The YOUTH'S INSTRUCTOR

Vol. LVII November 23, 1909 No. 47

Trust

A PICTURE memory brings to me;
I look across the years, and see
Myself beside my mother's knee.

I feel her gentle hand restrain
My selfish moods, and know again
A child's blind sense of wrong and pain.

But wiser now, a man gray grown,
My childhood's needs are better known,
My mother's chastening love I own.

Gray grown, but in our Father's sight
A child still groping for the light
To read his works and ways aright.

I bow myself beneath his hand;
That pain itself for good was planned.
I trust but can not understand.

I fondly dream it needs must be
That, as my mother dealt with me,
So with his children dealeth he.

I wait, and trust the end will prove
That here and there, below, above,
The chastening heals, the pain is love!

— *John G. Whittier.*

"A LARGE department store built last summer in Milwaukee has on its roof a landing for air-ships."

ACCORDING to a list compiled by the *Popular Mechanics,* seven hundred fifty-seven persons have lost their lives in north pole expeditions.

THOSE are not wise who are concerned merely about appearing to possess knowledge instead of earnestly striving to acquire knowledge.— *Selected.*

"A SUM of one million two hundred fifty thousand dollars left by Henry Barnato is to be used for building and endowing an institution for cancer sufferers in London."

THE Omaha *Daily News* has quit publishing liquor advertisements, and taken its stand in the same class with the Nashville *Tennessean,* Atlanta *Georgian,* and other clean and independent dailies of the country.

THE Blackstone River, "a very Tom Thumb of a river, as rivers go in America," is said to be the hardest working river, the one most thoroughly harnessed to the mill-wheels of labor, in the United States, probably in the world.

EVERY liquor license in Maryland will expire on the first day of May, 1910. Every person interested in the cause of prohibition should do all he can to prevent the renewing of these licenses. Vote for prohibition whenever opportunity offers. Distribute quantities of temperance literature, that everybody, even the schoolboy, may read, and talk prohibition. Then the people will demand prohibition of their legislators.

HON. DAN R. SHEEN was digging around the spring on his farm across the river from Peoria, Illinois, when he struck some hewn timber and rock walls. He informed the State historical society, and that society sent a committee to investigate, and further excavations revealed the fact that it was the foundation of old Fort Crèvecœur, where a band of thirty of La Salle's exploration party disappeared about 1680. A monument will probably be erected on the spot.

"A COMPANY, with John D. Spreckels, one of the leading men of California, at its head, and with U. S. Grant, Jr., as one of the directors, was incorporated in September to celebrate the opening of the Panama Canal in 1915 by a great world's fair. The exposition, intended to equal, if not surpass, any great fair ever held on the Pacific Coast, is to be at San Diego, California. The company is capitalized at one million dollars."

"THE earnestness with which the Turkish government is pressing educational reforms is one of the best signs for the future of the country. Salih Bey has lately taken to Great Britain and the Continent nearly a hundred young men, whom he has put into European schools; and he has also committed five Mohammedan girls to the American Girls' College in Constantinople, whose expenses are paid by the department of instruction, and whose parents have promised that on graduation they shall teach for five years in the public schools."

The Comic Supplement

[Mr. Jaeger desires very much to know what our boys and girls think about the influence of the comic supplement of the newspaper. So he wishes them to write an article on it, and send it to him at 1462 W. Sixth St., Riverside, California. He will read these over carefully, and choose one or two of the best ones to send to the INSTRUCTOR.— EDITOR.]

A YOUNG woman from a country district not long ago entered one of our universities. Her earnest but plain face, her studious habits and brilliant intellect, won for her the admiration of her instructors, and made them wonder what profession she was preparing to enter. One day her teacher in English decided to ask her. When the class period closed, and the students were passing out, he quietly requested her to remain, as he wished to speak with her a moment. When the two were alone, he said, "Miss ——, you have by your earnest manner and excellent preparation of lessons made the faculty of our school take cognizance of you, and if we may, we should much like to know what you are striving to make of yourself?" Somewhat embarrassed by the question, she hesitated a moment, then frankly answered, "Just all the woman the material will make, sir."

Now isn't that what each of us wants to do — just make of ourselves all the material will make? Then in weaving the fabric of character we shall want to use the greatest care to see that the materials which enter into its making are the very best.

Every influence leaves its impression. Sir Peter Lely made it a rule never to look at a poor piece of art, believing that whenever he did so, his pencil caught a taint of it. The Buddhist precept, "Think of Buddha, and you become like Buddha," and the maxim, "As a man beholds, so he becomes," suggest what should be our attitude toward all that is base in literature and art.

Among the chief influences which are poisoning the minds of the youth of this generation is the so-called comic newspaper supplement. To allow one's self to feast from week to week upon this gaudily colored sheet can only tend to cheapen the mind and depreciate one's sense of that which is noble, reverent, and refining. There is no true wit or humor about it. The English is the lowest gibberish or slang, vulgarisms abound, and there is in it no artistic beauty.

The comic section was not printed to help boys and girls become better men and women. Instead it has just the opposite effect. A writer in the *Outlook* expresses it so well I take leave to quote his words: "Instead of helping to counteract the too prevalent tendency among children to irreverence and resistance to authority, these pictures and jokes actually teach our children irreverence and lawlessness by ridiculing home discipline, by making fun of old age, dignity, good breeding, and all the pieties and amenities which make the family the most sacred and important of all human institutions."

The only reason the comic section is added to the Sunday paper is to make it sell. Commercialism bred it. An artist who had other than gold for his goal, would never stoop to use his brush in the making of these crude pictures. To purchase the productions of such artists only upbuilds their craft, and puts money into hands which will spend it for naught. But the chief evil is in the mental and moral effect upon the one who spends time reading the worthless supplement. Then let us refuse to give any place in mind or heart to the "comic section" of the Sunday papers.

EDMUND C. JAEGER.

The Youth's Instructor

VOL. LVII TAKOMA PARK STATION, WASHINGTON, D. C., NOVEMBER 23, 1909 No. 47

A Study of Christian Science — No. 6

G. B. THOMPSON

THE public press is filled with the recital of accidents by land and by sea. Thousands fill untimely graves as a result. We are all subject to these. But concerning accidents Mrs. Mary Baker G. Eddy says: —

"Man is indestructible and eternal. Sometime it will be learned that mind constructs the body, and with its own materials. Hence no *breakages or dislocations can really occur.* You say that accidents, injuries, and disease kill man; *but this is not true.* The life of the man is mind. The material body manifests only what mortal mind admits, whether it be a broken bone, disease, or sin."—*"Science and Health," pages 400, 401.*

Again I read: "Accidents are unknown to God, or immortal mind. . . . Under Providence *there can be no accidents,* since there is no room for imperfection in perfection."—*Page 421.*

According to this there is no real danger of being crushed to death in a railroad disaster, run over by an automobile driven above speed limits by a drunken chauffer, or blown to atoms in a powder-magazine. No broken limbs or dislocated joints such as we have been led to suppose — all the suffering in this line has been merely figments of the imagination, and might have been avoided had "mortal mind" been in control. Such statements remind one more of the ramblings of a lunatic than the mental product of a sober, sensible, thinking person.

With the foregoing, however, I am unable to harmonize the following: "Until the advanced age admits the efficacy and supremacy of mind, it is better to leave the adjustment of broken bones and dislocations to the fingers of a surgeon, while you confine yourself chiefly to mental reconstitution, and the prevention of inflammation or protracted confinement."—*"Science and Health," page 400.*

This seems to indicate that there are such things as real "broken bones" and "dislocations" requiring the "finger of a surgeon" on account of the age not being far enough advanced. We are told by the author of "Science and Health" that it does not contain any contradictions, so we leave it to those who can to reconcile this apparent discrepancy.

But surely the discoverer and founder of Christian Science should be sufficiently far advanced not to be subject to accidents. But such does not seem to be the case, as the following press report seems to indicate: —

"BOSTON, JANUARY 26.— Guarded by the utmost secrecy, Mrs. Mary Baker G. Eddy, founder and head of the Christian Science Church, was removed by special train to-day, with all her household attendants, from Pleasant View, in Concord, New Hampshire, where she has lived for nineteen years, to a new house in the fashionable Chestnut Hill section of Brookline.

"Even the train crew, which early took the private car of the vice-president of the Boston and Maine Railroad to Concord, were commanded to maintain absolute secrecy as to the trip they were to make, and the best men in the service of the road were assigned to the duty.

"Preceded by a pilot engine to clear the way, the special train of three cars left Concord at two o'clock, and proceeded over three railroads by a circuitous route to the Chestnut Hill station, on the Boston and Albany Railroad. In the rear of the train, to guard against collision, trailed a third engine."—*Spokesman Review, Jan. 27, 1908.*

Why clear the way with a "pilot engine" if "under Providence there can be no accidents"? Why trail an engine in the rear to "guard against collision" if "accidents are unknown to God"?

We are reminded by this incident of the Universalist clergyman, who, after preaching a powerful sermon in which he taught that there was no hell, is said to have exhorted his hearers that "they better live right for there *might be a hell after all.*" So the founder of Christian Science seemed to fear that after all that she had said and written, there might be such a thing as an accident, and she get hurt.

The *Spokesman Review* continues, describing what took place after Mrs. Eddy's arrival at her costly mansion: —

"Calvin A. Frye turned to six tall, powerful men who stood near him, and ordered that every person be at once put off the grounds. Then he turned and entered the house.

