord? What blessings are promised those who do this? What does the Lord tell us to bring to his storehouse? In what way does he wish us to prove him? What does he say he will do for those who prove him in this way?

# THE YOUTH'S LESSON

## XIV — Tithes and Offerings

(December 31)

### Questions

1. To whom does the earth belong? Ps. 24:1; Ex. 9:29.

2. To whom do the cattle and beasts belong? Ps. 50:7-12.

3. To whom does the silver and gold belong? Haggai 2:8; 1 Chron. 29:11-14.

4. To whom did God give the dominion of the earth? Gen. 1:28.

5. Under God, then, who holds title to the earth? Ps. 115:16.

6. What did man do with this dominion given him by the Creator? Compare Heb. 2:6-8; Gen. 3:4-6; Rom. 6:16.

7. Man having yielded his dominion to another, who won it back for him? Luke 19:10; Micah 4:8; John 14:30.

8. In placing man in possession of the earth, what one reservation did the Creator make? Gen. 2:8, 9, 15-17.

9. In forbidding Adam and Eve to eat of this one tree, of what, among other things, would this ever remind them? Note 1.

### MAN'S ACKNOWLEDGMENT OF GOD'S OWNERSHIP

10. What portion of the fruits of the earth has God reserved unto himself? Lev. 27:30, 32.

11. What consequences attached to disregarding the requirements of God concerning the reserved tree in Eden? Gen. 3:17-19; note 2.

12. What results from the failure of stewards rendering to the Lord that portion of the fruit belonging to him? Mal. 3:8, 9; note 3.

13. On the other hand, what follows faithfulness in rendering unto the Lord his own in tithes and offerings? Verse 10.

### Notes

1. The tree of knowledge of good and evil placed in the midst of the garden of Eden tested man's loyalty, as well as constantly reminding him that his home was his only as a gift from his Maker. That one tree would stand as a silent witness to man that the supreme ownership or title of the world was held by his God, yet so long as he proved loyal to the government of heaven, the home was his.

"At the very beginning of man's existence a check was placed upon the desire for self-indulgence, the fatal passion that lay at the foundation of Satan's fall. The tree of knowledge, which stood near the tree of life in the midst of the garden, was to be a test of the obedience, faith, and love of our first parents." "While they remained true to God, Adam and his companion were to bear rule over the earth. Unlimited control was given them over every living thing." — *"Patriarchs and Prophets,"* pages 48, 50.

2. All about us we see the results of our first parents' sin in disregarding God's ownership and command concerning the tree of knowledge of good and evil placed in the midst of the garden of Eden. The terrible crimes committed, and the universal reign of disease and death, constantly remind us of the truthfulness of God's words to Adam as to what should result from his disobedience.

3. "Every Christian is a steward of God, entrusted with his goods. Remember the words, 'Moreover it is required in stewards, that a man be found faithful.' 1 Cor. 4:2. Let us be sure that we are not robbing God in any jots and tittles; for much is involved in this question. All things belong to God. Man may ignore his claims. While he bountifully bestows his blessings upon them, they may use his gifts for their own selfish gratification, but they will be called to give an account of their stewardship." — *"Testimonies for the Church,"* Vol. IX, page 246.

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## Battle Hymn of the Republic

[The author's most famous poem. Mrs. Howe died October 17, aged ninety-one.]

MINE eyes have seen the glory of the coming of the Lord:  
He is trampling out the vintage where the grapes of wrath  
are stored;  
He hath loosed the fateful lightning of his terrible swift  
sword:

His truth is marching on.

I have seen him in the watch-fires of a hundred circling  
camps:  
They have builded him an altar in the evening dews and  
damps:  
I can read his righteous sentence by the dim and flaring  
lamps:

His day is marching on.

I have read a fiery gospel, writ in burnished rows of steel:  
"As you deal with my contempters, so with you my grace  
shall deal;"  
Let the Hero, born of woman, crush the serpent with his heel,  
Since God is marching on.

He has sounded forth the trumpet that shall never call re-  
treat:  
He is sifting out the hearts of men before his judgment-  
seat:  
O be swift, my soul, to answer him; be jubilant, my feet;  
Our God is marching on!

In the beauty of the lilies Christ was born across the sea,  
With a glory in his bosom that transfigures you and me;  
As He died to make men holy, let us die to make men free,  
While God is marching on.

—Julia Ward Howe.

## "School Agriculture"

THE little paper, *School Agriculture*, is intended to serve as a text for pupils and teachers in agriculture, manual training, and domestic science. It is edited by one who is identified with *Good Housekeeping*, and who has had a successful and extended experience as an educator.

The publishers are the oldest, largest, and most experienced agricultural and book publishing firm in the country. The business of Orange Judd Company was established in 1842. Its weeklies for the farm and home — *American Agriculturist*, at New York; *Orange Judd Farmer*, at Chicago; and *New England Homestead*, at Springfield — have won universal honor for interest, usefulness, enterprise, and power. Orange Judd Company also publish most of the agricultural books issued, and many educational works.

The lessons found in the paper are practical, helpful, and interesting. Every teacher of the grades would, I believe, find it of value.

The yearly subscription price of this weekly is forty cents for a single copy. Two copies for one year, or one copy for two years, seventy-five cents. The paper is published only during the school year, from September to June. In ordering, address the nearest office, as follows:—

"School Agriculture," Orange Judd Company, Publishers, Springfield, Massachusetts, Myrick Building; New York, 139 Lafayette Street; Chicago, Illinois, People's Gas Building.

## Obeying Orders

IN one of the companies of a Wisconsin militia regiment are two students of Lawrence College who are studying for the ministry. While the regiment was at Camp Douglass this summer, some of the boys of the company thought to have a little fun at the expense of the two ministers. When the beer, which some one had sent to the regiment as a treat, was to be served, they asked their captain if the two ministers might serve it.

He said they might. The boys were jubilant, and served notice of their new duty to the two students.

One of them refused to have anything to do with it, but the other, Private Keith, took the notice, which read, "The beer must be served on the grounds, and no man must get drunk," and said he would obey it.

He went to his lieutenant and asked him if the company might be held at parade-rest while he served the beer. He was assured that it should be done.

Private Keith then rolled the keg up in front of his company, knocked out the bung, and let the beer out on the ground. When it had all run out, he turned to his lieutenant, gave the salute, and said:—

"Lieutenant, I have served the beer on the grounds, and I am sure no man is drunk."—*Youth's Companion*.

## The German Way With Mayors

GERMAN cities are the best governed in the world. How far apart are the ideas of Germans and Americans on the subject of city government may be seen from reading an advertisement which lately appeared in a number of German papers:—

"The place of mayor of Magdeburg is vacant. The salary is 21,000 marks (\$5,250) a year, including the rental of a dwelling in the city hall. Besides his salary the incumbent will receive 4,000 marks (\$1,000) for his official expenses. Candidates should apply before September first."

Can any one imagine an American city advertising for a mayor? Can any one give a good reason why a city should not advertise for a mayor when it needs one?

The German idea is that a municipality is a business, to be conducted on business lines. The office of mayor is one requiring knowledge and skill of a technical, professional character. A man who has proved himself a good mayor in one German town is frequently invited to another. The larger towns look to the smaller towns to train municipal officers for them. It frequently happens that two cities bid in competition for a particularly expert man. So when their chief burgomaster, Dr. Lentz, was appointed Prussian minister of finance, the good people of Magdeburg gave public notice of their need of a capable man to succeed him.

Sensible people, those Germans!—*The World's Work*.