"Six men remained on guard through the night, and to-morrow six others will take their places for the day guard. Within a week permits have been issued by the Brookline police force for men to carry arms, and it is believed that the watch of six by night and six by day will be continued for some time."

But why guards either by night or by day, if "accidents are unknown to God"? Burglars and thieves do not exist according to Christian Science. They, like every other material thing, are only figments of "mortal mind," and of course could do no damage. These despatches published in the *Spokesman Review* show that the "discoverer" of this so-called "science" does not herself believe the things which she has published for her followers to believe.

Kimberley Diamond Mining

PASSING over wide stretches of level desert land upon which grow thorn bushes and other scanty vegetation, we arrive at Kimberley. Nearly the whole city has the characteristic brown appearance of mining towns in hot, dry countries. In the suburbs and country near are many hills rising above the level desert around them. All have a characteristic shape — steep at one end and a gentle slope from the top on the other. These are known as "débris heaps," for they

HOISTING FRAME AT THE WESSELTON DIAMOND MINE, KIMBERLEY, SOUTH AFRICA

are composed of the "blue ground" from which the diamonds have been taken.

But here in the city, only a block from our treatment-rooms, is a great hole. We look with wonder, for it is about two thousand feet broad and one thousand feet deep, dug down in the earth and soft rock, with sloping sides. It looks like the crater of an extinct volcano, and yet it was dug by man. This is the exterior of the Kimberley mine, and was made solely to get the diamonds contained in the blue ground dug from it. Now this mine is worked by means of long tunnels dug underneath the hole. This hole is the largest ever dug by man, but there are many smaller ones made for the same purpose about Kimberley.

At the Wesselton mine we see the big hoisting frame and machinery above the five-hundred-foot shaft. The blue ground or decayed rock in which the diamonds are found, is hoisted to the surface in two great buckets, which lift loads of several tons. Their contents are automatically dumped into a large hopper, under which small steel cars are drawn and filled. Hundreds of these cars are attached to a constantly moving cable miles in length, and are drawn to the "floors," and then back to be refilled.

The floors are large, level tracts of land cleared of all vegetation, and hardened with heavy rollers. Some of these are several miles in length. Here the blue ground is spread to weather, or disintegrate, in the sun and rain,— this process requiring from six months to a year or more.

From the floors it is again loaded into the little cars and hauled by another cable to the washer. In these machines it is mixed with water and stirred around in very large circular pans. Since diamonds are much heavier than most of the blue ground, they, with other heavy stones, settle to the bottom, and remain while much the greater part of the material flows off and becomes a part of the large débris heaps. As the whole process is mechanical, hundreds of car-loads are washed in a day. These pans are "cleaned up," and the concentrated deposits containing the diamonds are taken in locked trucks to the "pulsator."

In the pulsator the diamonds are separated from the bulk of worthless material by passing over series of tables heavily coated with grease. It is carried across by water, and the diamond alone of all the blue ground material will adhere to the grease. Separating the gems from this is simple. Now they are ready for the cutter.

The average value of diamonds in one ton of the blue ground is about five dollars. A workman may work with it for years and not find a single gem, but by these mechanical means, conducted on a very large scale, many millions of dollars' worth are found each year. Nearly twenty-one cubic feet of diamonds from five million loads (about one ton of blue ground to a car-load) is reported by the largest company for one year's work.

How many, many are seeking the riches of this perishing world! How few are seeking heavenly riches and working for the erring that they may have stars in their crowns in the earth made new! These will shine brighter than any diamond, and will never perish. HOMER C. OLMSTEAD.

Killed by Railway Trains

"AFTER all," said a merchant in conversation with a railway president, "the worst indictment against the railways of the United States is contained in the annual statistics of accidents. There is hardly anything so dangerous as traveling on an American railway."

"O, yes, there is," answered the railway president. "There is something a great deal more dangerous; that is trespassing on a railway's property. If I remember correctly, over ten persons are killed while trespassing on the property of American railways to one that is killed while riding on their trains."

The merchant thought this could not be correct. The newspapers, he remarked, constantly were filled with harrowing stories of wrecks in which numerous travelers lost their lives. The railway president replied that in order to enable the merchant to substitute exact information for vague impressions, he would send him a table showing the number of persons killed on railways while traveling, and while trespassing, for five years. The table which he sent was as follows:—

WASHING GEAR — WESSELTON DIAMOND MINE

	Passengers Killed	Trespassers Killed
Year ended June 30, 1903	355	5,000
Year ended June 30, 1904	441	5,105
Year ended June 30, 1905	537	4,865
Year ended June 30, 1906	359	5,381
Year ended June 30, 1907	610	5,612
Total for five years	2,302	25,963

This was accompanied by a note stating that the reports of the Interstate Commerce Commission, from which the foregoing figures were derived, also showed that the total number of passengers killed in the United States in all the *seventeen* years ending with 1907 was 5,502, or 110 less than the number of trespassers killed in the single year 1907.

The total number of people killed on the American railways in the year ending June 30, 1907 — the last for which official figures are available — was 11,839. Of these, as already stated, about one half — 5,612 — were trespassers.

There were fourteen people killed yesterday in the

United States while trespassing on railway property. There will be fourteen people killed to-day in the United States while trespassing on railway property. There will be fourteen people killed to-morrow in the United States while trespassing on railway property. That is, this number was and will be killed each day, if the average daily record of many years past is maintained. With merciless precision and consistency the roads grind to death just about five thousand trespassers each year. And, meantime, wise reformers, disregarding the annual slaughter of these five thousand persons, agitate strenuously for the elimination of grade crossings to stop the killing of only one fifth as many, and for the installation of block signal systems to stop the killing of only one eleventh as many. The number of trespassers killed annually usually almost exactly equals the total number of employees, passengers, and all other persons killed.

A "trespasser," as the word is used here, is one who goes on the property of the railroad without having any business that calls him there. How do trespassers get killed? — Well, 4,398 met their deaths in 1907 by being struck by trains, locomotives, or cars while standing or walking on railway tracks. Practically, all the rest were killed while jumping or falling from trains on which they had been stealing rides.

There used to be a conductor on a through passenger-train running out of Kansas City who warred on persons who were stealing rides in a unique way. He was six feet four inches tall, weighed two hundred eighty pounds, and was powerful in proportion. When he found "tramps" lurking on the blind baggage, he did not make a special stop to put them off. He courteously invited them to have seats in the smoking-car. Then every time he passed through — and he made it a point to pass through often — he soundly slapped their cheeks with his heavy palm, or "punched" their eyes or noses with his big fist, or took them by the throat and shook them until their teeth rattled, growling meantime: "You'll steal a ride on my train, will you? You think this road was built to haul such as you, hey?" In time his train got such an exceedingly bad reputation among vagrants as a comfortable place to ride free that they all carefully avoided it.

Most conductors and brakemen are not so successful, however, in intimidating tramps, who are apt to fight back viciously when put off trains. Public sentiment and public authorities undoubtedly are justified in forcing the roads to spend many millions of dollars in installing block signal systems, and eliminating grade crossings, to save the lives of one half of the total number annually killed who meet their death while lawfully on railway property or railway trains. Railways have a right to ask that in return public sentiment and public authorities shall co-operate with them to stop the slaughter of the one half who meet their death while unlawfully engaged in intruding on railway property.— *Samuel Dunn, in the Technical World.*

God's Protective Grace

A FEW years ago a steamer took sail from Boston. On board that steamer were five boys, the sons of one mother. They were all sailors, and all sailed under one captain. The mother was a godly, praying woman. When the boys took leave of her home, she said to them: "Remember that I am going to pray for you that God, our Father, will bring you back home to your mother."

They had a beautiful passage, and were nearing the harbor to which they were going; but as they entered the channel, which was a rocky and dangerous place, there came up a terrific sea wind, which sent them with tremendous force up against the breakers, and there the ship was fastened in the rocks. When the captain came upon the deck where the men were lowering the life-boats, he said: "There is no use to lower the life-boat, you can not live in this boiling sea, and there is no hope." All at once, as quickly almost as a flash of electricity in a dark room, the wind shifted from the sea to the shore, and a terrific gale like a cyclone loosened the ship and hurled it back into the channel where the waters were deep.

After several weeks they returned to Boston, and in the course of their first conversation with their mother she said to them: "One day something came over me that just crushed me to the ground. I felt that you needed protection from something, and I prayed God all the day and all the night. Suddenly the agony was taken away, and perfect peace came, and I was sure that you were saved."

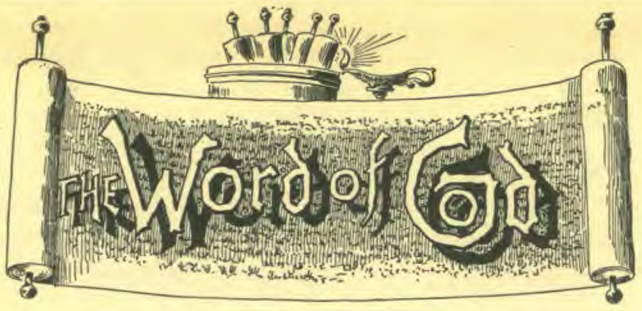
"Mother, what day was that?" they said. And when she told them, they looked at one another in amazement, for it was the day that they were so miraculously saved. It was that mother's prayer that got hold of God and caused him to protect her children. God's child can always get his ear in distress, and his protecting hand is always outstretched to help. That is the kind of God that we have. That is the kind of God that this world wants to hear about. That is the kind of God who, if properly preached, will woo and win the hearts of men to himself.— *Dr. Len G. Broughton, in the Golden Age.*

The Faith of a Child

WHEN I was a child, I did not have the privilege of being trained by Christian parents, and yet the Lord, our Great Teacher, knew just how a child could be taught to love and trust him.

One day my father sent me up among the hills to collect some money. When I reached the foot of the hill on my way back, it was so dark that I could not see which way to turn. For a moment I could not think of anything but the snakes that I knew were there. I tried to walk, but fell down. I was so frightened that the sweat trickled down my cheeks. Then that dear name "Jesus" came to my mind, and I only cried it out, "Jesus! Jesus!" and lo, he was right there; for as soon as I had cried out the name, I was happy, and felt no fear, but began to sing. After I had walked a little way, I felt a light touch on my shoulder, and heard a small voice say, "Look behind." I looked, and saw a light shining on the gate that I should have gone through, but had passed. I knew then that I was not alone, and the joy that filled my soul I can not describe. I kept praising God all the way; and whenever I had to turn, the light would shine so that I could see where to go. Had not that angel touched my shoulder, I should have been in the river; for it was only a few minutes' walk ahead of me, and I did not know it at the time.

From that time, the Saviour was my best friend, and I was very happy in him. I had found some one to go to with my joys and sorrows. He was always ready to hear my childish prayers, and I knew they were answered.— *Alma Dike.*



Signs in the Social World Regarding the Second Coming of Christ — No. 1

National Issues

CHRIST, in describing the signs of his coming, said, "There shall be . . . distress of nations, with perplexity." Luke 21:25.

This is now being fulfilled, as is shown by the following statements of eminent men:—

Said Lord Salisbury, in speaking of the threatened wars: "These wars come upon us absolutely unannounced and with terrible rapidity. The war-cloud rises in the horizon with a rapidity that obviates all calculations, and, it may be a month or two months after the first warning you receive, you find you are engaged in, or in prospect of, a war on which your very existence is staked."

A few years ago, after a European tour of inspection, Gen. Nelson A. Miles said: "I have seen all the great armies of Europe except the Spanish army. What I have seen does not indicate that the millennium is at hand, when swords shall be beaten into plowshares."

The late Bishop Newton gave his view of the situation, in these words: "This is the most unsettled condition of the world since the crucifixion of Christ. The stability of government is no longer a fact. Change is in the atmosphere. It is just as true now as a thousand years ago, 'Thou knowest not what a day may bring forth.' . . . Statesmen are at their wits' end. Philosophers speculate in vain."

Archbishop Ireland (Roman Catholic) declares: "The bands of society are relaxed; traditional principles are losing their sacredness, and perils hitherto unknown are menacing the life of the social organism."

Prof. E. Benjamin Andrews, ex-president of Brown University, is led to say: "No well-informed person in Europe seems to believe that peace is destined to endure there very long. On all hands people are preparing for war. Armies and navies are strengthened; fortifications multiplied; immense war treasures of gold piled up; all possible hypothetical plans of campaign, offensive and defensive, studied and discussed; firearms, great and small, ceaselessly experimented upon and improved; civil measures subordinated to military, and statesmen to great army men and navy men."

Signor Crispi, for many years prime minister of Italy, comparing Europe with Spain, at the time of the Spanish-American War, said: "Europe resembles Spain from a certain point of view. Anarchy is dominant everywhere. To speak frankly, there is no Europe. The European concert is only a sinister joke. Nothing can be expected from the concert of the powers. We are marching toward the unknown. Who knows what to-morrow has in store for us?"

The Springfield (Massachusetts) *Republican,* one of the ablest-edited papers in the United States, comparing a few years ago with the present, remarks: "The view a few years ago showed a placid, smiling river; now we see the boiling rapids of a torrent plunging toward what abyss no one knows. War has followed war with swift succession. . . . What the next stroke will be who shall say?"

The Accumulation of Wealth

James, in addressing the rich, says, "Ye have heaped treasure together for the last days." James 5:1-5.

This prophecy is now being fulfilled. In this connection the following statements are of interest:—

Rev. H. W. Bowman says: "Such colossal fortunes, such hoarding of treasures, such combinations of wealth, with such rapid increase in poverty, was never witnessed before. Our age alone fits the prophetic mold."

William E. Gladstone said: "There are gentlemen before me who have witnessed a greater accumulation of wealth within the period of their lives than has been seen in all preceding times since the days of Julius Cæsar."

The Boston *Globe* in 1890 said: "Men now living can remember when there were not half a dozen millionaires in the land. There are now four thousand six hundred millionaires, and several whose yearly income is said to be over a million." We might add that there are now six thousand millionaires, with hundreds joining their ranks year by year.

According to the *Cosmopolitan* of January, 1903, the billionaire has arrived. J. P. Morgan and J. D. Rockefeller are represented as worth a thousand million dollars.

From a New York paper known as *The World Magazine,* Feb. 19, 1905, we take the following concerning John D. Rockefeller: "Rockefeller's income is $50,000,000. He controls directly through his associates twenty-four of the biggest and most powerful banks and trust companies in the United States. Among the forty railroads he controls are the Union, the Central, and the Southern Pacific, the Erie, and the New York Central, which includes the New York, New Haven, and Hartford and other affiliated lines. He is one of the largest individual owners of Standard Oil stock, United States Steel stock, and the securities of twenty-five of the country's greatest industrial corporations, among them Colorado Fuel and Iron, American Linseed Oil, Consolidated Gas, National Transit, Federal Mining and Smelting, New York Life Insurance Company, Western Union Realty, and the George A. Fuller Company. Rockefeller's wealth, in silver dollars, would weigh as much as two first-class battleships. The Rockefeller fortune, in one-dollar bills, would make a double girdle around the earth, and leave a remnant 1,500 miles long. His personal wealth has increased at a rate of twenty-five times as fast as the wealth of the nation. It would take 125,000 wage-earners, at the average American wage of $400 a year, to earn the Rockefeller income. From the purely financial point of view, however, Mr. Rockefeller is easily the world's greatest potentate. The czar of Russia enjoys an annual income of about $12,000,000; Emperor William, as king of Prussia, receives a little less than $4,000,000; the emperor of Austria-Hungary, $3,875,000; King Edward, $2,225,000; and the king of Spain, $2,000,000. In the expressive phrase of Wall Street, 'King John,' as 'emperor of oil,' 'king of steel, banking, and railroads,' and 'prince'

(*Concluded on page eight*)

··CHILDREN'S··PAGE··

When Gladys Plays a Tune

When Gladys plays a tune,
Her doll is wild with joy;
The wind outside is loud and shrill,
The trees bend, listening, on the hill,
And even pussy can't sit still,
When Gladys plays a tune.

When Gladys plays a tune,
The dog sits up and barks;
The sun peeps 'round a cloud to see,
In comes the wasp and bumblebee,
So charming is her little glee,
When Gladys plays a tune.

JULIA ROSS.

The Thirsty Squirrel

ONE of the squirrels which, long before the present administration began, played about among the big trees and over the fine lawn in front of the White House, kept running up to a policeman one day, and then scampering away. As he refused peanuts, the officer could not make out what he wanted.

Finally the officer says he noticed that every time the squirrel ran away from him, the little fellow would make for a water spigot in the grass, and jump at it as if trying to turn the handle. He gave the officer his cue. He turned on the water, which was exactly what the creature wanted.— *Washington Times.*

A Homely Musician and Gardener's Friend

THERE was a burying down in my garden in Washington the other day. Not a funeral, just a plain burying, without any mourners, or even a hearse, for that matter. Strangest thing of all, the "corpse" not only walked to the spot, all by himself, but actually dug his own grave and got into it.

"I AM THE GARDENER'S FRIEND"

He had great, beautiful, gold-spotted eyes, a plump brown body, covered with many lumps, a tremendously wide mouth, two long hind legs, with webbed feet, and two funny short bowed front legs. He was a fine fat toad, which had fed all summer on the slugs and bugs which laid waste my garden. Now that the days were growing short and the nights frosty, he thought it time to be tucked snugly below a coverlet of earth for the long winter sleep.

Slowly he hopped along, pausing now and then to bask and blink in the sunbeams, as if loath to leave them. Presently he found a protected place in a fence corner, where the earth was rich, moist, and soft. Selecting a clear space of loose soil, he began to dig with his hind feet, gradually backing into the ground, which closed in above him, so that in a few moments no visible sign attested that any living creature lay below. But the watcher knew that little brother toad would burrow until below the frost line, when he would make a rounded cell in the earth, just big enough to hold him. Then he would pull his legs close up, cuddle down his head on his front paws, and take a comfortable little nap of five months or so.

The Sleepy, Purling Spring Song

When the frost is gone from the ground in the spring, toadie will come merrily out of his hole. All along the banks of pools and ponds the dry grass and leaves will be a-rustle in the dusk with toads, three years old or more, coming down to the water to mate. As the males reach the pond, they swell their gray throats into great bagpipes, filling the air with a sleepy, purling song, one of the most exquisite sounds of spring. They arrive at the ponds by hundreds in the first few warm nights. Soon the eggs are laid, near the shore if the water is deep, anywhere on the bottom if it is shallow. They look like strings of black beads enclosed in tubes of clear gelatin, which are tangled among the plants and debris in the pond. If they were eggs of frogs or salamanders, they would be in masses of jelly instead of in ropes.

But how can a single toad lay one of those strings of eggs? The mass is nine or ten times as large as the whole body of the animal. The explanation of this is that the jelly is almost dry, and is much shrunken when the strings are first laid, but swells enormously on contact with the water. The number of eggs laid by individual toads, however, almost staggers belief. They average anywhere between six thousand and twelve thousand eggs apiece. The eggs hatch rapidly, two to four days of warm weather, or ten or twelve of cool, sufficing to bring out myriads of tiny, black tadpoles. It is most interesting to watch, through the clear jelly, the egg develop, and the tiny embryo begin to move about. Soon it wriggles itself out through the gelatin. At first it hangs itself up on the string, by a queer little V-shaped organ on its head. After feeding on the jelly for a short time, the polliwog begins to swim about and devour the slimes on the plants, stones, and sticks in the pool. They are splendid little cleaners to keep in a fountain, lily tub, or aquarium.

FROG'S EGGS

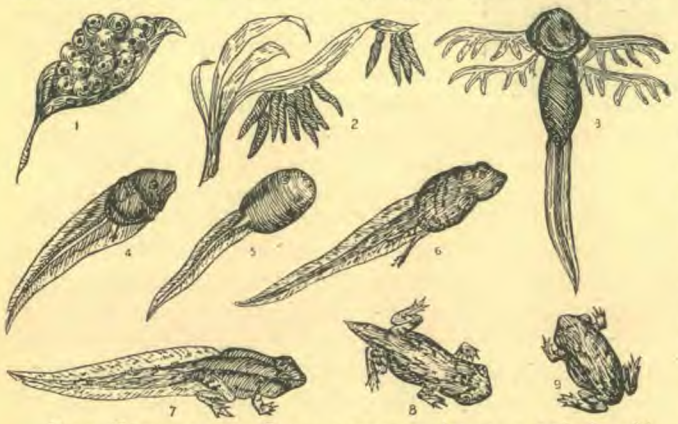
Tiny Fringe-Like Gills at Each Side

At first the little tadpoles have tiny fringe-like gills hanging at each side, with which they breathe. In a day or so these drop off, and the little fellows breathe by means of inside gills, something like those of a fish. They only have an opening for the water on one side, however. As the polliwogs grow larger, they do not seem to care to remain beneath the water all the time. They grow restless, rushing up to the surface and diving again in a terrible commotion. The older they grow, the more they are seen at the top. This is because they are growing lungs. They need to come to the surface to take in air and exercise these new organs. Finally they have to seek the

air whenever they want to breathe, because the gills have shrunken entirely away.

By this time they are light-colored. A great change has taken place in their form. They have a distinct head, the hind and fore legs have grown, and, save for the tail, they greatly resemble a grown-up toad.

Who ever saw a tadpole's tail drop off? — Nobody; although plenty of people are sure that it does. What really happens to it is very much queerer than if it did fall off. In the body are many little particles or cells that act as watchmen to see that no bacteria get in and no dead cells are left about. They are called phagocytes, or white corpuscles, and they wander about wherever they please. Into the tail they go, take it up little by little, and transport the substance into the body, where it is used as food. During the time that its tail is disappearing, little tadpole does not eat; he is living on his own tail! After a while the whole tail has disappeared, the skin has shrunken down smoothly, and a tiny, tiny toad comes hopping out on the shore. In such great numbers do they appear, and so rapidly



EGGS, TADPOLES, AND FROG: 1, eggs; 2, larvæ; 3. tadpole with branching gills; 4, gills absorbed; 5, back view of 4; 6, with hind legs; 7, with hind and fore legs; 8, with legs elongated and tail shrunk; 9, perfect frog.

do they travel over the country, especially after a shower, that many people think they have actually fallen from the clouds.

Before leaving the water, the poor little fellows were pursued by all sorts of water insects and larvæ, salamanders, turtles, fishes, water-birds, and possibly water-snakes. On land the snakes fall upon them as a delicious treat, snatching them greedily, several unfortunates at a time, while hens and ducks flock to the feast. Owls, hawks, crows, and snakes will also eat the adults, although they much prefer a nice smooth green frog. This is because on his back behind each ear — the ears are the round, smooth spots below and behind the eyes — the toad has a big "wart," from which, when disturbed, he can exude a milky fluid. It is bitter, and, evidently, from the way in which Towser acts after he takes a toad in his mouth, it tastes very bad, indeed. It may make your eyes sting if it gets into them, but it doesn't cause warts.

Not Overparticular About His Diet

Toadie himself has a good appetite. Anything that lives, moves, and is small enough to swallow, he attempts to gather in. Even the business end of a bumble-bee is not so hot as to deter his toadship. Angleworms are to him as macaroni to a son of Italy. Large moths he will seize by the body, stuffing the wings into the corners of his capacious mouth with his paws, in a most ridiculous fashion. He sits under electric lights garnering beetles freely, gorging himself until the legs of the last victim hang out between his jaws, and he can barely drag himself away to his hole.

His method of capturing his prey is unique. His pink, double-tipped tongue, instead of having its root in the back of his mouth, is attached at the front of the jaw, while the tip lies down his throat. On the end of the tongue is a sticky substance. When toadie wants a fly, he flips out that tongue, catches the insect as if with sticky fly-paper, and flips it down his throat in a jiffy. When we stop to think that a large toad will eat nine or ten thousand harmful insects and worms in the course of a summer, it is easy to see he is the gardener's friend.— *Evelyn G. Mitchell, in Washington Post.*

A Thought for Halloween

WHO'S afraid of a pumpkin
Ripening in the field?
Who to fear of a candle
High on the shelf would yield?

Each by itself is harmless,
Terror it has for none;
But just put the two together,
And *then* see the people run.

— *St. Nicholas.*

A Wonderful Tree

AMONG the curiosities of tree life is the sofar, or whistling tree, of Nubia. When the winds blow over this tree, it gives out flute-like sounds, playing away to the wilderness for hours at a time strange, weird melodies. It is the spirit of the dead singing among the branches, the natives say, but the scientific white man says that the sounds are due to myriads of small holes which an insect bores in the spines of the branches.

The weeping tree of the Canary Islands is another arboreal freak. This tree in the dryest weather will rain down showers from its leaves, and the natives gather up the water from the pool formed at the foot of the trunk, and find it pure and fresh. The tree exudes the water from innumerable pores situated at the base of the leaves.— *Chicago Journal.*

Signs in the Social World Regarding the Second Coming of Christ — No. 1

(*Concluded from page six*)

of several lesser dominions, could buy and sell them all."

To this we might add a comparison. If Adam were still living, and had worked all these six thousand years, six days in the week, at five hundred dollars a day, with all his expenses paid, he would not yet be as wealthy as these billionaires. This great accumulation of wealth we can not but consider in harmony with the apostle James' description of the last days. Read James 5: 1-8.

O. F. BUTCHER.

A Bath-Tub Joke

CLEAN and sweet from head to feet
Is Jerry, but not his twin.
"Now for the other!" says merry mother,
And quickly dips him in.
Jim and Jerry, with lips of cherry,
And eyes of the selfsame blue;

Twins to a speckle, yes, even a freckle —
What can a mother do?
They wink and wriggle and laugh and giggle —
A joke on mother is nice!
"We played a joke,"—'twas Jimmie who spoke,—
"And you've washed the same boy twice!"

— *Anna B. Bryant, in Youth's Companion.*

GOOD MANNERS

Christian Courtesy

AT last the time had really come to start, and Jeanette was gliding across the Western plains at the rate of forty miles an hour. A new life was before her. So far her school-days had been spent at home with a kind and loving mother ever ready to advise; but now she must learn to be independent among the many young people with whom she would be associated. Her mother's parting words came to her: "Be a true lady, Jeanette. Remember that you owe a duty to every human being, the duty of looking pleasant and being gracious. It is the little courtesies that are of importance to the happiness of life."

Just then the train stopped at a station, and Jeanette heard the conductor shout, "Come, hurry up, old man, don't be all day about it; the train can't wait." Glancing out of the window, she saw a lame man, not very prepossessing in appearance, stepping onto the car. Later she heard some one ask the conductor if he knew who the lame man was. He replied that he did not want to know. The president of the railroad introduced himself, and the conductor was dismissed from service because he lacked courtesy and politeness.

Jeanette, too, learned the lesson. She was naturally thoughtful of others, but sometimes in her eagerness and activity she forgot. "Thank you," "I beg your pardon," and, "If you please" had long been a part of her vocabulary, for her mother realized that "What Johnnie never learns, John never knows." Jeanette's mind was filled with noble resolutions as her journey neared its close.

We can not follow her in detail as she reached her destination and entered upon the life that was to be hers for the next nine months, that of the college boarding-school. She was not a perfect girl, but she had many winsome ways, and was so polite and courteous that she soon gathered around her a circle of admiring friends. They found it worth while to watch her actions. With courtesy, as with everything else, there are two kinds, the counterfeit and the true. The counterfeit is the outward manifestation of courtesy where the polite acts are just tied on, as the presents on a Christmas tree. True courtesy is a part of one's being. It is a genuine growth, just as apples grow on a tree. Jeanette's courtesy was fashioned after the apple-tree kind. It was courtesy of the heart, or Christian courtesy. Doing must come from being. The following were some of her actions that were noted by others: In entering a row of seats she would always go to the end, so no one would need to crowd by her. On the street her deportment was so quiet and dignified that she attracted no attention by loud laughing or talking. This same quiet manner characterized her in her classes, and as she passed in and out through the corridors. During chapel she at least appeared to be interested in all that was said by the speaker. Nor was the pivot upon which her head rested ever seen to turn to see those who responded to some special call. In the dining-room, should an accident occur at the table, it was Jeanette who diverted the attention of the others to something else. At church she was quiet and composed. Whispering and gazing around over the audience and noting the various costumes were far from her thoughts as she listened attentively to the announcements and comments of the minister. Not until after the closing song and benediction did she put on her wraps to leave.

She was a pleasing conversationist. But why? She listened to the speaker, apparently interested in all that he said. She did not interrupt, and was careful not to enter into an argument. Personal and private affairs she did not mention, and questions that would cause embarrassment she avoided. She did not read papers, magazines, or letters without first obtaining permission from those who were present. In fact, she avoided everything that would interfere with the pleasure of others.

Once while discussing courtesy with a group of girls, she was heard to relate this incident: "A certain W. C. T. U. woman was impressed with the fact that baggagemen had to handle too large trunks, so she supplied herself with two small ones in place of a large one. For years her kind intention was unnoticed. Finally, one grumpy old baggageman, who seemed to have a grudge against two checks, threatened her with excess baggage. When he saw the two small trunks, he was ashamed and said, 'Be them all?'

"'Yes, those are all,' was the reply.

"'Well, what made you make two of 'em?'

"'That is my way of helping to lift one big one.'

"'Your what?'

"'My way of helping to lift one big one.'

"'It is. Well, I never! You did it to save our backs?'

"'Yes, I never wanted any old man or boy to strain himself over a big trunk for me, so I divided mine in two.'

"'Well!' ejaculated the grumpy old fellow, who evidently did not know what else to say. His whole heart had suddenly mellowed; his eyes grew red, and his hands trembled as taking off his cap, he changed those checks with the air of one performing an act of religion."

Let us leave Jeanette here. We have followed her far enough till we can foresee what the influence of such a noble life as hers will be. Such courtesy as that has love for its foundation and love for its corner-stone.

One of the finest examples of Christian courtesy in the Bible is that of the good Samaritan, who was glad to sacrifice his own interests to help some one else. Let us see that we are not among those who pass by

on the other side. We want our lives to be well-rounded and filled out. Imperfect humanity needs perfect divinity. In 1 Peter 3:8 we are admonished to "be courteous." Doing acts of Christian courtesy is one means of stepping heavenward. Courtesy is a test of character. People have spent hours before the mirror, practising expressions that will aid them in some scheme. Would it not be a good plan for us to practise Christian courtesy on those around us, and show to the world that the good Samaritan did not live in vain?

"The deeds we do, the words we say,
Into the air they seem to fleet;
We count them ever past;
But they shall last:
In the dread Judgment-day
They and we shall meet."

LILLIE M. GEORGE.

When Clothes Make the Man

CHARLES WAGNER, in "The Simple Life," tells of the general who, with uniform carefully brushed, sword polished, and a nosegay in his lapel, presented himself one morning before Napoleon. It was a time of rout and defeat, and the army was discouraged and demoralized. Napoleon surveyed his visitor, arrayed as if on dress parade in piping times of peace, and said, "My general, you are a brave man." This unknown hero had availed himself of one genuine source of courage. He had resolutely put himself into a hopeful environment. He was unwilling to let anything in his personal appearance remind him or others that all was not well. His careful dress and polished accouterments were a sign to every one of better things to come.

The man in a difficult situation, or seeking work and discouraged in his quest, the woman tired and disconsolate at the end of a hard day, may well adopt this courageous policy. There is magic in a fresh collar and carefully tied cravat. One's prettiest dress and a flower in one's hair will often change a dull mood into a happy one. Why should we neglect these simple incentives to self-respect and a courageous heart? — *The Wellspring.*

GOD'S true priest is always free;
Free, the needed truth to speak,
Right the wronged, and raise the weak.
— *Whittier.*

Some Sayings of Great Missionaries

SEND me anywhere, provided it be forward.— *David Livingstone.*

From where the darkness is darkest comes to the church of Christ the call to dare and do.— *Alexander Mackay.*

Try and trust. You do not know what you can or can not do until you try.— *John Williams.*

The word "discouragement" is not found in the dictionary of the kingdom of heaven. — *Melinda Rankin.*

I do not know that I shall live to see a single convert, but I would not leave my present field of labor to be made king of the greatest empire on the globe. — *Adoniram Judson.*

I would that I had a thousand lives and a thousand bodies, that I might devote them all to no other employment than preaching the gospel to those who have never heard the joyful sound.— *Robert Moffat.*

Animals Poor Sailors

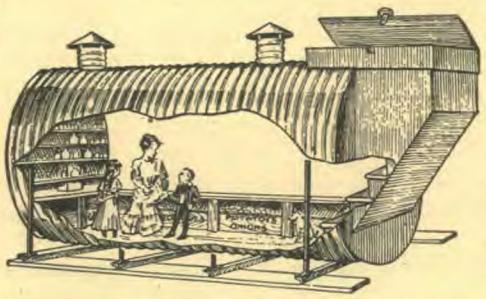
THE polar bear is the only wild animal that likes a trip on the water, according to a French scientist, who has studied its behavior at sea. He is quite jolly when aboard ship, but all other animals violently resent such a voyage, until seasickness brings silence.

The tiger suffers most of all. He whines pitifully, his eyes water continually, and he rubs his stomach with his terrible paws. Horses are bad sailors, and often die on a sea voyage.

Oxen are heroic in their attempts not to give way to seasickness. Elephants do not like the sea, but they are amenable to medical treatment.— *Fur News.*

Iron Cyclone Cellar

A METAL concern in one of the cyclone States of the West is manufacturing a cyclone cellar of extra heavy galvanized corrugated iron. The cellar has a cylindrical shape, and is provided with stairways, seats, shelves, and bins. Under ordinary conditions it is used for the keeping of fruits and vegetables. The whole is anchored solidly in the ground, and thoroughly braced.— *Popular Mechanics.*



How to Drive a Nail

THE science of nail-driving is the subject of an illustrated article contributed by W. D. Graves to the *Scientific American.* Mr. Graves notes that the driving of a nail is usually deemed so simple a matter that inability to do the job typifies entire lack of mechanical ability; yet he believes that even skilled mechanics may have something to learn in regard to this elementary operation. He says:—

"It usually takes a woodworker's apprentice a year or more to learn that he doesn't know how.

"A fledgling mechanic, who spoke sneeringly of a man whom he heard using several blows of the hammer to drive a shingle nail, was crestfallen when told that the nail would hold better when driven 'home' by several light taps, than when driven by one blow.

"'Why?' he asked, in surprise.

"'Because,' said the other, 'when you drive a nail home with a heavy blow, it is apt to rebound a trifle, loosening the grip of the wood fibers on it. Drive it almost down, if you will, with as hard blows as you wish, but finish the job with several light blows.'

"One who thinks that the driving of a nail simply consists in getting the whole length of it out of sight, has little conception of the real nature of the operation. A nail driven by an expert will often hold several times as much as one ill driven; while, too, it is often made to draw the parts into place."— *Selected.*

WE must be slow to think we know it all.

Guncotton and the Industries

A Fairy Tale in Chemistry

THE parents of guncotton are of an innocent nature and humble origin; its offsprings are, indeed, both ornamental and useful: it is only the giant itself that is so terrific. You take old rags, woodpulp, paper, or better still, cotton,— that is where it got its name,— and treat it with nitric acid. There is your guncotton.

In external appearance it has not changed a bit; it is just as ragged as the rags, as innocent looking as the cotton; but it has changed in nature.

Dry it, and you have an agent with which you can demolish cities and efface nations. But you don't dry it just yet. You dump it, hundreds of pounds at a time, in a pulping-machine or "Hollander," with which you are so familiar from the paper industry. In this big vat it is paddled around and around in a continuous stream by the big rotating knives, and every time it comes under their sharp edges, it is cut up a little finer and sent around again, until it becomes so fine you can sift it through the finest flour sieve, when it is taken out and whirled around in a centrifugal machine or wringer until it feels dry to the touch; it then holds more than one hundred per cent water.

Now it is taken to the dry-houses, and you handle it with trembling care. The men move noiselessly about — never more than two being allowed in a house — in felt slippers or rubber boots. A spark or a little friction of any kind and there is an instantaneous explosion, which leaves nothing but a hole in the ground where the innocent-looking stuff once was — except, of course, broken windows, tumbled-down chimneys, and cracked walls for miles around, and a few less human beings.

Carefully, tenderly, cautiously it is removed from the dry-houses to the dissolving vats, where it is dumped into the waiting alcohol. You draw a sigh of relief, for you can begin to handle it with comparative safety again. You need not show it such reverence this time when you take it out and put it into the mixing-machine, as you did before dumping it into the alcohol; it might burn, but it will not explode.

If you now put in only the necessary ether, you would have an elegant smokeless powder, far superior in strength, safety, effectiveness, and cleanliness to the old-fashioned ammunition. But that is not what you are after, so you add a little castor oil, or perhaps a solution of camphor; and now you can begin to handle it recklessly. Of course you might deliberately set fire to it, and it would burn quite readily indeed, but otherwise it is not more dangerous than the dough, which this same mixing-machine is ordinarily used for.

You could make artificial silk or collodion or varnish or enameled paint of that guncotton in the mixer, but you decide to turn that particular batch of the explosive into celluloid, and you treat it accordingly.

Guncotton and Celluloid

You might make the celluloid as hard as rock or as flexible as vulcanized rubber; you might make it to resemble ivory, amber, tortoise-shell, horn, different kinds of wood, or almost any other solid you can think of; you can make it as white as snow, as black as ebony, or as variegated as the rainbow; you can easily turn it or cast it or mold it or roll it into any conceivable shape: no wonder then, that it has such an unlimited practical application in daily life.

When it was first introduced, it happened to celluloid — as to most industries and other infants — that it got a black eye once in a while from the fact that a cook's hair comb suddenly burst into flames, and vanished with the glory of her head, when she came in too close proximity to her kitchen fire, or that a gentleman suddenly found himself minus cuffs and coatsleeves, when he attempted to warm his celluloid covered wrists over the open fire, but almost the very memory of such little mishaps has faded away now, when we have learned to make it more fire-proof, stable, and reliable.

You make up your mind for what particular purpose you want the batch in the mixer, and you vary the ingredients you put in accordingly. If you want it colored in any way, you put in the appropriate dye stuffs; if you want it clear, amberlike, and transparent, you put nothing but your oil in it.

After a while your guncotton mixture resembles a tough, elastic, coherent dough, and you take it out of the machine, press it through dies and roll it between heated rollers in order to still more incorporate the ingredients and to drive off the solvent, which now has become quite superfluous.

If you want a very hard product, such as is used for piano keys, billiard balls, knife-handles, penholders, collar buttons, or the like, you mix in but very little of your oil, and, after the original solvent is entirely driven off, you have a strong, hornlike substance, which you can turn or cut, as you please, and which can be polished to radiance.

If you had in mind to cast or mold beautiful toilet boxes, cigar cases, mahogany, oak, or cherry wood ornaments, or such things, you poured in a greater quantity of the oil; or perhaps you wished to make some of those pretty, flexible, tortoise-shell combs or hairpins, a delicate paper-cutter, or a neat memorandum tablet, and you used still more of the convenient oil and camphor before you rolled out the material to desired thickness.

Should you want it for some of those collars and cuffs, which are so convenient in warm weather, or for imitation leather, which has such an enormous applicability, you have to go a step further. Instead of mixing it to a dough and kneading it through rollers, you mix it more thoroughly in the heated mixer, and use a sufficient quantity of oil to give it the consistency of a heavy, spongy liquid. This you pour over outstretched jute for leather or cheese-cloth or a cheap linen fabric for linen. When the solvent is driven off, you have a strong, tough, flexible cloth, to which you can give a polish to resemble the finest patent-leather, or the dull appearance so much sought after in imitation linen.

Nor is this all that this remarkable dough made out of a most powerful explosive can be used for. If you press out this mass of guncotton into fine strings and pass them through water, you will find that they have a tensile strength and an elasticity greater than the cotton from which the substance was made, and you can spin them to the finest threads. As the stuff can be dyed into any desired shade, and it then has a luster which is not surpassed by any other textile material, and the "swish" which make silk dresses so alluring, it is used extensively for the manufacture of the world's supply of silk. For draperies, upholsteries, and all indoor uses this artificial product is as serviceable as the natural silk, but it is somewhat more sensitive to moisture than the output of the silkworms.

All the above-named manipulations of guncotton come under the heading of celluloid, but this product is by no means the only purpose for which this most valuable though dangerous servant of mankind can be used. Another almost as valuable application of its remarkable properties is the manufacture of collodion.

Guncotton and Photography

There are few arts that have been of greater benefit to science, and therefore to mankind, than photography. Our present-day astronomy, surgery, microscopy, biology, and innumerable other ologies would still be in a comparatively embryonic state, if it were not for photography, and photography again owes in a great measure its excellency to the use of collodion, which is a solution of guncotton. It is only since collodion began to be used as a carrier of the bromine, iodine, silver, gold, and platinum salts used in photography, that this art has taken such an enormous upswing, and without it our little convenient cameras and kodaks would be an impossibility.

One of the first tests, applied for the efficiency of a good guncotton, was to put a quantity of it on top of some black powder and light it with a match, when its combustion should be so rapid as not to fire the powder beneath. This rapidity of combustion,—which should not be confused with explosion,—and the strong light accompanying it, has been utilized in the production of flash-light, whose brilliancy has been still more increased by the addition of metallic magnesium powder. It is this property of guncotton that makes indoor photography a possibility.

The different forms in which we meet collodion products in our daily life are too many to be enumerated, but a few instances of its use may be mentioned.

Guncotton and Toy Balloons

Those little colored toy balloons which furnish so much amusement to the children, and are so useful in meteorological investigations of the wind currents, are made by pouring this solution of guncotton into glass bulbs of the desired size of the balloon, and colored on the inside. When the solvent is evaporated, the films are simply withdrawn by suction, and filled with a suitable gas.

Guncotton and Artificial Skin

In surgery and in many forms of skin diseases this guncotton solution is very useful for the formation of artificial skin. In such cases it is frequently made the carrier of disinfectants and healing ingredients.

The many uses to which it is put in phonographs and in all kinds of electrical appliances, are well known to everybody.

Guncotton and Varnishes

But not only in the manufacture of celluloid, artificial silk, and collodion is this highly convenient high explosive employed; it is also becoming a predominant factor in the manufacture of all kinds of varnishes, furniture polishes, enameled paints, etc. In this case the explosive is generally dissolved in amyl-acetate, whose presence is easily detected by the strong smell of bananas which is so characteristic of it. In luster and durability no other varnishes or polishes are equal to the articles prepared from guncotton.

A solution of guncotton of this kind is also exceedingly useful for preventing the detrimental action of moisture and air on fabrics, such as incandescent gas-light mantles and the like. The mantle is dipped into a thin solution of guncotton in amyl-acetate; the solvent evaporates quickly, leaving an unimpregnable film of collodion, which is momentarily burned off when the mantle is to be used. In this instance it is the characteristic of guncotton to leave no residue or ashes upon burning, which makes it so valuable.—*J. Emile Blomen, in the Technical World.*

M. E. KERN . . . . . *Chairman*
MATILDA ERICKSON . . . . . *Secretary*

Society Studies in Bible Doctrines

Lesson V — The Plan of Redemption

SYNOPSIS.— Through disobedience to God's law man lost his innocence, his home, and his life. All his posterity inherit a sinful, dying nature. A plan of salvation was at once announced. The Son of God came in sinful flesh, lived a perfect life, and died as a ransom for lost man. Every one may accept this salvation, which includes the restoration of all that was lost. Satan and his followers will be destroyed, and God will be justified before the universe.

1. What three things did man lose by his disobedience? **Gen. 3:8, 23; Rom. 6:23.**

2. What was the result upon mankind? **Rom. 5:12.**

3. How and when was provision made that God's government might be maintained, and yet man be redeemed? **John 3:16;** Rev. 13:8.

4. When was this plan first announced, and what assurance was given? **Gen. 3:15.**

5. What did the Son of God become? **John 1:14;** Gal. 4:4.

6. What kind of life did he live in human flesh? **1 Peter 2:22.**

7. How was salvation from sin made possible? **1 Cor. 15:3, 4;** Isa. 53:6.

8. What is Christ now able to do for us? **Heb. 7:25.**

9. How do we obtain the benefits of this sacrifice? **Eph. 2:8;** John 3:16.

10. How much does redemption include? **Luke 19:10;** Rom. 5:1; 6:23; Ps. 37:29.

11. What will become of Satan and those who reject God's salvation? **Rev. 20:9, 10.**

12. How will the universe look upon God, whose justice was questioned? **Rev. 5:13;** 15:3, 4; Eph. 2:7.

Notes

1. Many who teach that the law of God is not binding upon man, urge that it is impossible for him to obey its precepts. But if this were true, why did Adam suffer the penalty of transgression? The sin of our first parents brought guilt and sorrow upon the world, and had it not been for the goodness and mercy of God, would have plunged the race into hopeless despair. Let none deceive themselves. "The wages of sin is death." The law of God can no more be transgressed with impunity now than when sentence was pronounced upon the father of mankind.—*"Patriarchs and Prophets," page 61.*

3. Divine love had conceived a plan whereby man might be redeemed. The broken law of God demanded the life of the sinner. In all the universe

there was but one who could, in behalf of man, satisfy its claims. Since the divine law is as sacred as God himself, only one equal with God could make atonement for its transgression. None but Christ could redeem fallen man from the curse of the law, and bring him again into harmony with Heaven. Christ would take upon himself the guilt and shame of sin, — sin so offensive to a holy God that it must separate the Father and his Son. Christ would reach to the depths of misery to rescue the ruined race.— *"Patriarchs and Prophets," page 63.*

4. This sentence, uttered in the hearing of our first parents, was to them a promise. While it foretold war between man and Satan, it declared that the power of the great adversary would finally be broken. —*"Patriarchs and Prophets," pages 65, 66.*

12. The whole universe will have become witnesses to the nature and results of sin. And its utter extermination, which in the beginning would have brought fear to angels and dishonor to God, will now vindicate his love and establish his honor before a universe of being who delight to do his will, and in whose heart is his law.— *"Great Controversy," page 504.*

Missionary Volunteer Reading Course No. 3

Outline No. 8 — "Quiet Talks on Service," pages 191-211

Gideon's Band: Sifted for Service

1. NOTICE that all may serve. "Each has his place in the eternal plan of heaven. Each is to work with Christ for the salvation of souls. Not more surely is the place prepared for us in the heavenly mansions than is the special place designated on earth where we are to work for God." How does Jacob's experience show that the surrender of self is necessary for efficient service?

2. What is the only danger in the possession of talent? How does training affect one's value in God's work? Mention seven instances in the Bible when God used very simple means for accomplishing great results.

3. What is one of the first essentials to efficient service? What is the double value of tests?

4. How does God measure our ability for service?

5. Notice that fear is a hindrance to our own success and that of others. Why?

6. If discouragement was a bad thing for Gideon's army, how do you suppose it affects our experience? What does the author's definition of "pluck" mean to you?

7. With what kind of men can God best work? How and why was Gideon's army reduced in numbers? Do you think others can detect in you the qualities of Gideon's three hundred? Are they not very desirable qualities?

8. What kind of enthusiasm is needed? How may we keep the heart and mind in the best condition for service? How do you account for the great victory of Gideon's band?

MOZART says in his letters that whenever he saw a grand mountain or a wonderful piece of scenery, it *said* to him, "Turn me into music; play me on the organ."— *Joseph Parker.*

Junior Reading Course No. 2

Outline No. 8 — "Letters From the Holy Land" Chapters XXIII-XXV

Notes and Suggestions

LIKE the farmer we are sowing seeds every day. The fruit of kind words and loving deeds will be gathered in the harvest-time of life. After you have read the story of how Moses showed kindness to the shepherd girls, it will be interesting to find the story of Jacob. By what well was Jesus sitting when he taught about the living water? Try to find Nain, Mt. Tabor, and Mt. Hermon on a map of Palestine. Do you remember any one else whom Jesus raised from the dead?

Several years ago Mr. Thomson traveled through Palestine, and you may be interested in what he says about the farmers. "I notice that the farmers are busily at work plowing and sowing in their fields. They are putting in their summer crops. In this country the farmer can not plant until the early rain has softened the soil, and that often is delayed until the end of December. I have seen one winter when there was not enough rain to enable the farmers to sow their grain before the end of February. The harvest that year was late, but very abundant. The farmer never knows whether he will reap his harvest or not. That was why Solomon said: 'In the morning sow thy seed, and in the evening withhold not thine hand: for thou knowest not whether shall prosper, either this or that, or whether they both shall be alike good.' If the latter rains cease, no reaper can gather sheaves from his blasted fields. The reaping is done in April, May, and June usually."

Notes

Christ's followers have been redeemed for service. Our Lord teaches that the true object of life is ministry. Christ himself was a worker, and to all his followers he gives the law of service,— service to God and to their fellow men. Here Christ has presented to the world a higher conception of life than they had ever known. By living to minister for others, man is brought into connection with Christ. The law of service becomes the connecting-link which binds us to God and to our fellow men.—*"Christ's Object Lessons," page 326.*

Unselfish labor for others gives depth, stability, and Christlike loveliness to the character, and brings peace and happiness to its possessor.—*"Steps to Christ," page 100.*

Those who are partakers of the divine grace of Christ will be ready to make any sacrifice, that others for whom he died may share the heavenly gift. They will do all they can to make the world better for their stay in it. This spirit is the sure outgrowth of a soul truly converted. No sooner does one come to Christ, than there is born in his heart a desire to make known to others what a precious friend he has found in Jesus; the saving and sanctifying truth can not be shut up in his heart. If we are clothed with the righteousness of Christ, and filled with the joy of his indwelling Spirit, we shall not be able to hold our peace. . . . The efforts to bless others will react in blessings upon ourselves. This is the purpose of God in giving us a part to act in the plan of redemption. He has granted men the privilege of becoming partakers of the divine nature, and, in their turn, of diffusing blessings to their fellow men.—*"Steps to Christ."*

X — The Transfiguration; Healing the Demoniac

(December 4)

LESSON SCRIPTURES: Matt. 16:28 to 17:21; Mark 9:1-29; Luke 9:27-45.

MEMORY VERSE: "Lord, I believe; help thou mine unbelief." Mark 9:24.

The Lesson Story

1. Jesus said to his disciples, "I tell you of a truth, there be some standing here, which shall not taste of death, till they see the kingdom of God. And it came to pass about an eight days after these sayings, he took Peter and John and James, and went up into a mountain to pray. And as he prayed, the fashion of his countenance was altered, and his raiment was white and glistening.

2. "And, behold, there talked with him two men, which were Moses and Elias: who appeared in glory, and spake of his decease [death] which he should accomplish at Jerusalem. And Peter and they that were with him were heavy with sleep: and when they were awake, they saw his glory, and the two men that stood with him." Thus, as Christ had promised, these disciples saw a representation of the kingdom of God.

3. "Peter said unto Jesus, Master, it is good for us to be here: and let us make three tabernacles; one for thee, and one for Moses, and one for Elias: not knowing what he said." "While he yet spake, behold, a bright cloud overshadowed them: and behold a voice out of the cloud, which said, This is my beloved Son, in whom I am well pleased; hear ye him.

4. "And when the disciples heard it, they fell on their face, and were sore afraid. And Jesus came and touched them, and said, Arise, and be not afraid. And when they had lifted up their eyes, they saw no man, save Jesus only."

5. The scene on the mountain represented Jesus coming to this earth in glory to save his people. We know that this time is near at hand. Moses, who was raised from the grave, represented the dead who will be brought forth from the grave when Jesus comes. Elijah, who was taken to heaven without seeing death, represented those who will be living when Jesus comes, and will be taken to heaven with him. Read 1 Thess. 4:16, 17.

6. When Jesus and the three disciples came down from the mountain, they found a great multitude about the other nine disciples, questioning them. "And straightway all the people, when they beheld him, were greatly amazed, and running to him, saluted him."

7. "And, behold, a man of the company cried out, saying, Master, I beseech thee, look upon my son: for he is mine only child. And, lo, a spirit taketh him, and he suddenly crieth out; and it teareth him that he foameth again, and bruising him hardly departing from him. And I besought thy disciples to cast him out; and they could not."

8. Jesus "answereth him, and saith, O faithless generation, how long shall I be with you? how long shall I suffer you? bring him unto me. And they brought him unto him." When the boy saw Jesus, "straightway the spirit tare him; and he fell on the ground, and wallowed foaming."

9. Jesus asked the father, "How long is it ago since this came unto him? And he said, Of a child. And ofttimes it hath cast him into the fire, and into the waters, to destroy him: but if thou canst do anything, have compassion on us, and help us. Jesus said unto him, If thou canst believe, all things are possible to him that believeth. And straightway the father of the child cried out, and said with tears, Lord, I believe; help thou mine unbelief.

10. "When Jesus saw that the people came running together, he rebuked the foul spirit, saying unto him, Thou dumb and deaf spirit, I charge thee, come out of him, and enter no more into him. And the spirit cried, and rent him sore, and came out of him: and he was as one dead; insomuch that many said, He is dead. But Jesus took him by the hand, and lifted him up; and he arose."

11. "Then came the disciples to Jesus apart, and said, Why could not we cast him out? And Jesus said unto them, Because of your unbelief. . . . Howbeit this kind goeth not out but by prayer and fasting."

Questions

1. What did Christ tell his disciples some of them would see? A few days later, where did he take three of them? Which of the twelve did he take with him? As he was praying, what change occurred in his appearance? Luke 9:27-29.

2. Who came to him there on the mountain? How did they appear? What did they talk about? Why did the three disciples not know when these men came? On waking, what did they see? What promise that Jesus had made was thus fulfilled? Verses 30-32.

3. What did Peter suggest that they should do? While he was speaking, what appeared? Who spoke from the cloud? Repeat the words spoken. Verse 33; Matt. 17:5.

4. How were the disciples affected by what they saw and heard? In what manner did the Saviour reassure them? When they again looked up, what change had taken place? Verses 6-8.

5. What did the transfiguration of Jesus represent? What do we know of the time of his coming? Whom did Moses represent? What class of people are represented by Elijah? What is said of the coming of Christ in 1 Thess. 4:16, 17?

6. When Jesus and the three disciples went down from the mountain, whom did they find? What did the people do when they saw him? Mark 9:14, 15.

7. What request did one man of the company make of Jesus? What did the evil spirit cause his son to do? Who had failed to cure him? Luke 9:38-40.

8. What words of Jesus would indicate that there had been a lack of faith? What did he tell the man to do? When the son was brought to Jesus, what befell him? Mark 9:19, 20.

9. How long had he been afflicted? What had the evil spirit sometimes done to him? How did the father express doubt of Christ's power to heal? Give the Saviour's reply. How did these words affect the father? Repeat what he said. Verses 21-24.

10. Tell the rest of the story. Verses 25-27.

11. When the disciples were again alone with Jesus, what did they ask him? What was his reply? Matt. 17:19-21.

THE YOUTH'S LESSON

X — The Transfiguration; Healing of Demoniac

(December 4)

LESSON SCRIPTURE: Mark 9: 1-29.

PARALLEL SCRIPTURES: Matt. 16: 28 to 17: 21; Luke 9: 27-45.

LESSON HELPS: "Desire of Ages," chapters 46, 47; "Spirit of Prophecy," chapter 28.

MEMORY VERSE: Mark 9: 24.

Questions

The Transfiguration

1. Having called the people's attention to his second coming, what promise did Jesus make? Mark 8: 38; 9: 1.

2. In fulfilment of this promise, what event took place a few days later? How did Jesus appear on this occasion? Who of his disciples were with him? Mark 9: 2, 3.

3. Who were present besides the disciples on this occasion? Mark 9: 4; note 1.

4. What did Peter say to Jesus? Did he fully understand what he was saying? Why not? Verses 5, 6; note 2.

5. What overshadowed them? What did a voice from the cloud say? Verse 7. Compare 2 Peter 1: 16-18.

6. What became of the vision of glory? Who only remained? Mark 9: 8.

7. As they descended from the mount, what did Jesus charge his disciples? What did they question among themselves? Verses 9, 10; note 3.

8. What question did the disciples ask Jesus? What was his reply? Verses 11-13. Compare Matt. 17: 10-13; Luke 1: 13-17.

9. When Jesus came to the other disciples, what did he find? What did the people do? Mark 9: 14, 15.

10. What question did Jesus ask the scribes? What explanation did one of the multitude give? Verses 16-18; note 4.

11. How did Jesus rebuke the unbelief of the people? What command did he give concerning the afflicted boy? When he was brought into the presence of Jesus, what did the spirit that controlled him do? Verses 19, 20.

12. What question did Jesus ask the father? What was his reply? Verses 21, 22.

13. What did Jesus say to the anxious father? What earnest response did he make? Verses 23, 24; note 5.

14. How did Jesus rebuke the evil spirit which possessed the boy? Verse 25; note 6.

15. What was the condition of the boy when the spirit left him? What did Jesus do? Verses 26, 27.

16. When alone, what question did his disciples ask him? What reply did Jesus make? Verses 28, 29;

Notes

1. This statement of Jesus that some of those present should not taste of death until they saw the kingdom of God come, no doubt referred to the transfiguration. Here was given a representation in miniature of the future kingdom and home of God's people. Jesus, the King, was seen in his glory, Moses stood as a representative of the resurrected saints (Jude 9), and Elijah of those who will be translated at the coming of Christ. 1 Thess. 4: 16, 17.

2. "The cares and troubles of his [Peter's] wandering life, and all his gloomy forebodings for his Master and himself, had faded away before such brightness and joy, and, in his fond childlike simplicity, he dreamed of lengthening out the delight."— *Geikie.*

Jesus does not desire that his people shall live in solitude like monks. He desires that they mingle with a world lost in sin, and carry to the people the glad news of salvation.

3. "Questioning one with another what the rising from the dead should mean." Had the disciples not been filled with their own ideas, the meaning of Jesus' words would have been clear. This explains why many fail to understand the Scriptures.

4. See "Desire of Ages," page 430, third paragraph.

5. The Revised Versions read, "And Jesus said unto him, If thou canst! All things are possible to him that believeth." Rotherham's Translation reads, "And Jesus said to him, As for this, if it be possible to thee, Why! all things are possible to him who has faith."

"If thou canst." Jesus repeated the words of the father in gentle rebuke for his unbelief, and then encouraged him to believe.

6. Note the words, "Enter no more into him." Jesus does not intend that our victories over Satan shall be only temporary. Eccl. 3: 14.

How I Got Faith

A GIFTED lawyer once narrated how his doubts were dispelled.

"I have just got faith," he said, "and it has come so strangely to me that I want to tell you about it.

"For years I was a skeptic, reading widely on the subject of Christianity, and sometimes giving the weight of evidence to the one side, sometimes to the other, but never quite able to hold both in the firm grasp of my mind at once, and balance the evidence so as to form an abiding conclusion. And so I drifted between doubt and probability like a helpless wreck in the tossing waves of uncertainty.

"At length I married a Christian woman. Every night she read with me her Bible and prayed, and I tacitly assented, more from love for her than any real interest.

"But all the while I saw in her something which I did not possess, and which was worth more than all my intellectual superiority. One short year we lived together, and then she died. More than ever, in these last sufferings, did I see the reality and value of her faith; and when I found myself alone,— stunned with grief, and without one prop on earth to cling to,— I found myself also, without even thinking why, instinctively crying out in my agony to her God for help and comfort.

"Instantly I felt the answer. Before I had time to reason whether I believed or not, my heart had cried out in its orphanage, and had heard the answering heart of God. And that touch of love and comfort was so sweet and real that I just kept on praying, and the same answer has ever come, and I know it is God; so that now you see I have got faith, I hardly know how, but I know it is faith, and I know it is true, and that is enough for me."— *Michigan Advocate.*

"A LITTLE gall spoils a great deal of honey."

The Youth's Instructor

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Kansas Taking the Lead

ON September first a unique but useful law went into effect in the State of Kansas. The public drinking cup is now unlawful there. In railroad trains, schools, theaters, parks, and all places of public resort, drinking cups must not be used promiscuously. It is a great sanitary reform which deserves to be taken up and copied in every State.

Of all the unclean, offensive, and danger-laden objects with which people come in contact, the public drinking cup is the worst. It is handled by all classes of people, the clean and the filthy. One minute it serves as a washbowl, the next a little child has it pressed to its lips. Contemplation of the subject is repulsive in the extreme, but to some things we are so careless and hardened that it is necessary to mention disgusting details. The public drinking cup spreads more disease in an hour than a board of health can control in a week or a month. There should be a national awakening on the subject, and Kansas deserves credit for having blazed the way.— *Popular Mechanics.*

"Mother Wants Me to Marry"

A LADY was speaking recently to a bright young girl about attending one of our training-schools. Though an unconverted girl, she expressed herself as desirous of doing so, but said that her mother wanted her to get married. Now the mother professes to believe this truth, and is an officer in the home church, and is well able financially to send the daughter to school.

Why does she not do it? Only the failure to sense the worth of a human soul; the failure to sense the need of trained workers in the cause of God; the failure to sense the evils that are likely to result from an early marriage, could, it would seem, cause a parent to delay in this time to place a child under the most salutary influence possible for directing her to the way of life and of usefulness in the work of God.

Marriage is a holy institution; and by it a young woman may increase both her happiness and worth to the world, but according to the Lord's counsel conversion and education are necessary qualifications for the ideal marriage and for Christian living. Then, mothers, rest not until these two priceless jewels have been gained for your daughter. And these will, without doubt, by their great worth, in time win for her the heart of a man worthy the name of husband.

A War on Rats

OWING to the discovery of several cases of the bubonic plague in San Francisco, the United States government was called upon to aid the city in stamping out the disease. A corps of able men was sent from Washington, and this force was supplemented by hundreds of assistants from San Francisco.

"It is a rule in sanitary warfare that the point of attack should be the disseminating agent of the disease rather than the disease itself; to concentrate upon the distributor rather than a myriad of microscopic pathogenic foes. The entire plan of campaign therefore was based on the extermination of the rat. Why? — Because plague is primarily a rat disease, and secondarily and accidentally, a disease of man."

So effectively did these men prosecute their work, that seven hundred fifty thousand rodents were killed; and owners of stables, markets, and bakeries were by law compelled to make their buildings rat proof. Ten million square feet of concrete were laid during the campaign, and many other improvements made in the city's system of sanitation.

Autumn Days

AUTUMN days,
Misty haze,
  Purple sky a-shining;
Flowers dead,
Sumach red
  Woods and wayside lining.

Garnered wheat,
Bitter-sweet
  Its coral tendrils showing;
Shocks of corn,
Frosty morn,
  Freshening winds a-blowing.

— *Martha R. McCabe, in Technical World.*

An Interesting Study of Words

ANTICIPATE for *expect.* "I anticipate trouble." To anticipate is to act on an expectation in a way to promote or forestall the event expected.

Anxious for *eager.* "I was anxious to go." Anxious should not be followed by an infinitive. Anxiety is contemplative, eagerness alert for action.

Approach. "The juror was approached;" that is, overtures were made to him with a view to bribing him. As there is no other single word for it, approach is made to serve, figuratively; and being graphic, it is not altogether objectionable.

Appropriated for *took.* "He appropriated his neighbor's horse to his own use." To appropriate is to set apart, as a sum of money, for a special purpose.

Apt for *likely.* "One is apt to be mistaken." Apt means facile, felicitous, ready, and so forth; but even the dictionary-makers can not persuade a person of discriminating taste to accept it as synonymous with likely.

At for *by.* "She was shocked at his conduct." This very common solecism is without excuse.

As — as for *so — as.* "He is not as good as she." Say, not so good. In affirmative sentences the rule is different: He is as good as she.

As for for *as to.* "As for me, I am well." Say as to me.

As for *that* or *if.* "I do not know as he is living." This error is not very common among those who can write at all, but one sometimes sees it in high places.

Authoress. A needless word — as needless as poetess.— *The Cosmopolitan.*